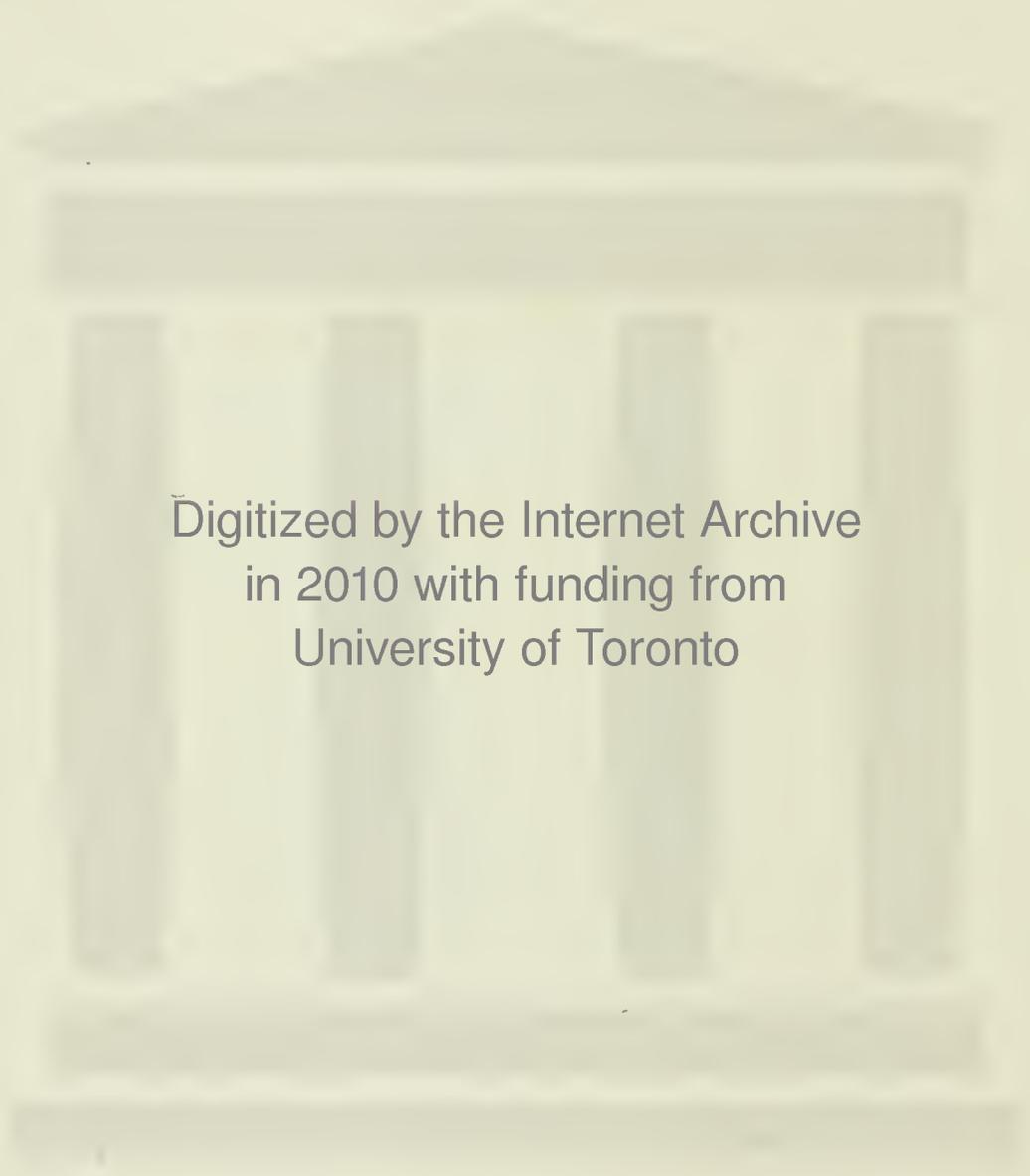


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THE
CYCLOPÆDIA;
OR,
Universal Dictionary
OF
ARTS, SCIENCES, AND LITERATURE.

VOL. II.

THE
CYCLOPÆDIA;

OR,

UNIVERSAL DICTIONARY

OF

Arts, Sciences, and Literature.

BY

ABRAHAM REES, D.D. F.R.S. F.L.S. *S. Amer. Soc.*

WITH THE ASSISTANCE OF
EMINENT PROFESSIONAL GENTLEMEN.

ILLUSTRATED WITH NUMEROUS ENGRAVINGS,
BY THE MOST DISTINGUISHED ARTISTS.

IN THIRTY-NINE VOLUMES.

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CYCLOPÆDIA:

OR, A NEW

UNIVERSAL DICTIONARY

OF

ARTS and SCIENCES.

(SECOND EDITION.)

AMARANTHUS.

AMARANTHUS, *αμαρανθος*, formed from *α*, *μαρανω* and *αθος*, or from *α* and *μαρανω*, and denoting *incorruptible*, because the flower being cropped does not soon wither, in *Botany*, a genus of the *monoecia pentandria* class and order, of the *triandria trigynia* of Gmelin's Linnæus, of the *miscellanea* of Linn. and *amaranthi* of Juss.; its characters are, that those species which have male flowers on the same plants with the females have a *calyx*, which is a five or three leaved perianthium, upright, coloured, and permanent, the leaflets lanceolate and acute; no *corolla*; the *stamina* have five or three capillary filaments, from upright patulous, of the length of the calyx, the anthers oblong and versatile: of those which have female flowers in the same raceme with the males, the *calyx* is a perianthium the same with the former; no *corolla*; the *pistillum* has an ovate germ, styles three, short and subulate; stigmas simple and permanent; the *pericarpium* is an ovate capsule, somewhat compressed, as is also the calyx on which it is placed, coloured, and of the same size, three-beaked, one-celled, cut open transversely; the *seed* is single, globular, compressed, and large. Martyn reckons 29, and Gmelin 22 species. Those with *three stamens* comprehend, 1. *A. gracizans*, pellitory-leaved amaranth, "with glomerules axillary, and leaves lanceolate, repand and obtuse." The stem is a span high, smooth, grooved, and whitish, except at the base, where it is purplish; leaves smooth, green, and marked with lines; petiole very short; the glomerules in pairs, green, four or five-flowered; and the calyx both of the male and female flowers is composed of three subulate, mucronate leaflets: a native of North America; cultivated in Chelsea-garden in 1723; flowers from July to September. 2. *A. albus*, white A. "with glomerules axillary, leaves roundish ovate, emarginate, and stem four-cornered and simple." The stem is a span high, greenish white, decumbent and smooth; the leaves petioled, green, smooth, marked with lines, ending in an herbaceous, reflex, minute, whitish point;

the petioles winged and channelled, and almost the length of the leaves; glomerules in pairs, sessile, and few-flowered; leaflets of the calyx oblong-lanceolate and whitish, with a green nerve, and at the end a subulate, herbaceous point; nearly related to the first species; a native of Pennsylvania, whence it was brought to Italy, introduced here in 1778 by M. Thouin; flowers in July and August. 3. *A. deflexus*, "with spike very short with few flowers, leaves rhomb-lanceolate, and capsules not gaping;" the stem weak, filiform, decumbent, divided at the base into a few branches, green, except at bottom, where it is brownish, round, slightly flreaked and smooth; leaves green and smooth; petioles channelled and green; spike solitary, composed of only five or six flowers; no lateral glomerules, but a flower or two scattered in the axils of the leaves; the calyx five-leaved; leaflets diaphanous, white, oblong, and edged with green; distinguished from the rest by the capsules not opening transversely, but being entire. Its native place is unknown. 4. *A. polygonoides*, spotted-leaved A. blitum of Brown, Jamaic. and chenopodium of Burm. Zeyl. "with three-leaved glomerules, female flowers funnel-shaped, and leaves rhomb-ovate, emarginate." The stem is red and smooth; the leaves smooth and green; the petioles green and channelled; the glomerules axillary, with from six to eight flowers in each; the calyx of the female flower one-leaved and ventricose; the five segments spreading much, and transparent white; the capsules falling with the calyx when the seed is ripe; the calyx of the male-flower three-leaved, membranaceous and transparent; the leaflets oblong and obtuse, with a green nerve. This species varies in different situations, it resembles the second, but differs from it in having the stem round, and the calyx of the female flowers one-leaved and funnel-shaped: it is found wild by waysides and among rubbish in the tropical countries of Asia, Africa, and America, as in Jamaica, Guiana, Senegal, Gui-

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nea,

nea, Ceylon, &c. introduced here in 1778 by M. Thouin; and flowers in August. 5. *A. polygamus*, hermaphrodite A. "with glomerules two-flamened, subspiked and ovate, flowers hermaphrodite and female; leaves lanceolate;" the stem $1\frac{1}{2}$ foot high, green, streaked and smooth, leaves petioled and naked; from the axils proceed a branch and a head, consisting of a many-flowered peduncle, with a branch on each side at the base converging into a green head; spike short, ovate, and small; the hermaphrodite flowers with two lamens and two styles, the female with three styles; a native of Guiana, China, Cochin, and Amboina: the leaves and stalks boiled are eaten with oil and pepper by the inhabitants, and much liked; it was introduced here by Sir Joseph Banks in 1780; and flowers in July and August. 6. *A. mangostanus*, "with glomerules subspiked, axillary and solitary, and leaves rhomb-roundish;" the stem is above a foot high, streaked, green, smooth, and decumbent; the leaves smooth and green, with a small brittle, almost as broad as long; petioles as long as the leaves, smooth and channelled; the flowers in large, roundish glomerules, from the axils, on short peduncles, and forming at the top a close, nodding spike; the calyces five-leaved, the leaflets white-membranaceous, transparent, oblong, with a green nerve, terminating in a brittle of the same colour: a native of the East Indies. 7. *A. inamxenus*, "with glomerules subspiked, three-leaved, axillary, geminate, and leaves rhomb-lanceolate." This species very much resembles the last, but differs in having a three-leaved calyx, the glomerules axillary and in pairs, the spike terminating, erect, and more slender, the leaves rhomb-lanceolate, and the petioles shorter than the leaves: supposed to be a native of Japan. 8. *A. melancholicus*, two-coloured A. "with glomerules axillary, peduncled, roundish, and leaves ovate-lanceolate and coloured." This species varies in the colour of the leaves; being in the open air of a dingy purple on their upper surface, and the younger ones green; in a stove the whole plant is purple-coloured; but it is easily distinguished in all states by its colour, leaves, and the lateness of its flowering after all the others are past: it is joined by La Marck with *A. tricolor*; a native of Guiana and the East Indies, and cultivated in 1731 by Miller. The obscure purple and bright crimson of the leaves are so blended as to set off each other, and, in the vigorous state of the plants, to make a fine appearance. 9. *A. gangeticus*, oval-spiked A. "with glomerules in very short spikes, ovate, and leaves ovate-lanceolate, emarginate." Mr. Martyn suggests, that this may be a variety of the preceding species, but differs from it in having a terminating spike, axillary, sessile glomerules, leaves less waved or wrinkled, and also in its colour: its stem being dark red, leaves green above and red below, petioles red, and glomerules of a reddish green colour; it is a native of Bengal and the Society Isles; was introduced here in 1778 by M. Thouin, and flowers from July to September. 10. *A. oleraceus*, eatable A. "with glomerules axillary, branching, and leaves wrinkled, oblong, very obtuse and emarginate." It resembles the next species, but differs from it in the great bluntness of the leaves, deeply emarginate, in the edge of the leaf being neither red nor waved, in the glomerules being branched and solitary, and in the peduncles and pedicels not being flexuose: a native of Guiana, the East Indies, and Egypt. This, which deserves no place in a garden on account of its beauty, and the next species, are in some parts of India used as esculent herbs; they are gathered young, and dressed like spinach, but much inferior to it: cultivated in 1768, by Mr. Miller; flowers in July. 11. *A. viridis*, green A. "with glomerules axillary, geminate trifid male flowers, ovate, emarginate leaves, and erect stem." This sort is distinct from all the rest in having the bristles

not surrounding the flowers, but scattered along the rachis of the glomerule: a native of Jamaica and Brasil; confounded by European botanists with a variety of *A. blitum*; cultivated in 1768 by Miller; flowers in August and September. 12. *A. tricolor*, three-coloured A. "with glomerules sessile, roundish, stem-clasping, and leaves lanceolate-ovate, coloured." This has been long cultivated, being in the garden of Gerard in 1596, for the beauty of its variegated leaves, in which the colours are elegantly mixed; these, when the plants are vigorous, are large and closely set from the bottom to the top of the stalks, and the branches form a kind of pyramid, and therefore there is not a more handsome plant when in full lustre; a native of Guiana, Persia, Ceylon, China, Japan, the Society Isles, &c. 13. *A. lividus*, livid A. "with glomerules subspiked, rounded, leaves elliptic, retuse, and upright stem." This species is a native of Virginia and Guiana; was cultivated in 1768 by Miller, and flowers from July to September. 14. *A. trifidis*, round-headed A. "with glomerules in loose spikes, leaves subcordate-ovate, emarginate, shorter than the petioles." This species is nearly related to the last, but may be easily distinguished by its upright stalk, more loose and slender spike, rhomboidal leaves, and five-leaved calyx: it is a native of China, Cochin, Amboina and Brasil, and used as we do spinach; cultivated in 1759 by Miller, and flowers from June to August. 15. *A. Blitum*, leaf A. or blite, "with glomerules subspiked, three-leaved flowers, leaves ovate-retuse, and diffused stem." There are three varieties, viz. *blitum album majus*, *bl. majus rubrum*, and *bl. rubrum minus*. This is a native of all Europe, except the very cold parts, Japan, &c. in cultivated grounds, on dunghills, banks, among rubbish, &c. 16. *A. scandens*, climbing A. "with spikes interrupted, compound, spikelets, bent in, leaves ovate, and stem weak." It resembles the foregoing species, and is a native of America.

The species with five stamens are, 17. *A. boëticus*, "with flowers in simple spikes, axillary, and glomerate, and leaves ovate, acute." It is doubtful whether this be a distinct species, or merely hybridous; it connects, in point of outward form, the three-stamened and five-stamened amarantus, varies much, and its native place is not known. 18. *A. hybridus*, clustered A. "with racemes decomposed, heaped, erect, and leaves ovate-lanceolate." Willdenow enumerates four varieties: 1. wholly green; 2. with a red stalk; 3. with the racemes reddish, the rest green; 4. with red racemes. These differ in appearance, but are produced by the same seed. This species is found wild in Virginia and Arabia Felix; was cultivated in 1656 by Mr. J. Tradescant, jun. and flowers from June to September. 19. *A. stricus*, "with racemes compound, erect, strict, and leaves ovate, concave." This differs from the five-stamened species in its upright racemes pressed close to the stalk, and the stiffness of the whole habit. Its native place is not known. 20. *A. latus*, "with racemes compound, erect, and leaves ovate, obtuse, and mucronate." It much resembles *A. hybridus*, but is distinguished from it by having the leaves blunt at the end, and being much smaller in stature, the stem never rising more than a foot high. 21. *A. cruentus*, various-leaved A. "with racemes decomposed, naked, patulous, and leaves lanceolate-ovate." This species varies, of a shining red colour, with a red stalk, with pale leaves, with a green stalk, with variegated leaves, &c. When first cultivated in England in 1728, the stem was wholly red and smooth, the petioles, ribs, and nerves of the leaves underneath purple; the spikes purple, much spreading, and a little nodding. They were very beautiful for the first two years, but the seeds degenerated, and the plants had little beauty. It is a native of the East Indies and of China, and flowers from June to August. 22. *A. hypochondriacus*,

A M A R A N T H U S.

driacus, prince's feather A. "with racemes compound, crowded, erect, and leaves oblong-lanceolate, and mucronate." This approaches very nearly in structure and variableness of colour to A. hybridus, and is distinguished from it, but not without difficulty, by the greater redness of the racemes, and sharpness of the leaves at the end, and by the base of the leaves running far down along the petiole; upon the whole, says Mr. Martyn, it seems to be only a variety of that. It is a native of Virginia, and flowers from July to September; was cultivated by Miller in 1739, but is now become a common weed, frequently growing upon dunghills, and abundantly scattering its seeds. 23. *A. sanguineus*, spreading or bloody A. "with racemes compound, erect, branches spreading and smooth, and leaves oblong and acute." The seeds were sent to Mr. Miller from the Bahama island before 1755, as an esculent plant, bearing fine flowers; and he describes it as growing three feet high, with purple stalks and leaves, the spikes short and swelling out in the middle, and at the extremity of the stalk arises a large cluster of spikes transversely, with one upright stalk in the middle; and these are of a bright purple colour at first, but become darker as the seeds ripen; it flowers from the middle of June to September. 24. *A. paniculatus*, "with racemes compound, branches spreading, pubescent, and leaves ovate-lanceolate." This differs from *A. sanguineus* in its pubescent branches, pointed calyxes, closer glomerules, and the whole habit: it is a native of America. 25. *A. retroflexus*, hairy A. "with racemes super-decompound, erect, branches pubescent, and leaves ovate, waved." It approaches to the last species in the pubescence of the racemes, but differs in having green spikes, setaceous-fimbulate bractes, and leaves waved about the edge: it is a native of Pennsylvania, flowers from July to September, was cultivated by Miller in 1759, and is now become a common weed in many gardens near London. 26. *A. chlorostachys*, "with racemes compound, nodding, and lanceolate leaves." It resembles *A. retroflexus*, but differs from it in its smooth stalk, lanceolate, flat leaves, glomerules in more distant racemes, and in being much more slender: its native place is not known. 27. *A. flavus*, pale A. "with racemes compound, nodding, and leaves ovate-lanceolate." It differs from the last in the form and waving of the leaves, in the red lines on the stalk, in the red rachis of the flowers, and in the greater closeness of the racemes; and from *A. retroflexus*, in having the leaves less waved, ovate-lanceolate, and much less obtuse, the stem at bottom and the petioles smooth, and the colour in the stem, rachis, and veins of the leaves red. The flowers, notwithstanding the epithet *flavus*, are always green, and only turn yellow as the seed ripens: it is a native of the East Indies, and cultivated by Miller in 1768. 28. *A. caudatus*, pendulous A. or love-lies-bleeding; there is a variety, which is *A. maximus*, or tree A. the blitum maximum of many authors. This last is made by Mr. Miller a distinct species; it rises to the height of seven or eight feet; the spikes are seldom half as long as the other, which are $2\frac{1}{2}$ feet, but much thicker. This degenerates gradually into the smaller; and the seeds, which are at first white, become red. It flowers in August and September, and was cultivated in 1683 by Mr. James Sutherland: it is a native of Persia, Ceylon, Guiana, Peru, &c. 29. *A. spinosus*, prickly A. "with racemes terminating, compound, and axilsthorny." This varies, with the spikes and stem reddish: a native of the East and West Indies, Guiana, Guinea, &c.; in the former it is eaten as a green boiled with *basella cordifolia*; it was cultivated in 1683 by Mr. J. Sutherland, and flowers from July to September.

The amaranths are annual, herbaceous plants, and most of the species are used as culinary plants in hot countries.

Culture of Amaranths. Those most worthy of a place in the pleasure-garden are the 8th and 12th; but they are tender and require attention. They are usually disposed in pots, with cocks-combs and other showy plants for adorning court-yards, and the environs of the house. Next to these are the 23d and 28th sorts, for the ornaments of the principal borders in the pleasure garden or parterres. The seeds of these should be sown in a moderate hot-bed, about the end of March; and when the plants come up, they should have much air in mild weather. When they are fit for transplanting, they should be removed to another moderate hot-bed, and placed at six inches distance, watering and shading them till they have taken new root; afterwards they should have free air, and frequent but gentle waterings. In the beginning of June they should be taken up with large balls of earth to their roots, and planted either in pots or the borders of the pleasure-garden, shaded till they have taken root, and afterwards frequently watered in dry weather. The tree Amaranth must be planted in a rich light soil, and if it be allowed room, and well watered in dry weather, it will grow to a large size, and make a fine appearance. The 21st is a tender plant, and should be treated like the 23d and 28th. The other sorts are sufficiently hardy to bear the open air, and may be sown on a bed of light earth, in the Spring, and when the plants are fit to remove, transplanted into any part of the garden, where they will thrive and produce plenty of seeds. The 23d and 28th sorts must be sown on a good hot-bed in February, or at the furthest in the beginning of March; and they will rise in about a fortnight; soon after which another hot bed must be covered with good, rich, light earth, about four inches deep; and the plants carefully raised and pricked out into this bed, at the distance of four inches every way, and gently watered. In the middle of the day let them be secured with mats from the heat of the sun, and raise the glasses to give them air; the glasses should be kept dry, for the moisture exhaled by the fermenting dung and perspiring plants is very injurious. When the plants are firmly rooted give them air every day, more or less, as the weather is cold or hot. In about three weeks or a month these plants will have grown so as to meet, and must be removed into another hot-bed, with the same rich earth, about six inches thick; observing to take as much earth about their roots as possible, and to plant them at the distance of six or seven inches every way, watering them, so as to settle the earth about their roots. In the heat of the day let them be shaded; refresh them often with gentle watering; and give them air according to the heat of the weather, and cover the glasses every night with mats. In three weeks more, the plants will have acquired a considerable size and strength, and should be exposed more and more to the open air, when the weather will permit, and thus they will become sufficiently hardened to bear being removed into the places where they are to continue the whole season; but they should not be placed in the open air till after the first week in July, and this should be done, when the air is perfectly soft, and, if possible, in a gentle shower of rain. These plants, when grown to a good stature, perspire very freely, and should, therefore, be every day refreshed with water, if the weather be hot and dry. By this management fine amaranths may be obtained; and these plants, when properly reared, are the greatest ornament to a good garden, for upwards of two months in the latter part of the summer.

Amaranths are very prolific. Willdenow says, that he saved eight ounces of seed from one plant of *A. caudatus*. The seeds retain their germinating quality for several years, but continue longer in the ground than fresh seeds, which

germinate in eight days. Gmelin's Linn. Martyn's Miller. Willdenow.

AMARANTHUS. See ACHYRANTHES, CELOSIA. ILICEBRUM, IRESINE, and RHYSA.

AMARANTHUS luteus. See GNAPHALIMUM.

AMARANTHUS maritimus, Valent. ind. 3. t. 52. f. C. C. This is also the *inugus lapideus undulatus* of Sloane, Catal. p. 2. Jam. i. p. 59: the mycedium cavatum undulatum of Hill. plant. p. 3, and cerebrites of Knorr. delie. tom. A. xi. f. 1. 2.—Linnæus describes it under the specific name of *areola*, as a mushroom. See AREOLA.

AMARDUS, in *Ancient Geography*, a river of Media, which discharged itself into the Caspian sea.

AMARELLA, in *Botany*. See GENTIANA.

AMARGURA, in *Geography*, an island in the Southern Pacific Ocean, lying in S. lat. 17° 57'. W. long. 175° 16' 54". This was the first island discovered by Maurelle, in approaching the Friendly islands in 1781; he called it *Amargura*, i. e. bitterness, on account of his severe disappointment of obtaining refreshments from it; no landing place being found even for boats, and the island itself having a singular appearance of barrenness. In 1791, Captain Edwards coasted the north-west side of this island, observed much smoke upon it, and called it Gardner's island.

AMARIACÆ, in *Ancient Geography*, a people of Asia, in the interior part of Media, near the Mardi, according to Ptolemy.

AMARISCOGGIN RIVER, in *Geography*. See ANDROSCOGGIN.

AMARISPII, in *Ancient Geography*, a people of Asia, in Bactriana, according to Ptolemy.

AMARNA, or AMARUSA, a town placed by Ptolemy in Hyrcania.

AMARULA, in *Conchology*, a species of HELIX, that inhabits the rivers and fresh waters in India: shell imperforate, or without *umbilicus*, oblong; whorls beset with spinous teeth. Linnæus adds to this concise description, that the shell is black, without spots, the spiral striæ sub-convex, and the number of whorls either five or six, each armed along the upper edge with ten sharp spines: the aperture or mouth widely gaping and white, the exterior lip acute, the interior one thick. This shell is likewise defined by another author, *buccinum testa subovata nigra; anfractibus sursum muricatis*; Mull. Hist. Verm. ii. p. 137, n. 330, and is supposed to be the *voluta fluviatilis* of Rumpf. Mus. tom. xxxiii. f. F. F.—Length from nine to 19 lines.

AMARUMAYE, in *Geography*, a river of America, which rises in the Cordelier mountains, and after a course of 400 leagues, joins the river of the Amazons, in S. lat. 5°.

AMARUS, in *Ichthyology*, a species of the CYPRINUS, that inhabits the clear streams of Germany. Its specific character is taken from the number of bony rays in the pectoral and ventral fins, of which there are seven in each; as a secondary character the dorsal fin is said to contain ten rays, the anal eleven, and the caudal twenty rays. The head is small and cuneate or wedge-shaped, the eyes minute, with the iris red and yellow; the jaws equal, gill covers yellow. The body is pellucid, silvery and finely speckled with black; above the lateral line yellow, back greenish, chalybeate-black near the tail. Upper fins reddish, lower fins greenish.

AMARYLLIS, derived either from the name of a shepherdess, mentioned by Theocritus and Virgil, or from *αμαρυλλις* or *αμαρυνη*, *splendor*, *lilio-narcissus* of Tournefort, in *Botany*, a genus of the *hexandria monogynia* class and order, of the natural order of *lilia* or *liliaceæ*, the *spatheæ* of Linn. and *narcissi* of Juss.; its characters are, that the *calyx* is a *spathe*, oblong, obtuse, compressed, emarginate,

gaping on the flat side and withering; the *corolla* has six petals, lanceolate, the nectary has six very short scales without the base of the filaments; the *stamina* have six awl-shaped filaments, with oblong, incumbent, rising anthers; the *pistillum* has a roundish, furrowed inferior germ, the style filiform, almost of the length and in the situation of the filament, the stigma trifid and slender; the *pericarpium* is a subovate, three-celled, three-valved capsule; and the *seeds* are several. The inflection of the petals, filaments, and pistil is very various in the different species of this genus; and the corolla in most of the species is rather hexapetaloid than six-petalled. Gmelin reckons 27, Mr. Martyn 29, and Willdenow 38 species.

Those with a *one-flowered spathe* are as follow: 1. *A. lutea*, yellow A. or autumnal narcissus, *colchicum luteum-majus* of Baulhin, "with an undivided obtuse spathe, sessile flower, bell-shaped corolla erect, shortly tubular at the base, and erect stamens, alternately shorter;" the flowers seldom rise above three or four inches high; the green leaves come up at the same time, and when the flowers are past, the leaves increase through the winter. This species recedes a little from the genus. It is a native of the south of France, Spain, Italy, and Thrace, was cultivated by Gerard in 1596, and flowers in September. 2. *A. Pumilio*, dwarf A. "with two-leaved, one-flowered spathe, corolla funnel-shaped, equal, segments revolute, and stamens bent in and alternately shorter." This is a native of the Cape of Good Hope, was introduced here in 1774, and flowers in November. 3. *A. Atamafco*, *atamafco lily*, "with spathe bifid, acute, flower pedicelled, corolla bell-shaped, nearly equal, erect, shortly tubular at the base, stamens bent down and equal." The flowers are at first of a fine carnation colour on the outside, but fade till they are almost white; they appear at the end of May or beginning of June, and sometimes in August. This is a native of Virginia and Carolina, where it grows plentifully in the fields and woods, and was cultivated here by Mr. Charles Hutton in 1780. 4. *A. formosissima*, *jacobeæ lily*, so called, because some imagined that they discovered in it a likeness to the badge of the order of the knights of the order of St. James, in Spain, the *lilio-narcissus* and narcissus of others, "with a spathe undivided, flower pedicelled, corolla two lipped, nodding, deeply six-parted, stamens and pistil bent down." The flowers are produced from the sides of the bulbs, are large, of a deep red, and make a beautiful appearance; it is a native of America, first known in Europe in 1593, some roots of it having been found on board a ship, which had returned from South America, by Simon de Tovar, a physician at Seville; he sent a description of the flowers to Clusius, who published a drawing of it in 1601, called by Parkinson, by whom it was figured in 1629, the *Indian daffodil*, with a red flower; cultivated in the Oxford garden in 1658. 5. *A. tubifspathe*, "with spathe one-leaved, tubular, bifid and one-flowered, and peduncle twice as long as the spathe;" found at Buenos Ayres, by Commerson. 6. *A. subiflora*, "with spathe one-flowered, two-leaved, corolla funnel-shaped, with a very long tube;" found in the sandy lands of Lima. 7. *A. maculata*, "with spathe one-flowered, two-leaved, linear, flower peduncled, stamens and style bent down;" found in Chili by Dombey. 8. *A. chilensis*, "with spathe one or two-flowered, one or two-leaved, lanceolate, flowers peduncled, and leaves linear." The flowers, which are those of *A. belladonna* or *reginæ*, are of a purple colour; found in Chili by Dombey. 9. *A. clavata*, "with spathe one-flowered, two-leaved, subulate, and corolla club-shaped:" native of the southern part of Africa.

The species with a *two-flowered spathe* are, 10. *A. reginæ*, Mexican lily, "with spathe, having about two flowers, pedicels divaricating, corollas bell-shaped, shortly tubular, nodding, throat of the tube hirsute, and leaves lanceolate, patulous;"

patulous ;" the bulb is green, corolla scarlet, and at the bottom whitish green, the style red, the flowers large, of a bright copper colour, inclining to red: it flowered in Fairchild's garden, at Hoxton, in 1728; and Dr. Douglas wrote a folio pamphlet upon it, giving it the title of *lilium reginae*, because it was in full beauty on the 1st of March, the queen's birth-day: the roots were brought from Mexico, and therefore Mr. Fairchild called it Mexican lily, the name which it has retained: it flowers in the spring in a very warm stove; is in beauty in February, and in a moderate temperature of air, will flower in March or April. 11. *A. purpurea*, purple flowered *A. crinum speciosum* of Linn. Suppl. "with spathe, having about two flowers, corollas somewhat erect, tubular at the base, throat of the tube smooth, and leaves linear-lanceolate:" nearly allied to the last: the corolla large, and of a blood-red purple colour; a native of the Cape of Good Hope, and introduced here in 1774. 12. *A. linearis*, crinum lineare of Linn. Suppl. "with linear leaves, bell shaped corollas, two and narrower segments;" the flowers are large and white; found at the Cape of Good Hope. 13. *A. equesfris*, Barbadoes lily, *A. dubia* of Linn. Amœn. Acad. "with spathe having about two flowers, pedicels erect, shorter than the spathe, tube filiform and horizontal, border spreading, open obliquely and curved upwards, and throat hairy;" a native of the West Indies; introduced by Dr. W. Pitcairn in 1778. 14. *A. reticulata*, flat-stalked *A.* "with spathe having about two flowers, corollas tubular at the base, and nodding, throat of the tube smooth, scape compressed, leaves oblong and attenuated at the base;" distinguished by the transverse veins of the petals and smoothness of the throat; a native of Brasil; and introduced by Dr. E. W. Gray in 1777. 15. *A. tatarica*, "with spathe having about two flowers, corolla sub-campanulated, and deeply six-parted, segments superior, very narrow, inferior obovate acuminate, and leaves linear, longer than the scape." found in Siberia.

The species with a *many flowered spathe* are, 16. *A. Belladonna*, Belladonna lily, "with corollas somewhat erect, six-petalled, petals flat, scape compressed, leaves sharply channelled, bluntly keeled, and very smooth." This species differs from the *A. reginae*, by having the edges of the petals waved, and not reversed at the tip: was first brought to England about 1712, from Portugal, abounds about Florence, and fold under the name of Narcissus Belladonna; usually flowers in England about the end of September or beginning of October, and the stem rises upwards of two feet in height; in a favourable season, and, when screened from frosts, high winds, and heavy rains, will continue in beauty a month or longer, and is an ornamental plant, when other flowers are scarce; a native of the West Indies, on shady hills, by the side of streams. 17. *A. vittata*, superb or ribband *A.* "with flowers pedicelled, corollas wedge-funnel shaped, the rachis of the outer fastened to the edge of the inner petals, scape round, and stigmas grooved." It is striped with red on a white ground, whence its name vittata or ribband *A.*; in perfect blossom, it deserves the name of superb, given to it by Aiton, its stem rising to the height of three or more feet, and producing from two to five beautiful flowers; usually blossoms in April or May; is probably a native of the Cape: and introduced into England by Mr. W. Malcolm, in 1769. 18. *A. falcata*, sickle-leaved *A.* or crinum, "with corollas peduncled, erect, six-petalled, scape compressed, of the length of the umbel, leaves flat, pressed to the ground, about the edge sickle-shaped, white, cartilaginous and crenate." It is a native of the Cape, and introduced here in 1774, by Mr. F. Masson. 19. *A. ornata*, cape coast lily or *A.* "with flowers sessile, corollas tubular at the base, tubes longer than the spathes, and

border, curved, segments of the border oblong, awned, lowest segment divaricate and concave." It is a native of Guinea, probably cultivated by Lord Petre, in 1740, and flowers with us in June and July. 20. *A. longifolia*, long-leaved *A.* "with flowers pedicelled, 12—20 in a spathe, corollas tubular at the base, tube curved, short, segments of the borders lanceolate, obtuse, leaves broad subulate, channelled, and flaccid at the tip." It is a native of the Cape of Good Hope, introduced in 1773, by Mr. F. Masson, and flowers in July. 21. *A. montana*, "with many-flowered spathe, leaves linear-subulate, petals alternate, mucronate, stamens and style erect;" or, according to Willdenow, "with bell-shaped equal corollas, segments alternate, awned, stamens and style straight, and twice shorter than the corolla, foliose scape and linear leaves." This is a native of the higher parts of Mount Lebanon. 22. *A. zeylanica*, Ceylon lily, Javan tulip of Rumphius, "with many-flowered spathe, corollas reclining, tube filiform, very long, and segment uncinate." This is a native of the East Indies. 23. *A. revoluta*, revolute *A.* "with flowers pedicelled, corollas tubular, at the base, tube filiform, short, curved, leaves linear, narrow, channelled, long, flaccid from their origin." It is a native of the Cape of Good Hope, introduced here in 1774, and flowers in September. 24. *A. latifolia*, crinum latifolium of Linn. Miller, and Rheed, "with many-flowered spathe, flowers pedicelled, somewhat reclining, tubular at the base; and leaves oblong-lanceolate." It is found in the sandy soil of the East Indies. 25. *A. aurea*, golden *A.* "with flowers pedicelled, somewhat erect, corollas funnel-form club-shaped, almost six-petalled, segments linear, lanceolate, stamens and style straight, leaves linear, erect, channelled, with a reflex, smooth margin." It is a native of China, introduced in 1777, by Dr. Fothergill, and flowers in August and September. 26. *A. orientalis*, broad-leaved African *A.* "with many-flowered spathe, flowers pedicelled, six-parted, considerably shorter than the peduncles, irregular, germs wedge shaped and angular." It is a native of the Cape of Good Hope, whence Mr. Miller received the roots which succeeded in the Chelsea garden; in the Kew catalogue, said to be introduced in 1767, by Mr. W. Malcolm. 27. *A. sarniensis*, lilium sarniense of Douglas, who published a description of it in 1725, Narcissus of others, Guernsey lily, so called by Mr. Ray in 1665, "with petals linear, flat, stamens and pistil straightish, longer than the corolla, stigmas parted and revolute." The bulb is an oblong spheroid; the leaves are dark willow green; the number of flowers is commonly from eight to twelve, and circumference of each about seven inches; the corolla, in its prime, has the colour of a fine gold tissue wrought on a rose-coloured ground, and when it begins to fade, it is a pink; in full sunshine, it seems to be studded with diamonds, but by candle-light the specks or spangles appear more like fine gold dust; when the petals begin to wither, they assume a deep crimson colour. The flowers begin to come out at the end of August, and the head is usually three weeks in gradually expanding. This beautiful plant is a native of Japan, and has been long naturalized in Guernsey. It is said to have been brought from Japan to Paris, and cultivated in Morin's garden before 1634. It was cultivated at Wimbledon, in England, by general Lambert, in 1659, and in 1664 became more common: it does not seem to have been in Holland before 1695. The plants are reputed to owe their origin in Guernsey to the shipwreck of a vessel returning from Japan, probably before the middle of the 17th century. The bulbs, it is said, being cast on shore, took root in that sandy soil, and produced beautiful flowers, which engaged the attention of Mr. Hatton, the governor's son, who sent roots to several of his friends. A variety of this

found at the Cape of Good Hope is described by Jacquin, "with a many-flowered spathe, corollas very patent, and reflex at the apex, stamens and pistil somewhat straight, longer than the corolla, and leaves ensiform-linear." 28. *A. marginata*, "with oblong revolute petals, stamens and pistil somewhat straight, longer than the corolla, linguulate leaves pressed to the ground, cartilaginous-marginate;" or, according to Jacquin's description, "with a many-flowered spathe, corollas very broad, and reflex at the apex, erect pedicles, sublinguiform and prostrate leaves, terminated with a margin coloured, and undulated towards the apex." This is a native of the Cape of Good Hope. 29. *A. curvifolia*, "with oblong, waved, revolute petals, stamens and pistil somewhat straight, and longer than the corolla, with leaves stiff, linear-ensiform and canalculated;" or, according to Jacquin, "with many-flowered spathe, revolute, undulated corollas, erect pedicles, and leaves sublinear, widely channelled, and subfoliolate." This is a native of the Cape of Good Hope. 30. *A. undulata*, waved flower African A. "with linear channelled, waved petals, stamens and pistil bent down, shorter than the corolla, and obsolete stigma." The flowers have no scent, and expand from November to the beginning of January: a native of the Cape of Good Hope, introduced about 1767, by John Blackburne, esq. and flowers here from April to June. 31. *A. radiata*, snow-drop leaved A. "with lanceolate, waved petals, stamens and pistil bent down, diverging, twice as long as the corolla, and obsolete stigma." The native place of this species is unknown, cultivated by Miller in 1758, and flowers in June. 32. *A. humilis*, "with three or four-flowered spathe, lanceolate, subringent-patent petals, waved-reflex at the apex, with the lowest divaricated, the stamens and pistil ascending, shorter than the petals, and leaves linear, obtuse, smooth, naked and flat;" or, according to Jacquin, "with few-flowered scapes, patent petals, the lowest divaricated, and leaves linear, obtuse, and flat." It much resembles the next species, but the scape and leaves are twice less; a native of the Cape of Good Hope. 33. *A. flexuosa*, "with many-flowered spathe, petals lanceolate, subringent-patent, waved-reflex at the apex, the lowest divaricated, the stamens and pistil ascending, shorter than the petals, and leaves linear, somewhat obtuse, concave, and pustulate dotted;" or, according to Jacquin, "with many-flowered spathe, patent petals, the lowest divaricated, and linear, pointed leaves." The younger leaves are marked with white pustules; the more adult pointed, and when dry the points vanish; a native of the Cape of Good Hope. 34. *A. radula*, "with many-flowered spathe, petals lanceolate, subringent-patent, flat, the lowest divaricated, the stamens and pistil ascending, of the length of the petals, with leaves elliptic, pressed to the ground, and roughly pustuled;" a native of the Cape of Good Hope. 35. *A. striata*, "with many-flowered spathe, corollas bell-shaped, shortly tubulous, segments flat, reflex at the apex, stamens and pistil ascending, and the leaves elliptic-ovate, erect, and marginated;" or, according to Jacquin, "with many-flowered spathe, corollas bell-shaped, equal, and reflex at the apex, sub-ovated leaves, and striated on the back;" a native of the Cape of Good Hope. 36. *A. crispa*, "with few-flowered spathe, petals very patent, oblong, obtuse, and waved, stamens divaricated and shorter than the corolla, straight style, and leaves linear-filiform, and lax;" or, according to Jacquin, "with few-flowered spathe, petals very patent and crisp, and leaves linear and very narrow." The flowers are very small: a native of the Cape of Good Hope. 37. *A. stellaris*, with many-flowered spathe, corollas patent and flat, a very short tube, stamens unequal, divaricated, shorter than the corolla, straight style, and leaves linear and erect;" or, according to Jacquin, "with many-flowered spathe, very patent petals three, alternate,

and barbated below the middle;" a native of the Cape of Good Hope. 38. *A. cypria*, crinum caspiem of Pallas, "with many-flowered spathe, bell-shaped corollas, very short tube, filaments erect, longer than the corolla, and leaves lanceolate and waved;" found near the Caspian Sea, in the beginning of Spring. 39. *A. spiralis*, "with spathe two-leaved, few-flowered, peduncles filiform, very long, and leaves subulate." L'Heritier. This species was discovered by Bruguere in sandy grounds near the Cape of Good Hope. 40. *A. cinnamomea*, "with many-flowered spathe, corollas sub-hexapetalous, lanceolate, waved, stamens and pistil erect, shorter than the corolla." L'Heritier. This species is allied to *Hæmanthus*: was found by Bruguere at the Cape of Good Hope. 41. *A. alba*, "with flowers declining, and leaves linear-lanceolate." Forst. Fl. Æg. Arab. p. 209. Martyn. Gmelin's Linnæus. Willdenow.

Culture and Propagation. Most of these species have very beautiful flowers, and merit the attention of the botanist and florist. The first, or yellow autumnal A. is very hardy, and increases by offsets. The season for transplanting these roots is from May to the end of July, when the leaves are decayed. They will grow in any soil or situation; but they will thrive best in a fresh, light, dry soil, and open situation, and will keep flowering from the beginning of September to the middle of November, provided that they escape severe frosts; and a succession of flowers will spring from the same root. The third, or Atamasco lily, may be propagated by offsets from the bulbs, and will thrive in the open air on a dry soil, and in a warm situation. The 4th, or Jacobæa lily, is propagated by offsets, which are taken off every year; and the best time for shifting and parting the roots is August. They should be planted in middle-sized pots, and they will produce flowers two or three times in a year, and from March to September, when the roots are vigorous. The 10th, or Mexican lily, is less hardy, and must be placed in a warm stove, or the pots should be plunged into a hot-bed of tanner's bark, and may be increased by offsets. It flowers usually in the beginning of Spring and makes a fine appearance in the stove. The 16th, or Belladonna lily, is cultivated by preparing a border near a wall, with a south-west aspect, about six feet wide; and for this purpose the earth should be removed to the depth of three feet, six inches of rotten dung laid at the bottom, and covered to the depth of about twenty inches, with light garden mould: the roots should then be placed at the distance of six inches every way, and covered over with light sandy earth, so as to bury the upper part of the roots about five or six inches; and in the Winter the border is to be covered with rotten tanners' bark to the depth of three inches, in order to guard against the frosts: and in severe frosts mats or straw should be laid over the leaves, to prevent their being killed. Thus managed, the roots will greatly increase, and produce flowers every year, which make a fine appearance during the month of October. The green leaves will abide till June, and then decay, after which the roots should be transplanted. The 17th species may be easily propagated by seeds. The 20th may be treated in the same manner as the Jacobæa lily; will increase by offsets; and usually flowers in Winter, when the pots are placed in a moderate stove; and as there are few flowers in Winter in the open air, it is on this account the more valued. The 26th must be placed during Winter in a stove of moderate warmth, and less watered than the Jacobæa lily. The 27th, or Guernsey lily, has been cultivated for many years in the gardens of Guernsey and Jersey, whence the roots are sent to most parts of Europe. The bulbs are commonly brought over in June and July, and they should then be planted in pots filled with fresh, light, sandy earth, mixed with a small quantity of very rotten dung, placed in a warm

a warm situation, and occasionally refreshed with water. About the middle of September the stronger roots will shew their red-coloured flower-stem; and then the pots should be removed into a situation where they may have the full benefit of the sun, and be sheltered from strong winds; but not placed under glasses, or too near a wall, which would draw them up, and render them less beautiful. When the flowers begin to open, the pots should be put under shelter, so as to be secure from too much wet, but not kept too close or too warm. The flowers will continue in beauty for a month; and though without scent, their rich colour entitles them to the first rank in the showery tribe. After the flowers are decayed, the leaves will grow through the Winter, and they will be best sheltered in a common hot-bed frame. The roots should be transplanted every fourth or fifth year, toward the latter end of June, and planted into fresh earth. The offsets, planted in separate pots, will in three years time produce flowers; these roots will furnish a stock, which will supply blowing roots without the trouble and expence of obtaining them from Guernsey; and the roots preferred here will flower more strongly than those that are usually brought from thence. In order to preserve a large number of these roots without pots, a bed may be prepared in a well-sheltered part of the garden, by mixing a third part of fresh virgin-earth from a pasture ground with equal parts of sand, of rotten dung, and sifted lime rubbish. Of this, when it has been well incorporated, there should be made a bed about two feet thick, raised in dry ground four or five inches above the surface, and if the ground be moist eight or nine inches higher. In this bed the roots should be planted, about the beginning of July, about six or eight inches asunder each way; and in the Winter, when the frost sets in, covered with mats and straw; but in the Spring the covering may be removed, and during the Summer kept clear from weeds, and the earth occasionally stirred; and every year, when the leaves are decayed, a little fresh earth should be sifted over the beds, in order to encourage the roots. Here the roots may remain till they are strong enough to produce flowers, and then removed to pots, or suffered to remain in the same bed to flower. The roots of these plants often flower twice in the compass of three years; after which the same root will not flower again in several years, but only the offsets from it. The 2d, or Ceylon lily, is tender, and must be treated like the Mexican lily. It flowers usually in June and July, and sometimes the same root will flower again in Autumn; and if the pots are plunged into a bed of tanners' bark, the roots generally flower twice every year; but the flowers are not of long duration. The 2d may be increased by offsets from the roots, or by the bulbs which succeed the flowers; and it must be treated like the *Criminus*. The best time for transplanting the roots is about the beginning of August, when the leaves are quite decayed. Martyn's Miller.

AMARYLLIS *Capensis*. See *HYPOXIS Stellata*.

AMARYLLIS *Ciliaris*. See *HÆMANTHUS Ciliaris*.

AMARYLLIS *difficha*. See *HÆMANTHUS toxicarius*.

AMARYLLIS *umbrella*. See *CYRTANTHUS obliquus*.

AMARYNTHUS, in *Ancient Geography*, a small island of Eubœa, according to Steph. Byz.; but, according to Strabo and Pausanias, a small place in the island, famous for a temple of Diana, where she was worshipped, and hence called *Amarynthia*.

AMAS, a mountain of Peloponnesus in Laconia, according to Pausanias, near Las and Gythium.

AMASENUS, *la Toppia*, a river of Italy. Also another river of Italy, which ran into the Liris.

AMASIUS, *Romulus*, in *Biography*, a professor of

Greek and Latin at Bologna, and secretary to the senate, was born at Udine, in Friuli, in 1489. Paul III. invited him to Rome, made him preceptor to his grandson Alexander Farnese, and employed him on several embassies to the emperor, the princes of the empire, and the king of Poland. He taught rhetoric at Bologna with an annual salary of 300 crowns, and at Rome, where he was much esteemed for his learning, and had a pension of 600 crowns a year. He translated Pausanias, which translation was corrected by Sylburgius, and Xenophon's Expedition of Cyrus the Younger. He also wrote a volume of "Orations," and "Scholæ duas de Ratione Inlittuendi." Two books, in which he shews that the Latin tongue is preferable to the Italian, were never printed. Huætius, "de claris Interpret." represents him as a great admirer of perspicuity and politeness of style, and says of him that he enlarged what was too concise, abridged what was too prolix, and elucidated obscure passages. He died about the year 1552, and left one son, named Pompilius, who taught Greek at Bologna, and translated two fragments of the 6th book of Polybius. Gen. Dict.

AMASIA, in *Entomology*, a species of *PAPILIO* in the *nymphales* section. Wings indented, of a green colour, with a row of black spots along the margin of the posterior pair: underside marked with ocellated spots. Found in Surinam. Fabricius.

AMASIA, a species of *PHALÆNA*, of the *noctua* family. Wings varied with cinereous, and whitish, with a fulvous streak: lower-ones yellow, with two black bands, the outer one interrupted. Abbot Inf. Georgia, by Dr. Smith.

AMASIA, in *Ancient Geography*, a district or division of Anatolia Natolia, or Asia Minor, in Asiatic Turkey, bounded on the north by the Euxine Sea, on the east by Armenia, on the west by Anatolia Proper, and on the south by Caramania and Aladulia. The capital of this country is Amasia, called by the Turks Amnusan and Amasich, which is an ancient town, situate among mountains, three miles distant from the river Iris, or Cassimack, and the residence of the governor of Cagherbag. It has been customary for the eldest son of the Grand Signior to reside here till he is called to the throne. The city was formerly the seat of the kings of Cappadocia, and some remains of its ancient magnificence are still existing. It gave birth to the famous geographer Strabo, and in Christian times it has been the see of an archbishop. Its wine and fruits are excellent. It is 12 leagues south of the Euxine Sea, and 200 miles east of Constantinople. N. lat. 40° 31'. E. long. 36°.

AMASIA, or AMISIA, in *Ancient Geography*, a town of Germany, supposed by some to be the present Embden, and by others Marburg. It was near this town that Drusus vanquished the Bructeri.

AMASIS, in *Biography and History*, king of Egypt, was of plebeian extraction, and by his meritorious services obtained the confidence of Apries, his sovereign, whom he succeeded in the throne, B. C. 569, and soon after put to death. Upon his accession he was assiduous in the exercise of his public duties, devoting his mornings to business, and his evenings to social amusement. Under his reign Egypt was singularly prosperous and happy, and is said to have contained 20,000 populous cities. For the preservation of order and the encouragement of industry, he enacted a law which required every person to inform the governor of the province once a year how he earned his living, and those who were not able to give a satisfactory account of themselves were punished with death. To the Greeks he was a great friend, inviting them into Egypt, and granting them places where they might erect altars and temples to their own

own deities; and it is said that he was visited by Solon; he also married a Greek woman. Such was the liberality of his disposition, that he contributed a thousand talents of alum to the Delphians for their relief when their temple was burnt, and he granted to the Greeks several valuable donations. In his own country he erected several magnificent buildings, and at a very great expence enriched the principal temples with gifts and ornaments. Amasis was the first person who subdued Cyprus, and extorted tribute from its inhabitants. The close of his reign, however, was very different from its commencement and progress. Having by some means or other, probably by refusing to pay the same homage and tribute to Cambyses which he had been accustomed to render to Cyrus, incurred the displeasure of the Persian sovereign, Cambyses prepared to invade Egypt, and derived effectual assistance from Phanes of Halicarnassus, who commanded the Greek auxiliaries in the pay of Amasis, and who, leaving Egypt in disgust, embarked for Persia. Amasis was also deserted by Polycrates of Samos, who, after having been his ally and friend, joined Cambyses against him. Thus deserted by a prudent and valiant general, and by a powerful ally, and apprehending the formidable invasion of Cambyses, Amasis was rescued from the evils that threatened him, and that beclouded the closing scenes of his life, by death, B. C. 525, after a reign of 44 years. His dead body was embalmed, and deposited in a sepulchre which he had built for himself in the temple at Sais. The reign of his son and successor, Psammetichus, was short and calamitous; and the victorious Persians, after his defeat, capture, and death, took the body of his father Amasis from the tomb, mangled it in a shocking manner, and then burnt it. Thus terminated the ancient splendour and liberty of Egypt. Herodotus. Diodorus Siculus. Un. Hist. vol. i. p. 314—323. Rollin's Anc. Hist. vol. i. p. 99—101.

AMASIS, in *Entomology*, a species of PHALÆNA, of the *Bombyx* family. Wings deflected; anterior pair whitish, streaked with black, posterior pair yellow, with black spots. Abdomen black, belted with red. It is further described as having the head and thorax whitish, with black spots. The red or sanguineous marks that encircle the abdomen are five in number, and the three black streaks on the anterior wings are angulated. A native of Surinam. Fabr. Ent. Syst.

AMASIVS, in *Ancient Geography*, a river of Germany, the present *Ems*.

AMASONIA, so called from *Amason*, a traveller into America, in *Botany*, a genus of the *didynamia angiospermia* class and order. Its characters are, that the *calyx* is a perianthium, one-leaved, bell-shaped, semi-quinquefid, acute, equal, and permanent: the *corolla* is one-petalled, tubulous, longer than the *calyx*; border quinquefid, sub-equal, spreading, and small; the *filamina* have four filaments at the upper side of the corolla, and longer than it, bending in at the end, two of them shorter, the anthers oval and incumbent: the *psittillum* has an ovate germ, style in the situation and form of the stamens, stigmas two and sharp, no *pericarpium*. The *seeds* are an ovate, one-celled nut, of the same length with the *calyx*. This agrees with the *Taligalea* of Aublet in every thing except the fruit, which, according to him, is a drupe, longer than the *calyx*, one-celled, and containing two small hemispherical one-celled nuts. There is one species, viz. *A. vera*. It is a native of Surinam, with an herbaceous stem, three feet high, round and simple: the leaves are alternate, petiolate, remote, elliptic-lanceolate, subserrate, and scabrous; the flowers in a simple terminal raceme, a foot long, with about three flowers on a pedicel: the

bracts ovate, sessile, a little longer than the flowers, which are yellow, nodding, and grow all on one side of the stalk. Martyn.

AMASSEIA, in *Ancient Geography*, a town of Peloponnesus, in Achaia.

AMASSI, a people of the Asiatic Sarmatia.

AMASTRA, a town of Sicily, the same with Amestratus.

AMASTRIS, now *Amastro*, a town of Asia Minor, in Paphlagonia, upon a small isthmus which joined the peninsula Selamus to the continent. It was built by Amaltris, the wife of Iyfinachus, who gave it to his wife Arsinoc, and by her the government of it was entrusted with Hierocles. Soon after it became very considerable, and put itself under the protection of Ariobarzanus, the son of Mithridates. When the Romans carried their arms into Asia, Amaltris was taken by Triarius, the lieutenant of Cotta. From the Romans it passed to the Greek emperors: it was afterwards taken by the Venetians: from them it became the possession of the Turks; and, having lost its commerce, it is now almost annihilated.

AMATA, in *Entomology*, a species of PAPILIO, in the section *Danaï Candidi*, with rotund fulvous coloured wings, bordered with black on the upper side; beneath greenish; is found in India. Linn. Syst. Nat.

AMATARIA, a species of the PHALÆNA, of the *Geometra* family, that inhabits Europe. The wings are angulated, of a pale brown, slightly speckled, with an obsolete darker-waved streak, and a straight purple line across the middle. It is produced from a green larva, with yellow rings, that feeds on the leaves of oaks. Linnæus. Don. Brit. Insects, tab. 33. fig. 2.

AMATEUR, in the *Arts*, is a foreign term introduced and now passing current amongst us, to denote a person understanding, and loving, or practising, the polite arts of painting, sculpture, or architecture, without any regard to pecuniary advantage. Such have been found in the revivals of painting, &c. in most countries. Amateurs who practise were never perhaps in greater number or of superior excellence than at present, and those who delight in and encourage the arts have been the means of raising them in this country to that eminence to which they are arrived. It is to be regretted, however, that the great works of former ages, collected by amateurs in this kingdom, are not so accessible to our professors as they are in foreign countries, which would tend to accelerate the progress of the arts, and that the encouragement given by these amateurs is in general upon too limited a scale.

It may occasion some surprize to the next generation, that *Royal Patronage* has not roused to emulation in this particular more of the noble amateurs who surround the throne, and induced them to encourage the greater works, as they do such as are of an inferior nature; for thus our reputation in historic art would be elevated so as to be equal, if not superior, to that of any of the neighbouring nations, and even to rival the justly celebrated pictures produced in the 14th and 15th centuries, and our sculptors might be equally esteemed with those of ancient Greece or Rome.

AMATEUR, in *Music*, is equal, in French, to the term *Dilettante*, Ital. implying a lover and cultivator of music, not professionally, but for his amusement—a gentleman performer. In the *Encyclopedie Methodique* we have a long article on the subject, by M. Guinguerié, in which he divides *les Amateurs* into three classes, which he describes in the following candid and fair manner. "The first is composed of such as are born with delicate organs and much sensibility to the beauties

tics of music, and who, not having had leisure, inclination, or the means of cultivating their natural propensity, continue through life to cherish their passion for the art; eagerly attending all concerts and musical dramas; and, finally, by frequent and impartial parallels, dictated by nice and accurate discrimination, becoming, sometimes, better judges of composition and performance than trained professors, possessed neither of taste nor impartiality.

“The second class comprehends those who have had the means of developing, and confirming by study, the gifts of nature, and who have sublimed their dispositions into talents. Of these the number is at present considerable. Music is become so interesting a part of a good education, and vocal and instrumental music have made so great a progress, and are so generally cultivated, that there are few private concerts in which more talents are not displayed by amateurs of both sexes than the most celebrated professors possessed in France 20 years ago. Concerts entirely composed of gentlemen and lady performers are not uncommon; but persons at all difficult are much dissatisfied if the principal parts at least are not guided by able professors.

“The third class is the most numerous and the most distinguished, though they are less ambitious of shining than the second: it is composed of *amateurs*, who, not content with learning to read and execute music, have tried to penetrate into the secrets of the art, and enable themselves to account for the pleasure they receive, by analysing their sensations and studying the theory of music, to enable themselves to judge more accurately of the practice, and to unite intellectual pleasure with that of sense and the heart. Masters are fortunate who have such for judges, where their knowledge is incorporated with natural sensibility and candour; and still more happy, a thousand times, the true *amateur*, who has neither the rage of decision, of disputation, nor the arrogant pretensions of settling ranks; who, knowing the arcana and refinements of the art, discovers and tallies beauties unknown to vulgar hearers; who, preserving his primitive sensibility, enlightens it by meditation and study: and who finds himself impelled, both by judgment and feeling, to treat with regard the artist to whom he owes his pleasure, without distinction of nation or party.

AMATH, in *Ancient Geography*, a town of Syria, called by the Greeks *Emesa*.—Also, a borough of Palestine, near Gadara, the same with *Amatha*.—Also, a town of Cœloryria, called by the Greeks *Epiphania*.

AMATHA, a country of Arabia.—Also, a town of Phœnicia, probably the same that was founded by the 11th son of Canaan, called *Chamati* in the Book of Genesis, and by the Septuagint *Amathi*. According to Josephus, it was the capital of the Amathæans, and some have supposed it to be the same with *Emesa*.—Also, a place of Judea, in that part of it that was allotted to the half-tribe of Manasseh, on the east of Jordan.

AMATHÆI, a people of Arabia Felix, according to Pliny.—Also, a people who inhabited the Land of Promise before the Israelites, and who occupied part of the tribe of Nephtali, towards Mount Libanus. These people were vanquished by the Israelites, and retired into Phœnicia, where they built Amath, or Emath, on the banks of the river Orontes. According to Josephus, they sent forth a colony, who built the town of Amath, near the Lake of Genesareth.

AMATHEA, in *Entomology*, a species of PAPILO, in the *Nymphales* section, that inhabits South America. The wings are angulated, brown, with white spots; a red band, and undulated black line. Linn. Syst. Nat.

AMATHO. See AMATO.

AMATHUS, or AMATHONTE, in *Ancient Geography*,

a town of the southern part of the island of Cyprus, near Lycus, between Curtum to the west and Citium to the east. It was founded by the Phœnicians, and owed its celebrity partly to the fertility of the adjacent country, and partly to the temple and worship of Venus in this place. Strangers, it is said, were sacrificed on her altars. The goddess was displeased, and punished the inhabitants by changing the men into bulls, and by despoiling the women of their modesty, so that they prostituted themselves without shame. Agreeably to this opinion, Ovid reports that the first courtisans appeared in this town. The statue of Venus in this place was that of an hermaphrodite. The statue was allegorical; and probably the men sacrificed to her in female habits, and the women in those of males. There was another temple in this place, as we are informed by Pausanias, consecrated to Venus and Adonis. Amathus was afterwards called Limassol; but it is now utterly destroyed.

AMATHUS was also a town of Peloponnesus, in Laconia, according to Strabo.—Also, a river of Peloponnesus, in Messenia, called *Pamifus*.—Also, a town of Palestine, beyond Jordan, north-east of Mount Abarim, ruined by Alexander Jannæus.

AMATHUSA, one of the epithets of the isle of Cyprus, and the inhabitants were called *Amathusii*, from Amathus above mentioned.

AMATI, ANTON and HIERONIMO, in *Biography*, two brothers, celebrated instrument makers in Cremona, flourished in 1662. Nicolo Amati, the son of Geronimo, was living in 1682. All these were such admirable fabricators of violins, as to render valuable every instrument that was supposed to come from Cremona. See STRADUARIUS and STEINER.

AMATILLAN, in *Geography*, a town of Mexico, in the province of Guatimala; 10 miles S. E. of Guatimala. N. lat. 14° 26'. W. long. 92° 26'.

AMATIQUES, a sea-port town, at the mouth of Guanacos river, which discharges itself into the Amatique gulf, or gulf of Honduras, in the province of Vera Paz, in Mexico. The inhabitants are chiefly logwood-cutters, and on the south of the gulf is a tract of land, called Amatique land. The gulf is formed by the peninsula of Cape Three Points, and that which lies between it and Dolce gulf, and between these it runs far into the land. N. lat. 15° 23'. W. long. 89°.

AMATISSA, AMESSÉ, in *Ancient Geography*, a small river of Gaul, which runs from the S. E. to the N. E. eastward of Ambacia, and discharges itself into the Loire.

AMATITUE, in *Geography*, a river of North America, in New Spain, which discharges itself into the Pacific Ocean, upon the confines of the province of Guaxaca.

AMATKINAK ISLAND is, with Ulak, the largest of the third group of islands between Asia and America.

AMATO, a town of Naples, in the province of Calabria Citra, on a river of the same name, 7 miles S. E. of Nicastro.

AMATO, or AMATHO, anciently LAMETUS, a river of Naples, which spreads itself over a large flat, in 50 different channels, and would overflow a great extent of country if its devastations were not restrained by high cliffs on each side of its bed. Its waters are of a muddy white colour. It discharges itself into the sea, three miles south of St. Eufemia, on the west coast of Calabria Ultra.

AMATORII, MUSCULI, in *Anatomy*, an appellation given to those muscles of the eye, which give them a cast sideways, and assist in that particular look, by some called ogling. When the abductor and humilis act together, they give to the eye this oblique motion.

AMATORIIUS, in *Ornithology*, a species of the PARUS genus, of a deep blue slate colour, with a longitudinal spot in

the middle of the wings, half rufous, half yellow.—It is the *mesinge amurensis* of Buffon, and *amorus tinazufi* (parus amoralis) of Latham. The length is five inches and a quarter, bill two thirds of an inch, black at the base, tip orange.

This bird inhabits the northern parts of Asia, and is remarkable for the affection each sex shows the other. When paired in cages its carrels are scarcely interrupted; a circumstance that has imposed the emphatic names of *amatorius*, *amarosus*, and *amorous* upon this species, to distinguish it from others of the parus genus.

AMATRICE, in *Geography*, a small town of Naples, in Abruzzo, with the title of a principality.

AMATTA DO BRASIL, a town of South America, in the country of Brasil, and government of Pernambuco.

AMATTA FOA, or TOOFOVAMA, OF KANIA, ISLAND, an island in the Southern Pacific Ocean, discovered by Captain Cook, in 1774, about 11 or 12 leagues distant from ANAMOOKA, N. N. W. $\frac{1}{2}$ west. It is about five leagues in circuit, considerably elevated, and probably has a volcano; it is inhabited, but not very fertile. Between this and another island, called Oghao, is a safe channel, about two miles broad, without any soundings.

AMAUROSIS, in *Surgery*, a privation or obscurity of sight, from *αμαυρος*, more commonly named GUTTA SERENA. This disorder is either complete, when total blindness exists, or incomplete, when vision is not perfectly destroyed. It is distinguished from the GLAUCOMA or CATARACT, in as much as the latter is a disease of the crystalline lens, whereas the former is generally seated in the optic nerve. *Amaurosis* may be produced by various causes, and admits of different modes of treatment; but the consideration of these particulars is referred to the article gutta serena. See ANBLYOPIA and DYSOPIA.

AMAXIA, in *Ancient Geography*, a town of Asia Minor, in Cilicia Trachæa or Cilicia Montana.

AMAXITUS, a borough of Asia Minor, in the Troas, and territory of the Alexandrians. In this place there was a temple of Apollo, in which the priest Chryses, mentioned by Homer, is supposed to have sacrificed.

AMAXOBII, a people who, according to Ptolemy, inhabited the interior parts of Scythia, in Europe. Their name, derived from *Αμαξία*, a chariot, refers to the practice which prevailed amongst these people and other Tartarian nations, of placing their tents on carriages for their more easy removal from one place to another. See HAMAXOBII.

AMAYA, in *Geography*, a town of Spain, at the foot of a rocky mountain, in the county of Leon, four leagues from Aquilar del Campo.

AMAZIAH, in *Scripture History*, the eighth king of Judah, was the son of Joash, and succeeded his father in his 25th year, A. M. 3165, B. C. 839. He adhered to the worship of the true God, but not without a mixture of idolatry; and therefore, he is said (2 Chron. xxv. 2.) to have done "that which was right in the sight of the Lord, but not with a perfect heart." We are further informed (Ch. xxv. 3, 4.) that, after his accession to the throne, he put to death the murderers of his father, and in conformity to the humane restriction of the Mosaic law, (Deut. xxiv. 16.) he preserved their children alive. With a large army, formed of his own subjects, and other hired troops from Israel, he marched against the Edomites, who had revolted from Judah, in the reign of Joram, about 54 years before; but having dismissed the Israelite auxiliaries, he led forth his own people to battle, and defeated the enemy in the valley of Salt, with great slaughter. The auxiliaries on their return ravaged the country, killed 3000 men, and carried off a great booty, as a compensation for the advantage which they expected to have derived from their expedition

against Edom. Amaziah, after his victory, took home the gods of the children of Seir, and paid them divine honours. Presuming on his success, and imagining himself to be invincible, he sent a hostile challenge to Joash, king of Israel, expressed by the words (2 Chron. xxv. 17.) "come, let us look one another in the face." Joash, by the fable of the cedar and thistle, endeavoured to dissuade him from his hostile purpose; but he persisted, and the adverse armies met at Bethshemesh, where that of Amaziah was routed, and he himself taken prisoner. Joash led the captive king with him to Jerusalem; and having made a breach in the wall, he entered the city, plundered the temple and royal palace, and then returned to Samaria. After this disastrous event, the reign of Amaziah was prolonged 15 or 16 years; but a conspiracy having been formed against him at Jerusalem, he fled to Lachish, where his enemies overtook and assassinated him, A. M. 3194, B. C. 810. 2 Kings, ch. xiv. 2 Chron. ch. xxv.

AMAZON, in a *General Sense*, denotes a bold, courageous woman, capable of daring and hardy achievements. See *AMAZONS infra*.

AMAZON, or the river of the AMAZONS, called also *Maragnon*, in *Geography*, a river of South America, is one of the largest rivers in the world. Its source is in Peru, in a lake near Guanuco, about 30 leagues from Lima, where the Maragnon rises, and at the head of the river Napo, near Quito; its first direction in Peru is from south to north; it afterwards runs a course from west to east, of about 3000 miles, across South America, and receives near 200 other rivers, many of which have a course of 5 or 600 leagues, and some of them not inferior to the Danube or the Nile. These rivers rush down with amazing impetuosity from the eastern declivity of the Andes, and uniting in a spacious plain, form this immense river. The chief of these, from the south and south-west, proceeding from the mouth westward, are Araguaya, Paratina, Madeira, Eurus, Yulay, Yulacina and Ucagai rivers. From the north and north-west, advancing from its mouth, are Parma, Negro, Yupura, Issa and Napo, which last rises near the town of Archidano, about 150 miles eastward of Quito. The Amazon is interspersed with a great number of islands, which are too often overflowed to admit of culture. It falls into the Atlantic Ocean, almost under the equator, by several channels, and its breadth at its mouth is 150 miles, and at the distance of 1500 miles from hence it is 30 or 40 fathoms deep. In the rainy season it overflows its banks, watering and fertilizing the adjacent country. M. de la Coudamine, who made a voyage down this river in 1743, found its descent in a straight course of about 1860 miles, to be about 1020 English feet, or 6 $\frac{1}{2}$ inches in a mile. The tides are perceptible at 600 miles from its mouth, but at an elevation only of 90 feet. Phil. Trans. vol. lxxi. p. 93. 109.

Besides Orellana, who made this voyage from motives of ambition, and de la Coudamine, who was prompted to it from a love of science, Madame Godin des Odonais, undertook it in 1769, from conjugal affection. The narrative of the hardships which she suffered, of the dangers to which she was exposed, and of the disasters which befel her, is one of the most singular and affecting stories in any language, and exhibits in her conduct a striking picture of the fortune which distinguishes the one sex, blended with the sensibility and tenderness peculiar to the other. Lettre de M. Godin à M. de la Coudamine.

AMAZONA, in *Ornithology*, a species of ALCEDO, first described by Dr. Latham, in his Syn. Av. Sup. p. 116, under the name of AMAZONIAN KINGFISHER. It inhabits Cayenne, and is about thirteen inches in length. The colour above is glossy green, beneath white, passing backwards in a ring

a ring to the nape; the sides are variegated with green: the wings and tail spotted with white. These particulars constitute the specific character: it may be further added, that the bill is three inches long, narrow, straight, and black; the under mandible yellow at the base; the thighs mottled with green, and the breast clouded with the same; tail feathers green, spotted on each side of the web with white, except the two middle feathers which are paler than the rest; legs black.

AMAZONA, a species of EMBERIZA, described by Linnaeus and Gmelin. The general colour is brown, crown of the head fulvous, vent whitish. It inhabits Surinam, and is about the size of the titmouse. The underside of the wings white at the base.—Buffon calls this L'Amazone, tom. iv. p. 364, and Latham gives it the English name of AMAZON'S BUNTING.

AMAZONE, in *Sculpture*, a very fine antique statue, in Parian marble. It was about two hundred years at the *Villa Mattei*, upon Mount Coelius, at Rome; from whence it was removed to the museum of the Vatican, by pope Clement XIV.; and is now in the gallery of antiques at Paris. There is also a beautiful statue of a queen of the Amazons at Wilton; represented in a warlike action; being on one knee; as under a horse, defending herself in battle. Her shield is in the form of a half moon; behind the lower part of which, the sculptor has executed a horse's foot; in order to illustrate the attitude. This statue was executed by the celebrated Cleomenes.

AMAZONIA, in *Geography*, a large country of South America, 1400 miles long, and 900 miles broad, is situated between the equator and 20° S. lat., and bounded on the north by Terra Firma and Guiana, on the east by the Atlantic Ocean and Brasil, on the south by Paraguay, and on the west by Peru. This country was first discovered by Francisco Orellana, about the year 1541, who, in a bark, manned with 50 soldiers, was borne down by the stream of the river Napo into the channel of the Maragnon; and who, after making frequent descents on both sides of the river, sometimes seizing by force of arms the provisions of the fierce savages, seated on its banks, and sometimes procuring a supply of food by a friendly intercourse with more gentle tribes, reached the ocean. This bold and magnanimous adventurer pretended to have discovered along the banks of this river, nations so rich, that the roofs of their temples were covered with plates of gold; and he described a republic of women so warlike and powerful, as to have extended their dominions over a considerable tract of the fertile plains which he had visited. From this community of warlike women, who, with arms in their hands, opposed his passage, he called the country Amazonia, or the land of the Amazons, and he gave the name of Amazon to the river, which had formerly been denominated Maragnon.

The Spaniards have made several attempts to plant this country, but always met with so many difficulties and disasters, as to render their designs abortive. The Portuguese have some small settlements on that part of the coast which lies betwixt Cape North and the mouth of the river Amazon; but these excepted, the natives are in the sole possession of the whole country. The air in this country is cooler than might be expected, considering its situation in the middle of the torrid zone; which is owing partly to the heavy rains, which cause the inundations of the rivers for one half of the year, and partly to the cloudiness of the weather, so that the sun is obscured, during the greatest part of his stay above the horizon. The fair season is about the time of the

solstices, and the wet or rainy season is about the equinoxes. The soil of Amazonia is very fertile, and produces corn, grain, and all kinds of tropical fruits; besides a variety of timber, as cedar, brasil-wood, oak, ebony, iron-wood, log-wood, and other dying woods; and also cocoa, tobacco, sugar canes, cotton, cassava root, potatoes, yams, sarsaparilla, gums, raisins, balsams of various sorts, pine apples, guavas, bananas, &c. The forests abound with wild honey, and also with tigers, wild boars, buffaloes, deer, parrots, and game of various kinds. The rivers and lakes afford an ample supply of fish, sea-cows, and turtles; but the alligators and water-serpents render fishing a dangerous employment. The trees, fields, and plants, are verdant throughout the year. The natives are of good stature, with agreeable features, long black hair and a copper-coloured complexion, and are very different from the natives of Africa, in the same latitude, on the opposite side of the Atlantic. Condamine says, that they have a taste for the imitative arts, especially sculpture and painting, and that they frequently excel in mechanical professions. They spin and weave cotton cloth. Their houses are built with wood and clay, and thatched with reeds. Their arms, in general, are darts and javelins, bows and arrows, with targets of cane or fish skins. The several nations, on both sides of the river Amazon, which are very numerous, are governed by chiefs or caziques; for it is observable, that the monarchical form of government has prevailed almost universally, in both ancient and modern times, in a rude and unrefined state of society. The regalia, by which the chiefs are distinguished, are a crown of parrot's feathers, a chain of tiger's teeth or claws, which hang round the waist, and a wooden sword. They are all idolaters, and worship the images of their ancient heroes; and in their various expeditions they carry their gods along with them.

As to the Amazonian race, if it ever existed otherwise than in the imagination of the original adventurer Orellana, or in the exaggerated reports of travellers and voyagers, it is now wholly extinct; and probably the notion was at first suggested by the activity and courage which the females of this country exerted, in the defence of their privileges, against the encroachment of foreigners.

AMAZONS, in *Geography and History*, denote an ancient nation of warlike women, who founded an empire in Asia Minor, upon the river Thermodon, along the coasts of the Black Sea; and who are said to have formed a state out of which men were excluded. What commerce they had with that sex, was only with strangers, whom, after occasional intercourse at stated times, they put to death; hence, as Herodotus informs us, they have been called *Æorpata*, or murderers of their husbands. They also killed all their male children, or, as some authors say, broke their legs, or dis-jointed their knees, and thus rendered them incurably lame, by luxations, as Diodorus Siculus, Hippocrates, and Galen assert, that they might be the more easily reduced to a state of dependence and slavery. Moreover, they nursed their females, and trained them up to war; and that they might use their arms more readily, and be more fit for the combat, they cut off, or seared with a plate of hot brass, their right breasts, apprehending that there would be otherwise some impediment in the use of the bow. Hippocrates and Galen allow that this fact was reported; but they allege, that this operation was performed, not on account of any impediment in the use of the bow, but to render the right arms stronger by an addition of aliment, as that which would have gone to the breast would be thus restricted to the arm. In reference to the excision of their breasts, Penthesilea, one

of their queens, is represented by Virgil, *Æn.* lib. i. v. 492.

“*Aurea subnectens exsertæ cingula mamma.*”

From this last circumstance it is, that they are supposed to take their name, *viz.* from the privative α and $\mu\alpha\mu\alpha$, *mamma, breast.*

Others have suggested, that the amputation performed on the breasts of the females was invented by the Greek etymologists, in order to explain the name of the nation. Others again have conjectured, that the name was derived from the Circassian word *maza*, the *moon*, which is said to have been a favourite deity among the mountaineers of Caucasus, in the vicinity of which the Amazons were settled. Dr. Bryant (*ubi infra*) traces the etymology of the appellation to $\alpha\omega\eta$, the *sun*, which was the national object of worship. Some have maintained, that the description of the Amazons, given by the ancient writers, is purely allegorical; the amputation of one of the breasts signifying, that the female only was nourished by the mothers; and the killing of the boys denoting, that they were committed to the care of strangers.

It is, however, a point that has been controverted, even among the ancient writers, as well as the moderns, whether such a nation as the Amazons are described to be, have ever existed. Strabo, Ptolemy, and others, absolutely deny it; whilst, on the contrary, Herodotus, Pausanias, Diodorus Siculus, Trojus Pompeius, Justin, Pliny, Mela, Plutarch, &c. expressly assert it.

Herodotus, in his history of the Scythians (lib. iv. c. 110. p. 330—332. ed. Weffeling.), informs us, that the Greeks, who had obtained a signal victory over the Amazons, near the river Thermodon, were carrying off the residue that had escaped the slaughter in ships into their own country. While they were at sea the Amazons conspired against them, and killed all the men whom they had on board; but being unacquainted with the art of navigation, even with the use of the rudder, sails, and oars, they were driven by the wind and tide to the precipices of the Palus Mæotis, in the territories of the free Scythians. Here they went ashore, and marching up into the country, they seized the first horses they found, and began to plunder the inhabitants. The Scythians unacquainted with their language, sex, and dress, took them at first to be youths; but after a skirmish or two, in which some of them were taken prisoners, they found that they were women. Accordingly all hostilities ceased, and they formed connections with them as their wives. But when the Scythians invited these women to accompany them to their own country, they declined accepting the invitation; alleging, that they had been always used to draw the bow, dart a javelin, mount a horse, and such warlike exercises, to which they supposed the Scythian women were altogether unaccustomed, and that they could not consent to exchange their military mode of living for a life of ease and indolence. They therefore exhorted their husbands, if they still retained the same conjugal affection for them, to visit their parents and friends, and to return with the several portions assigned them. They complied with the advice; and upon their return, were informed by their wives, that since they had deprived them of their parents, and committed several depredations in that country, they thought it much safer to fix their habitation on the other side of the Tanais. This scheme was approved and executed. After three days march to the east of that river, and three more northward from the lake Mæotis, they arrived and settled in the country of Sarmatia, where they continued, says Herodotus, to his time. Hence, continues

the historian, the wives of the Sarmatians pursue their ancient mode of life, hunting on horseback either alone, or in the company of their husbands, marching with their armies, and wearing the same dress with the men. The Sarmatians used the Scythian language, corrupted by the Amazons, who had never learned to speak it correctly. Their marriages were attended with this peculiar circumstance, that no virgin was allowed to marry till she had killed an enemy in the field, and therefore some of them were old before they married, according to the requisition of the law.

From Diodorus Siculus (lib. ii. c. 47. p. 156—158. ed. Weffeling.), we learn, that there was formerly a nation who dwelt near the river Thermodon, in which women governed and conducted all their military expeditions. Among these, one excelled all the rest in strength and valour. By her an army was assembled, and trained up in military discipline, to as to subdue some of the neighbouring nations. Her fame increasing with her success, she styled herself the daughter of Mars, and ordered the men to spin wool, and to perform the domestic services of the women. She promulgated laws, which required the women to engage in warlike exercises, and the men to remain at home in an abject condition, and to be employed in the most servile offices. The male children that were born were debilitated in their legs and arms, so as to be unfit for war; and the females had their right breasts seared, so that they might be no impediment to them in fighting; and hence, says the historian, this nation obtained the name of Amazons. The queen, distinguished by her military skill, built at the mouth of the Thermodon a large city, called Themiscyra, and adorned it with a famous palace. In her warlike expeditions she maintained strict discipline and order; and thus reduced to subjection all the neighbouring nations, as far as the river Tanais. Having finished these exploits, she closed her life in the field like a hero, and fell in a battle, in which she had displayed singular courage. She was succeeded by her daughter, who excelled the valour of her mother, and in some respects surpassed her. She caused the young women to be inured to hunting in early life, and also to military exercises. She instituted feasts and sacrifices to Mars and Diana, which were denominated Tauropoli, carried her arms beyond the Tanais, and subdued the people of all those countries as far as Thrace. Upon her return with rich spoils, she caused temples to be erected to the above-mentioned deities, and gained the love of her subjects by her mild and gentle government. She afterwards reduced a great part of Asia, and extended her conquests as far as Syria. The succeeding queens of the same race acquired renown by their government, and greatly enlarged the dominion of the Amazonian nation. The fame of the Amazons continued for several ages, till at length Hippolyta was vanquished and captured by Hercules, the son of Jupiter and Almena; and by degrees the Amazonian name became totally extinct. The last queen of the Amazons was Penthesilea, who assisted the Trojans, after the death of Hector, and was slain by Achilles. So signal and extraordinary were the character and exploits of this queen, and others of the Amazonians, that Diodorus acknowledges, that in later ages, the relations of them have been regarded as fabulous.

Diodorus elsewhere (*viz.* lib. iii. p. 220.) mentions another race of Amazons, much more ancient than those of Pontus, in the vicinity of Thermodon. These inhabited the western parts of Libya; they were under the government of women; and as long as they continued single, they performed the duty of soldiers in the field; and after a stipulated period they associated with the men, and bore children;

but the magistracy and all public offices were retained by the females, and the men were employed in domestic offices, and were altogether subject to their wives, who would not allow them any participation of authority in the state, or any concern in military affairs. Their females had their breasts seared, that they might not be any hindrance to them as they grew up, and engaged in martial exercises. One of the principal queens of this nation was Myrina, who is supposed to have lived in the time of Orus, the son of Isis, and to have conquered Africa and the greater part of Asia, but was at last slain in Thrace.

Justin (ex Trög. lib. ii. cap. 4.) traces the origin of the Amazonian republic in Scythia. About the time of the first irruptions of the Scythians into Asia, in the reign of Sesostris, king of Egypt, two princes of the royal blood, named Hylinos and Scolopytus, were compelled by an adverse faction to retire into Cappadocia with their wives and families. By the assistance of the youths they brought with them, they obtained possession of Thermoscira, on the river Thermodon, whence they made incursions into the adjacent nations for several years, till at last they were all treacherously murdered. Their wives, partly from revenge and partly from a dread of slavery, put themselves under the conduct of some of their chief heroines, and prepared for a bloody war with the murderers. In order to give full scope to their fury, they renounced all future marriages, and destroyed those of their husbands, who had escaped the slaughter; and then proceeded with such vigour and such success against their enemies, as totally to overthrow them, and to compel them to sue for peace. One of their stipulations was, that they should yearly have a month's intercourse with each other, for the propagation of their species; after which they brought up all their girls in their own way, deprived them of their right breasts, that they might be no obstruction to them in drawing their bow; and as for the boys, they either killed them, as Justin says, or disabled them for martial exercise, or sent them to their fathers, according to Herodotus and others. These surprizing exploits were achieved under the government and conduct of two queens, Lampeto and Marphesia, who pretended to be the daughters of Mars; and who, having extended their conquests into Asia, built cities there. The former of these females was left behind, with an army to secure their conquest, and the latter, on her return home, with her spoils, was surprized and cut off, with the rest of her female warriors, by some bands of barbarians. After a succession of female queens, Penthesilea is said to have come to Troy for the assistance of Priamus, as we have already mentioned. This queen, it is added, was the inventress of the battle-axe, and was killed by Pyrihus, the son of Achilles. Another of their queens, named Tomyris, had a bloody encounter with Cyrus, king of Persia; and the famous queen Thalestris had an amorous intercourse with Alexander the Great. Under this last queen it is said, that the Amazonian kingdom and race were ultimately destroyed.

Quintus Curtius (De Rebus Gestis, A. M. lib. vi. c. 5. tom. i. p. 400. ed. Snakenburg.) has given a particular account of this intercourse between Thalestris and Alexander. He says, that the nation of the Amazons were situated upon the borders of Hyrcania, and that they inhabited the plains of Themiscyra, near the river Thermodon. Thalestris, their queen, who governed the whole country between Mount Caucasus and the river Phasis, being desirous of seeing Alexander, sent messengers to request an interview with him. Having obtained permission to visit him, she advanced with 300 of her female warriors; and when she approached his

presence, she leaped from her horse, with two javelins in her right hand. The apparel of the Amazons, says Curtius, does not cover the whole body; but the left side is naked to the breast, and the skirts of their garments, which are tied up in a knot, reach below the knees. Their left breast is preserved, that they may suckle their female offspring; but the right breast is seared, that they may the more easily bend the bow, and shoot their arrows. Thalestris, after observing Alexander for some time with an undaunted countenance, was disappointed, as his personal appearance did not correspond to the ideas she had previously formed of him, from the report of his signal exploits. When the king asked her, whether she had any thing to desire of him, Thalestris without hesitation replied, that she wished to have children by him, and that she was worthy of the honour of giving heirs to his dominions. The female she would reserve for herself, and the male should be delivered to him. When Alexander interrogated her, whether she would accompany him in his wars, she declined, alleging, that she had left her kingdom without a guardian. Alexander, after renewed solicitations on her part, and a delay of 13 days, complied with her wishes; and Thalestris returned to her kingdom.

Plutarch, in his life of Pompey, (Oper. tom. i. p. 678.) says, that the Amazons inhabit those parts of Mount Caucasus, that lie towards the Hyrcanian sea, that they are separated from the Albanians by the Getulæ and Leges, and that they annually, for two months, accompany these people, and cohabit with them near the river Thermodon. They then retire to their own habitations, and live apart for the rest of the year. In his life of Theseus, (Oper. tom. i. p. 13.) Plutarch, after reciting some particulars relating to the history of the Amazons, acknowledges, that the accounts of them which had been preserved were partly fabulous and partly true. The arms of the Amazons were bows and arrows, javelins, and a kind of battle-axes, denominated the axe of the Amazons, the invention of which is ascribed by the elder Pliny to their queen, Penthesilea. On medals, the bust of the Amazons is usually armed with a small two-edged axe, called *bipennis* or *securis*, borne on the shoulder; and a buckler, in the form of a half moon, by the Latins called *pelta*, on the left arm. Hence Ovid's description. Ex Pont.

“ Non tibia Amazonia est pro me sumenda securis,
Aut excisa lævi pelta gerenda manu.”

And Virgil, speaking of the queen Penthesilea in *Æneid*: lib. i. v. 490, says,

“ Ducit Amazonidum lunatis agmina peltis.”

Beside the Amazons of Africa, which formed the most considerable body of these female warriors, and those of Mount Caucasus, near Colchis and Albania, and likewise near the Palus Mæotis, of whom we have already given an account, Polyænus speaks of Amazons in India, who are also mentioned by Nonnus. They likewise occur in *Æthiopia*. They at one time, says Dr. Bryant, possessed all Ionia; and there were traditions of their being at Samos, and in Italy, where they had a town in Messapia, towards the lower part of the country, called Amazonia. Even the Athenians and Bœotians were of the same family; hence it is said, that Cadmus had an Amazonian wife, when he went to Thebes, and that her name was Sphinx. The Colehians and Iberians, as well as the Cimmerians and Mæotæ, according to this learned writer, were Amazonians; and so were all the Ionians, and the Atlantians of Mauritania. Philostratus,

in his *Heroicis*, mentions Amazonians on the Danube, and in Lucius Florus we read of German Amazons.

Among the ancient writers, who consider the peculiar history of the Amazons as fabulous, we have already mentioned Palæphatus, who was complimented for his distinguished understanding, by the appellation “ὁ τὸ πᾶσι λόγος;” and who gave it no credit. Strabo also, although born at Amalthis, in Cappadocia, an Amazonian region, could obtain no evidence to countenance the history. He says, (lib. ii. tom. ii. p. 770.) that many legendary stories have a mixture of truth, and most accounts admit of some variation. But the history of the Amazons has been uniformly the same; the whole a monstrous and absurd detail, without the least appearance of probability. For who can be persuaded, that a community of women, either as an army, or a city, or a state, could subsist without men? and not only subsist, but make expeditions into other countries, and gain the sovereignty over kingdoms; not merely over the Ionians and those who were in their neighbourhood, but pass the seas and carry their arms into Europe; to accede to this were to suppose, that nature varied from her fixed principles; and that in those days women were men, and men women. It may be added, that if such a people really existed, some traces of them would have been found, either in Iberia and Albania; or in the country upon the Thermodon, where they are supposed chiefly to have resided. But Procopius (*De Bell. Gothic. lib. iv. c. 3. p. 570.*) says, that there was no mark, no tradition to be observed concerning them.

Amongst the moderns, who have maintained the existence of Amazons in ancient times, we may mention M. Petit, a French physician, who published a Latin dissertation, in 1685, in order to establish the fact. This dissertation contains abundance of curious inquiries, relating to their habit, their arms, the cities built by them, &c. Dr. Bryant (*Analysis of Ancient Mythology, vol. iii. p. 457, &c.*) explodes the account of the existence of such a nation as fabulous; and he says, that the whole of this strange history has been owing to a wrong etymology of the appellation Amazon. The Greeks, who were fond of deducing every thing from their own language, imagined, that by the term Amazon was signified a person without a breast. This person they inferred to be a female; and, in consequence of it, as the Amazons were a powerful people, they formed a notion, that they were a community of women, who subsisted by themselves; and every absurdity, with which this history is attended, took its rise from the above-stated misconception. They did not consider, that there were many nations of the Amazons widely separated from each other; nor did they know, that they themselves were of Amazonian race. Dr. Bryant is of opinion, that the Amazons were in general Cuthite colonies from Egypt and Syria; and as they worshipped the sun, they were called Azones, Amazones, and Alazones, which are names of the same import and bear reference to the national object of worship. To this purpose Pausanias (lib. iii. p. 274.) mentions Apollo Amazonius, who was worshipped in Laconia. The most noted of them inhabited the region of Pontus, near the river Thermodon; and they were also called Chalybes, and Alybes, and occupied part both of Cappadocia and Armenia, being situated near Sinope, and extending towards Colchis. They are mentioned by Homer (*Iliad. lib. v. v. 856.*) among the allies of the Trojans. One of the principal cities of these Chalybes, besides Sinope, was Amisoa, or as Pliny expresses it more justly (lib. vi. p. 303.) Amazon, and he mentions a mountain near it of the same name. These people had different titles in the countries where they settled, and often in the same

region; and therefore their history has been confused. They were called not only Amazonians, but Syri, Assyrii, Chaldei, Mauri and Chalybes, and were still further diversified. They were the same as the Ionim, and in consequence of it, they are said to have founded the chief and most ancient cities in Ionia, and its neighbourhood. Accordingly the coin of the cities in Asia Minor, and particularly of those in Phrygia, Ionia, and Mylia, has often an Amazon for its device. The Amazons, according to the learned writer now cited, were Arkites, and one of their chief cities was called Archæopolis, who came from Egypt, and worshipped the sun, and Selene, the chief deities of the country, from whence they came. They are stiled by Herodotus *Æor-pata*, not as he conceives from killing their husbands, because, according to their history, they had not any, but from their worship; and this name was given to their priests. It signifies a priest of Ὀρος or Orus; and these priests used to sacrifice strangers, who accidentally came upon their coast, and hence they were stiled, “*Ἀνδροκτονίαι,*” murderers. The Egyptians, it is alleged, admitted the sistrum among their military instruments of music, and made use of it when they went to war. The same practice prevailed among the Amazonians, who worshipped the Isis of Egypt, and made use of her sistrum, when they engaged in battle. The Amazonians of Colchis and Armenia were not far removed from the Minyæ, near Mount Ararat, and were of the same family. They were Arkites, as we may learn from the people of Pontic Theba, and followed the rites of the ark, under the name of Meen, Baris, and Iona. Hence it is, that they have been represented with lunar shields; not that they were of a lunar shape, but the lunette was a device taken from their worship. It was the national ensign, which was painted upon their shields; whence it is said of them, “*πίστις bellantur Amazones armis.*” The Amazonian shield approached nearly to the shape of a leaf, as did also the shields of the Gothic nations; and upon these shields they had more lunettes than one; and from them the custom was transmitted to the Turks and other Tartar nations. One of the most extraordinary circumstances in the history of the Amazons is their invasion of Attica. They are represented as women, who came from the river Thermodon, in revenge for the insult offered them by Hercules, who had plundered their country. Their attack is described as violent; and the conflict for a long time doubtful. At last, having lost many of their companions, they were obliged to retreat and entirely to leave the country. Of this invasion the Athenians pretended to have had many evidences; they exhibited the tombs of the Amazons, who fell in the contest; the place of engagement was called Amazonium; and near it was an ancient pillar, said to be erected by this people. But the history abounds with inconsistencies, though Plutarch (*ubi supra*) seems to credit it, and adduces several circumstances, with a view of establishing its certainty. Such a people, however, as the Amazonians, had certainly been in Attica; the Athenians, as well as the Bœotians, were in a great measure defended from them. The rites to which Plutarch refers, in proof of hostility between the Amazonians and Athenians, afford no conclusive argument to this purpose; because they consisted originally in offerings made to the deity, from whom the Amazons derived their name. He was called Azon, and Amazon, and was the same as Ares, the sun. They worshipped both Ares and Harmon, changed by the Greeks to a feminine Harmonia; and in consequence of this worship, the Amazons were said to be the offspring of those deities. Hence it is, that the wife of Cadmus was said to be Harmonia; for the Cadmians were undoubtedly

undoubtedly Amazonians. What became of these female warriors after their repulse from Attica, the Grecians have not historically ascertained. Some say that they retreated into Magna Græcia, and founded the city Clœite. Isocrates (in Panegy. p. 93.) acknowledges, that none of them returned into their own country; and Lyfias (Funeb. Orat.) says, that their nation was wholly ruined by this expedition, that they lost their territories, and that they were no more heard of. Upon which Plutarch (*ubi supra*) observes, that we must not wonder, when transactions are of such antiquity, if history should prove contradictory and obscure.

The Amazons are said to have always fought on horseback, (Aristoph. *Lysistrata*, v. 680.); and yet the use of cavalry was not known in Greece, till long after this æra; for, according to Homer, the Asiatic nations at the siege of Troy were equally unacquainted with this advantage. As for the tombs, which have been adduced as evidence of this invasion, they were probably high altars, raised in ancient days. The whole of this history relates to old rites and customs; and not to any warlike expedition. The pillar, called Amazonium, indicates, that the Amazons might have been once in this country, and that they probably erected it; but this was the object to which they paid their adoration, as they lived in an age, when statues were not known. Such a one the Argonauts are said to have found in the temple of Arez, when they landed upon the coast of Pontus, and made their offerings to the deity, thus described by Apollonius, (*Argonaut. lib. ii. v. 1174.*) according to the English translation of the original—

“ Now to the grove of Arez they repair,
And while the victims bleed, they take their stand
Around the glowing altar, full in front
Of a fair temple. Here of ebon hue
Rises in air a lofty antique stone.
Before it all of Amazonian name
Bow low, and make their vows.”

That these supposed tombs were altars, is also inferred from their situation in the middle of the city, and in many different places. Every circumstance of this invasion is attended, says our author, with some absurdity. It is owing, we are told, to the injustice of Hercules, who stole the girdle of Hippolyte, and attacked the nation, of which she was queen, so as quite to ruin it. The Amazons, thus defeated and weakened, and not able to withstand their next neighbours (see *Diod. Sic. lib. iv. p. 229. tom. i. p. 262.*) determined to wage war with the Greeks, and particularly with Theseus of Athens. They began their march, but instead of proceeding directly to Greece, they pursued a contrary route, passing north-east in order to arrive at the south-west, and ranging round the whole Euxine sea, by Mount Caucasus and Colchis, to the Cimmerian Bosphorus, and traversing many hills and rivers, they at last arrived at Athens, pitched their camp in the precincts of the city, close to the Acropolis, fought a severe battle, retired, and not being able to return home, were dispersed and annihilated. And yet so far is this female history from terminating, the Amazons are introduced again by the poets, Homer, Virgil, &c. at the siege of Troy, and are to be met with in the wars of Cyrus. Some ages after, in the time of Alexander, an interview is said to have passed, as we have already related, in which the queen of the Amazons makes proposals to that monarch about sharing, for a night or two, his bed. And even in the time of Pompey the Great, during the Mithridatic war, they are supposed to exist; for

after a victory gained by that general, the Roman soldiers are said to have found many boots and buskins, which Dion Cassius (in *Bell. Mithrid.*) thinks were undoubtedly Amazonian. Such, says Bryant, after a long and learned detail of various particulars, of which the above is merely a concise abstract, was the credulity of the ancients about one of the most improbable stories that was ever feigned: and this learned writer concludes upon the whole, “ that the Amazonians were a manifold people, and denominated from their worship. They were some of the Titanic race, who settled in Colchis, Ionia, Hellas, and upon the Atlantic in Mauritania; they were also to be found in other parts, and their family characteristic may in all places be seen. They were the same as the Cadmians; and the structures which bore their names were not erected to them, but were the work of their own hands.” Eumolpus, says Plato (*Menæxenus, vol. ii. p. 239.*), led the Amazons, when they invaded Attica; and he is supposed to have been the principal person who introduced the rites and mysteries, which were observed by the Athenians. His sons were the priests, who officiated at the temple of Ceres in Eleusis. From all circumstances it is concluded, “ that what has been represented as a warlike expedition, was merely the settling of a colony, and those who had the conduct of it were Amazonians, who had been represented as women. And so far is probable, that there were women among them, who officiated at the religious ceremonies which were instituted.” — Among barbarous nations women have often combated by the side of their husbands; but it is almost impossible, says Mr. Gibbon, (*Hist. vol. xi. p. 46.*) that a society of Amazons should ever have subsisted either in the old or new world.

Later geographers and travellers speak of Mingrelian and Georgian Amazons; Amazons in America, in Monomotapa, in the Philippine islands, in Denmark, &c. John de los Sanctos, a Portuguese capuchin, in his description of Ethiopia, mentions a race of Amazons in Africa; and Æneas Sylvius gives us a very precise account of a republic of real Amazons in Bohemia, which lasted nine years, founded by the valour of a young woman, named Valasca. That there have been females of singular talents and very extraordinary firmness and resolution, in all ages and in all nations, no one can dispute; and if we compare the warlike genius of the Scythian women in general, and more particularly that of the Sarmatians, in whose neighbourhood the Amazons are said to have lived, with the occasion which is reported to have given birth to their strange kind of government, namely, the treacherous murder of their husbands, and their being in danger of becoming a prey to their murderers, and in a strange country; we may incline to give some credit to the brave and masculine method which they took to save themselves from slavery, and to revenge the slaughter of their husbands. The Scythian, as well as the Celtic women, were anciently held in great esteem and veneration, for their skill in divination above the men, insomuch that the latter are upbraided by ancient authors for suffering women to assist at and direct their councils and to have even presided in their courts of judicature, and other assemblies; in which their judgment was reckoned decisive, because they were supposed to be divinely inspired. Being, therefore, inured to council, execution, and warlike exploits, exasperated by the barbarous brutality of their husbands, and rendered, as it were, desperate by the prospect of impending slavery, we need not wonder, that they should adopt effectual means of inflicting vengeance, and of defending themselves; and, with this view, that they should

should select one or two of the strongest and most valiant to lead them in an offensive war against their enemies, and that they should carry it on with courage and constancy, and of course with such astonishing success. And if their warlike temper, their government, customs, valour, conduct, and achievements, have been exaggerated beyond credibility, it may be alleged, that this has been done with respect to other nations, governments, and conquerors, which have attracted unusual attention, and which it would be absurd to reject as altogether fabulous on that account. The same allowance should be made in both cases: and this is much more reasonable than to suppose that the various historians who have given an account of them, have been guilty of forgery or of too great credulity.

The true history of the ancient, and even of the modern Amazons, has, without doubt, been blended with much fable, with many marvellous and improbable, not to say altogether incredible relations; but the testimony upon which it is transmitted to us deserves regard, and it would manifest a degree of scepticism, which, applied to other cases, would be not only unwarrantable, but dangerous and pernicious, altogether to discard it. The empire of the Amazons was certainly of a different kind from that which properly belongs to the female sex. "The empire of the woman," says Rousseau, "is an empire of softness, of address, of complacency. Her commands are caresses; her menaces are tears." "The character of the ancient Amazons," says Dr. Johnson, "was rather terrible than lovely. The hand could not be very delicate: that was only employed in drawing the bow, and brandishing the battle-ax. Their power was maintained by cruelty; their courage was deformed by ferocity; and their example only shews, that men and women live best together."

AMAZON is applied, in a figurative sense, to bees, because among these insects the females alone are commonly supposed to bear sway.

Aristotle, treating of the breeding of bees, professes himself ignorant of their sex; and therefore, willing to keep up the prerogative of the males, calls their governor βασιλεύς, *rex*, in which he has been followed by the generality of authors.

An ingenious writer of our own country, takes the liberty to strain the ordinary signification of the word *rex*, and in such places translates it *queen*, this being an *Amazonian*, or female kingdom.

Mr. Warder has published a work under the title of the True Amazons, or the Commonwealth of BEES.

AMAZONIAN, something relating to, or resembling AMAZONS.

AMAZONIAN kingdom, is particularly used for a feminine one, or that wherein the females alone bear rule.

AMAZONIAN habit, in *Antiquity*, denotes a dress formed in imitation of the Amazons.

Marcia, the famous concubine of the emperor Commodus, had the appellation Amazonian, because she charmed him most in a habit of this kind.—Hence also that prince himself engaged in combat, or at least intended to engage, in the amphitheatre, in an Amazonian habit; and of all titles the Amazonian was one of those he most delighted in. In honour either of the gallant, or his mistress, the month of January was also denominated Amazonian. Some also apply Amazonian habit to the hunting dress worn by many ladies among us.

AMAZONIUS is an appellation given to a kind of pastil, or *troche*, anciently used against risings of the stomach, and vomitings.—The ingredients of which it is com-

posed, are smallage, anise-seed, wormwood, myrrh, pepper, *cyborum*, *opium*, and cinnamon.

AMAZONUS, in *Entomology*, a small species of SCARABÆUS, found in Surinam. It is testaceous, with two black marks on the thorax, and a brown callus on the exterior margin of the wing-cases. Linn. Syst. Nat.

AMBA, in *Botany*, a name by which some authors have called the *magna Indica*, or MANGO-tree, called also *ambalam*, and *ambe*.

AMBACHT, in *Topography*, denotes a kind of jurisdiction, or territory, the possessor whereof has the administration of justice, both in *alto* and *basso*; or of what is called in the Scots law a power of pit and gallows, *i. e.* a power of drowning and hanging.

In some ancient writers *ambacht* is particularly used for the jurisdiction, government, or chief magistracy of a city. The word is very ancient, though used originally in a sense somewhat different. Fennius calls a mercenary, or slave hired for money, *ambactus*; and Cæsar (*De Bell. Gallic. vi. 14.*) gives the same appellation to a kind of dependents among the Gauls, who, without being slaves, were attached to the service of great lords.

AMBAGES, in *Rhetoric*. See CIRCUMLOCUTION.

AMBAIBA, the name of a tree in Brasil, called by the Indians, *tipioca*. Ray's Hist. Plant. See CERKOPIA.

AMBATINGA, the name of a tree, whose leaves are so rough that they may be used to polish hard wood. Ray's Hist. Plant.

AMBAPAYA. See CARICA.

AMBAR seed, in the *Materia Medica*, a name by which some have called musk seed.

AMBARES, in *Geography*, a town of France, in the department of the Gironde, and chief place of a canton, in the district of Bourdeaux, five miles north-east of Bourdeaux.

AMBARVALIA, in *Antiquity*, a feast, or ceremony, among the Romans, celebrated annually, in honour of the goddess Ceres, in order to procure a happy harvest.

At these feasts, they sacrificed a bull, a sow, and a sheep; which, before the sacrifice, were led in procession thrice around the fields; whence the feast is supposed to have taken its name: from the Greek *αμβι*, *about*: or the Latin *ambio*, *I go round*; and *arvum*, *field*.—Though others write it *ambarbalia*, and *ambarbia*, and deduce it from *ambire urbem*, *to go round the city*.

From the beasts offered in sacrifice, the ceremony was also called SUOVETAURILIA.

Some will have the *ambarvalia* to have been held twice a year: the first time towards the end of January, or, as others think, in April; and the second time in July, or as Rosinus imagines, in August; at the time when the harvest was ripe, *maturis frugibus*. Which opinion is the more probable, in that Ovid, who, in his *Fasts*, describes the feasts of the first six months of the year, from January to June inclusive, says nothing of the *ambarvalia*.

The sacrifice offered on this occasion was hence called *ambarvale sacrum*, and *hostia ambarvalis*.

The *ambarvalia* were of two kinds, *public* and *private*.

The *private* were those solemnized by the masters of families, accompanied with their children and servants, in the villages and farms out of Rome.—They walked three times round the grounds, every one being crowned with leaves of oak, and singing hymns in honour of Ceres. After the procession, they went to sacrifice.

The,

The *ambrosale carmen* was a prayer preferred on this occasion; whereof we have the *formula* preserved in Cato. "De re rustica." c. 142.

The *public ambervalia* were those celebrated in the boundaries of the city; and in which the twelve *fratres aruales* officiated pontifically, walking at the head of a procession of the citizens, who had lands and vineyards at Rome.

The prayer, or *formula*, here used, as it is given by Festus, in voc. "pefallas," was *avertas morbum, mortem, tabem, nebulam, impetiginem, pestiflatum*. Virgil has described the ambervalia in the first book of his *Georgics*, v. 343, &c.

Some make a quinquennial as well as an annual ambervalia, the one performed once every *lustrum*, the other once a year.

The priests who chiefly officiated at this solemnity, were called *fratres ARVALES*.

AMBERVALIS *flos*, in *Botany*, a name given, by some authors, to the *polygala*, or milkwort.

AMBASSADOR. See EMBASSADOR.

AMBAZAC, in *Geography*, a town of France, in the department of the Upper Vienne, and chief place of a canton, in the district of Limoges, 10 miles north-east of Limoges. The place contains 2783, and the canton 7342, inhabitants; the territory includes 202½ kilometres, and 7 communes.

AMBE, in *Anatomy*, a superficial jetting out of a bone.

AMBE, or AMBI, in *Surgery*, an instrument employed for the reduction of a dislocated shoulder, especially when the head of the os brachii rests in the axilla. Various improvements have been made in the construction of the ambi since Hippocrates's time; but its use is rarely wanted, as a dexterous surgeon can generally replace the shoulder bone by more simple means. See DISLOCATIONS.

AMBEEZES, AMBOISES, or AMBOZES, in *Geography*, an island of Africa, in the Atlantic Ocean, near the coast of Benin. N. lat. 4° 15'. E. long. 10° 50'.

AMBEL, in *Botany*. See NYMPHÆA.

AMBELANIA. See WILLUGHBEIA.

AMBER, *ἤλεκτρον*, Gr.—*Electrum, succinum*, Lat.—*Succin, carabé, ambre jaune*, Fr.—*Bernstein, agtstein, glas Firnstein, wasch-amber*, Ger.—*Gleffum*, ancient German, according to Pliny.—*Bärnsten, ras, glys*, Swed.—*Bernsteen*, Dan.—*Succino, ambra gialla*, Ital.—*Enyokó, Hung.*—*Jantar*, Russ.—*Sacal*, Egypt.—*Bitumen succinum*, Werner.

The colour of amber is generally some shade of yellow, as wine yellow, wax yellow, honey yellow, hyacinth red, yellowish white; it is also found occasionally green or brown. It occurs amorphous, and in detached pieces. Is shining, or little shining, with a waxen lustre. Its fracture is conchoidal, and when broken it flies into indeterminate not particularly sharp fragments. It is commonly transparent, more rarely semitransparent or translucent. Is brittle, and its sp. grav. varies from 1.065 to 1.1.

By rubbing, it readily becomes electric. When applied to a lighted candle it takes fire, swells considerably, but does not run into drops, and exhales a white smoke of a pungent penetrating odour.

It is sometimes confounded with COPAL and HONEYSTONE, but may be distinguished from each without much difficulty. Copal is softer than amber, and when inflamed melts into drops. Honey-stone is much weaker in its electrical properties, and when laid on a hot coal becomes white.

The only proper mines of this substance that are as yet known, are in ducal Prussia, near the sea coast. They are worked in the usual way by shafts and galleries to the depth of about a hundred feet. The amber is imbedded

in a stratum of fossil or carbonated wood, and occurs in nodules from a few grains in weight, to three or even five pounds: specimens also are occasionally met with consisting of the wood penetrated by veins of amber. The upper and under strata are sand and sandstone. Amber is also found along the whole shore of the German sea, and on the south coast of the Baltic. The projecting eastern shore of England too, and the coast at the entrance of the channel from the north affords many specimens. Rounded nodules have been occasionally met with in the beds of gravel near London. It is not, however, exclusively, though principally a northern product: the coast of the Adriatic sea and the Sicilian shores furnish a small quantity, and occasionally pieces have been dug up near Sisteron in Provence.

The property of amber, when rubbed, to attract hair, straws, and other light substances, was first observed by Thales one of the Greek philosophers, who on this account attributed a certain kind of life to it; and from the Greek name of amber, *electron*, is derived the modern term electricity, being the science of an important class of facts, the first known of which was the attracting power of amber. On this account, and also from the real beauty of the substance, it was held in high estimation among the Romans, who made it into bracelets, necklaces, and other articles of female ornament. Those pieces that contained insects, &c. then as at present were the most valued, and we meet with many allusions in the Roman poets to this circumstance: thus Martial says,

"Cum Phatonteâ formica vagatur in umbrâ,
Implicuit tenuem fuccina gutta feram."

They also held the idle opinion, which till lately was generally received among us, that a collar of amber tied round an infant's neck, would enable it to cut its teeth with safety.

When amber was more in request than it is now, as an ornament, and an article of *Materia Medica*, great attention was paid to it by the Prussian miners, and many experiments were made by the artists to remove its defects, and improve its beauty. The coarser and smallest pieces were called *standstein* or *fehlug*, those that were a little larger and cleaner had the name of *firnis* or *varnish* amber, and the larger and better pieces were called, from the particular works to which they were applicable. Of the transparent ambers the most valuable was the bright golden yellow, of the opaque varieties the most esteemed were the flaky, or scaly. Methods were discovered, especially by Gottlieb Samuelson of Breslau, of making opaque amber transparent, and of tinging it red, blue, violet, green, and white. Most of these secrets have perished with the inventors, but the two following were the usual methods of rendering amber transparent. First, by surrounding it with sand in an iron pot, and cementing it with a gentle heat for forty hours, some small pieces being occasionally taken out to judge of the progress of the operation. Secondly, which was the most usual method, by digesting and boiling the amber about twenty hours with rapeseed oil, when it became harder and clearer; linseed oil has not the desired effect. Amber, however, thus clarified, is always harder and less electric than in its natural state. The value of amber depending on its size, numerous attempts, but constantly without success, were made to solder together or melt down several small pieces, so as to convert them into one large piece.

The origin of amber has exercised the imagination of poets and chemists from the days of ancient Greece to the present, nor is it worth while to enter into an examination of any of these opinions, except those which are held by modern inquirers. Amber is by some considered as a proper mineral bitumen analogous to petroleum, perhaps originating

nating from this, and slightly altered by the action of the air or an acid. By others it is reckoned as a vegetable resin, which, by being buried in the earth in contact with carbonaceous and pyritical matters, has become hard, and experienced other modifications of its original properties. That whenever it is found in real mines, it is always accompanied with strata of fossil wood and peat, is a strong presumption of its vegetable origin; and the ants and other insects which it is so frequently found to contain, shew that amber must formerly have been fluid, and when in that state have been in places accessible to these animals, and therefore upon, or at least very near the surface of the earth. It might also be mentioned upon the authority of Götanner, if the uncorroborated authority of this chemist was of any value, that pieces of turpentine have been found in the large ants' nests, that abound in pine forests, penetrated by the acid of ants, and thus partly converted into amber, but still of a ductile consistence like wax.

The chemical properties of amber have been as yet but little examined. Few menstrua will dissolve without in some degree altering it. According to Hoffman, one part of powdered amber, and two of oil of almonds, are capable of combining with each other into a clear gelatinous mass, by being moderately heated for about an hour in a Papin's digester. It is also, according to the same author, totally soluble in caustic potash. Alcohol extracts the colouring part with some resin, but is not a complete solvent. It is said also, that sulphuric acid is a menstruum for amber, but probably not without considerably changing its properties. When exposed to dry distillation in a glass retort, it melts and swells greatly, and gives out first a watery acid liquor smelling strongly of amber, then a concrete acid salt which crystallizes in yellowish needles in the neck of the retort, and is the *succinic acid*; after which there passes a light coloured odorous oil, which, as the distillation goes on, becomes of a darker colour and thicker consistence, a small quantity of the acid also rises at the same time. When all the volatile parts are thus separated, there remains in the retort a spongy intensely black shining coal, the basis of the fine black *VARNISH*. The oil is afterwards rectified by distillation with water, when only the light fragrant colourless part comes over. The relative proportions of oil and acid vary according to the purity of the amber used and the care of the operator. From sixteen ounces of the common dark brown amber of the shops Neumann obtained eleven ounces, six drams of oil, four drams and a half of acid, an ounce and a half of acidulous water, and about an ounce of carbonaceous-residue. From thirty-two ounces of the small granular kind, or sandstein, he obtained nine drams of acid, and twenty-four ounces of oil.

The use of amber as a fumigatory is nearly laid aside, as is also the medical employment of its acid. The oil is used as an antispasmodic, both externally and internally, and when combined with ammonia forms *EAU DE LUCE*.

By the change of fashion, amber is little used as an ornament in Europe. Trinkets of this substance are, however, still valued in Turkey, and the East. The finest specimens are in the cabinet of the king of Prussia: as to the column ten feet high in the Florentine museum, an account of which authors have copied from each other for a century past, it is probably artificial.

Fourcroy Syst. des Connaiss. Chim. vol. viii. Bomare, Dict. d'Hist. Nat. vol. i. 250. Neumann's Chemistry, vol. i. p. 362. Macquer's Chemisches Wörterbuch, vol. i. p. 463. Haüy, Traité de Mineralog. vol. iii. 327. Weidenmann, handbuch der Mineralog. p. 637. Lenz, Versuch, &c. p. 511.

AMBER, black, *gagates*. See *JET*.

AMBER, liquid, and *balsam of*. See *BALSAM*.

AMBER, in *Geography*, a river of Germany, in Bavaria, which rises two leagues from Faxsen, and joins the Iser, near Landshut.

AMBER Bay, is situated on the peninsula of Yucaten, in the bay of Honduras, and lies north of ASCENSION Bay.

AMBER-SEED, or *myrt seed*, is a seed that is somewhat like the millet, of a bitterish taste, and brought dry to us from Martinico and Egypt. The Egyptians use it internally, as a cordial, to fortify the heart, stomach, and head, and provoke lust.—It gives a grateful scent to the breath, after eating; but it is not proper for those who are inclinable to vapours.

AMBER-TREE, in *Botany*. See *ANTHOSPERMUM*.

AMBERBOI. See *CENTAUREA*.

AMBERG, in *Geography*, a city of Germany, in the circle of Bavaria, and Upper Palatinate, 32 miles north of Ratibon, and 32 east of Nuremberg. It is the capital of the duchy and residence of the elector's governor; it is seated on the river Vils, which runs through it, is well fortified, and is the largest place in the Upper Palatinate. It has an electoral palace, a cathedral, and a college of Jesuits. It is said to have been raised from a village to a town in 1297; and was taken by the Imperialists in 1703. On a mountain near it stands the pilgrimage-church, called *Mary's help*, and in its vicinity is an iron-mine, which furnishes it with a considerable trade. N. lat. 49° 25'. E. long. 11° 55'.

AMBERG, a mountain of Sweden, in East Gothland, about two Swedish miles from Wadstena. Its height is so considerable, that from the summit of it a person may see 50 churches. Upon this mountain is a flat stone, under which one of the ancient kings is said to be interred. Antimony is found in this mountain near the Wetter-lake.

AMBERGER, CHRISTOPHER, in *Biography*, an eminent painter of portrait and history, was born at Nuremberg, and resided at Augsburg, where he died in 1550. He was a disciple of Hans Holbein, whom he imitated so exactly, that his pictures were sometimes taken for those of his master. He principally excelled in portraits, and acquired great reputation by his history of Joseph, in 12 pictures, and by the portrait of Charles V., for which the emperor paid him three times as much as he expected, besides a present of a rich chain of gold and a medal. Amberger was also an engraver, though his works are not specified. Pilkington and Strutt.

AMBERGREESE KEY, in *Geography*, an island in Hanover Bay, on the east side of the peninsula of Yucaten, in the bay of Honduras. It runs along the mouth of the bay, and is seventy miles in length, but very narrow.

AMBERGRIS, from *amber* and *gris*, **AMBERGREASE**, **AMBERGRISEA**, *succinum griseum*, in *Natural History*, a light, inflammable, greyish, variegated substance, fusible and fragrant with a gentle heat, and used as a perfume and a cordial. Its colour is grey, brown, or yellowish brown, spotted with black; its hardness and consistence are those of wax; its specific gravity from .780 to .926, so that it swims both in water and rectified spirit; its fracture is earthy and rugged, and exhibits bones of fish or beaks of birds; it has scarcely any particular taste, and unless heated, or much handled, very little smell; but in such circumstances its odour is very fragrant, resembling that of burning amber, and to most persons agreeable. It softens between the fingers, melts in a small degree of heat like wax; in a stronger inflames, and if pure, leaves no residuum; cold water has no effect upon it, but to boiling water it communicates its smell, and being partially melted, falls to pieces. It is scarcely affected by spirit of wine, which dissolves it sparingly with the assistance

assistance of a boiling heat, or fat oils: but by the essential, as that of turpentine, it is dissolved almost entirely, and by ether most perfectly. It has been found soluble in caustic fixed alkalis, still more so in oil of vitriol, and precipitable by water. Distilled it yields an aqueous phlegm, a brown-coloured acidulous spirit, a deeper coloured oil, at length, a thick balsam, and as some say, a volatile salt, leaving a black shining residuum. The spirit, oil, balsam, and salt, are similar to those obtained from amber; but the oil is of a more grateful smell. Its chemical products resemble those of bitumens, among which some have ranked it.

It is found on the sea-coasts, floating on the surface of the sea, adhering to rocks, or thrown out upon the shores, in several countries; as along the southern and eastern parts of Africa, Madagascar, the Maldives, some parts of the Mediterranean, and in the West Indies, about the islands of Bermudas and Jamaica, and the Bahama islands, also on the coasts of Carolina, and the western coasts of Ireland. It is likewise said to be found on the coasts of Norfolk, and in the islands of Orkney. It has also been found in the stomachs of whales, of various sizes and shapes. We have several instances in authors of large pieces of this matter: one of the largest that has been known in Europe was bought by the Dutch East India Company, of the king of Tidore, for 11000 dollars, in 1693, and sent to Amsterdam in 1694, and kept in their house for some years. It was almost round; measured two feet in diameter, and weighed a hundred and eighty-two pounds. The great duke of Tuscany offered fifty thousand crowns for it. We are told, however, that one was taken up, near the Cape of Good Hope, which weighed three hundred pounds; and another, if we may credit the relation, fifteen thousand pounds. Phil. Trans. N^o 263. N^o 232.

There has been a great variety of opinions among naturalists with regard to the origin and production of this substance: to rehearse them all, would make a volume. Klobius recites eighteen, to which we could add half as many more. The principal may be reduced to these which follow.

1. Some take it for the excrement of a bird, called in the Madagascar language *aschibobuch*, and by the Maldives *Anacangripasqui*; which being melted by the heat of the sun, and washed off the shore by the waves, they say, is swallowed up by whales, who return it back in the condition we find it.

2. Others, and particularly many of the orientals, imagine it springs out of the bottom of the sea, as *naphtha* does out of some fountains.—They add that the only springs of it are in the sea of Ormus, between the Arabian and Persian Gulfs. Edrissi, who is of this opinion, in the first climate of his Geography, mentions pieces of ambergris on those coasts, weighing a full quintal. Paludanus and Linschotten also speak of it as a sort of bitumen, gradually working up from the bottom of the sea and hardening in the sun.

3. Others take it for a sea-mushroom, torn up from the bottom by the violence of tempests; it being observed, that ambergris is never found but during the south-west monsoons, after storms.

4. Others assert, that it is a vegetable production, issuing out of the root of a tree, whose roots always shoot toward the sea, and discharge themselves into the same. This account we have in the Philosophical Transactions, from one of the Dutch factors at Batavia; and the same is confirmed by Mr. Boyle. Others take it for a kind of wax or gum, which distils from trees, and drops into the sea, when it congeals, and becomes ambergris. Mr. Magellan mentions an undoubtedly vegetable ambergris, gathered from the tree

by M. Aublet, and examined by Rouelle. Cronstett's Mineralogy, p. 458.

5. Others suppose it a spongy kind of earth, which the working of the sea washes off the rocks, where, being lighter than water, it floats.

6. Others maintain, that ambergris is made from the honey-combs which fall into the sea from the rocks, where the bees have formed their nests. This opinion seems to have something of experience on its side; several persons having seen pieces that were half ambergris, and half plain honey-comb; and others, again, having found large pieces of ambergris, in the middle of which, when broken, they discovered both honey-comb and honey. But the error of this hypothesis may be detected by chemical experiments; as honey likewise admits of a solution in aqueous *menstrua*, but resists the most highly rectified spirit of wine.

7. Others are of opinion, that it is a bituminous matter; that it is at first liquid, and runs into the sea: and that it is there condensed, and reduced into a mass. To this purpose Mr. Neumann, chemist to the king of Prussia, after an ample recital of all the different opinions advanced by others, gives us his own; which is, that ambergris is a bitumen, issuing out of the earth into the sea; at first of a viscous consistence, but hardening, by its mixture with some liquid *naphtha*, into the form wherein we find it. Phil. Trans. N^o 433, N^o 434. N^o 425. Mr. Cartheuser is of the same opinion.

This opinion has been considered as the best founded, and strengthened by this circumstance, that ambergris is found in the greatest quantities in the sea, about the island of Madagascar, where the subterranean parts are supposed to be impregnated with bituminous matter.

The pieces are frequently seen composed of divers strata, laid one over another, with stones and other bodies inclosed therein, and the strata are sometimes full of little shells, which seem a species of *concha anatifera*; whence it may be conjectured, that the ambergris has originally been in a fluid state, or, at least, that it has been dissolved and in that state has formed itself afresh, and enveloped such bodies as happened to be in its way.

Neumann gives the chemical characters of this bitumen, and its analysis, by distillation. He distinguishes the sophistications of ambergris, and observes, that it is totally soluble in oils and vinous spirits, and that it yields the same product, as AMBER. See the particulars and the proofs of this in Neumann's Works, p. 239. & seq.

8. Dr. Boyleston, and Mr. Dudley, in the Philosophical Transactions, assert, that the ambergris is a true, animal concrete, formed in balls, in the body of the male spermaceti whale, and lodged in a large oval bag, over the testicles, at the root of the penis. Phil. Trans. N^o 385. and 387. vol. xxiii.

It is certain the whale-catchers have divers times found ambergris in their spermaceti whales, and that chiefly in the large and older fort; and it is from the information of Mr. Atkins, and other whale catchers, that Mr. Dudley chiefly drew his account. But it is added, that it is not one spermaceti whale in an hundred that is found to have ambergris, and that it is found only in the male. To this account it has been objected, that ambergris is frequently found in females as well as in males; and that the beaks of the sepia, which are so constantly found in ambergris taken out of the whale, could not have been absorbed from the intestines by the lacteals or lymphatics, and collected with the ambergris in the above mentioned bag.

9. Others have approached nearer to the truth, who represent ambergris as the excrement of a cetaceous fish; because it has been sometimes found in the intestines, and

sometimes in the fæces themselves of such animals. Notwithstanding this suggestion, it was long thought, that ambergris, after having been swallowed, and in some mode or other changed in the stomach and bowels of the whales, from which it was obtained, was afterwards found among its excrements. But the real animal origin of ambergris has been satisfactorily ascertained by Dr. Swedjar, in the Philosophical Transactions, vol. lxxiii. art. 15.

In the accounts given of ambergris by various writers we have been told, that claws and beaks of birds, feathers of birds, parts of vegetables, shells, fish, and bones of fish, have been found blended with it. But Dr. Swedjar, after examining many fragments of this substance, found no such materials mixed with it; and though he allows that such may occasionally occur, yet the black spots which he discovered in the various pieces, found in the sea or in the whale, that were examined by him, appeared upon accurate scrutiny, to be the beaks of the *sepia octopodis*; and he apprehends, that these beaks were mistaken for claws or beaks of birds, or for shells. From the existence of these beaks in ambergris he infers, that this substance in its origin must have been of a very soft or liquid nature. In order to investigate the true nature of this substance, he premises, that ambergris has been found upon the sea and sea-coast, and also in the bowels of whales; but he observes, that it has never been determined, whether the ambergris found in these different situations be of the same kind, and possessed of the same or similar properties. He also suggests as a subject of previous inquiry, whether ambergris is found in all sorts of whales, or only in a particular species; whether it is constantly to be met with in those animals; and if this be the case, in what part of their body it is to be found. In discussing these subjects of examination, Dr. Swedjar consulted the most intelligent persons concerned in the spermaceti whale fishery, or in procuring and selling ambergris; and from their information it appeared, that this substance is sometimes found in the belly of the whale, but only in that species which is called the spermaceti whale, and which seems from its description and delineation to be the *physeter macrocephalus* of Linnæus. The New England fishermen, having been long apprized that ambergris is to be found in the spermaceti whale, conclude, that whales of this species frequent those seas where ambergris is found. They naturally expect to find ambergris in the spermaceti whales which they catch; but they are generally disappointed. Whenever they took a spermaceti whale, they observed, that it constantly not only vomits whatever it has on its stomach, but also generally discharges its fæces at the same time; and if this circumstance occurs, they seldom find ambergris in its belly. But whenever they discover a spermaceti whale, male or female, which seems torpid and sickly, they commonly find ambergris, as the whale in this state seldom voids its fæces upon being hooked. They likewise generally find it in the dead spermaceti whales, which they find floating upon the sea. Besides, those whales which yield ambergris have a morbid protuberance, or a kind of gathering, in the lower part of the belly, in which, when it is opened, they find ambergris. The whales, that yield this substance, are not only torpid and sick, but always leaner than others; and hence it is inferred, that a larger collection of ambergris in the belly of the whale is a source of disease, and probably sometimes the cause of its death. As soon as a whale, that is torpid, sick, or emaciated, or one that does not dung on being hooked, is caught, they immediately cut the protuberance already mentioned, if there be any, or rip open its bowels from the orifice of the anus, and find the amber-

gris, sometimes in one lump, sometimes in different lumps, generally from three to 12 and more inches in diameter, and from one to 20 or 30 lbs. in weight, at the distance of two, but most frequently of about six or seven feet from the anus, and never higher up in the intestinal canal; which, according to their description, is probably the intestinum cœcum, hitherto mistaken for a peculiar bag formed by nature for the secretion and collection of this singular substance. That this is the intestinal canal is certain, because they constantly begin their incision at the anus, and find the cavity every where filled with the fæces of the whale, which, from their colour and smell, it is impossible for them to mistake. The ambergris found in the intestinal canal is not so hard as that which is found on the sea or sea-coast, but soon hardens in the air. When first taken out, it has nearly the same colour, and the same unpleasant smell, though not so strong, as that of the mere liquid dung of the whale; but, on exposing it to the air, it gradually not only becomes greyish, and its surface covered with a greyish dust like old chocolate, but it also loses its disagreeable smell, and when kept for any long time, acquires the peculiar odour which is so agreeable to most people. In considering whether there be any material difference between ambergris found on the sea or sea-coast, and that found in the bowels or among the dung of the whale, Dr. Swedjar refutes the opinion, that ambergris found in whales is of an inferior quality, and therefore of much less value in price. Ambergris, he observes, is valued on account of its purity, lightness, compactness, colour and smell. On the different coasts pieces of ambergris are found of a very inferior quality; and those found in whales are of a superior quality; and different pieces in the same whale, are, according to the above specified test, of greater or less value. When ambergris is first taken out of the intestines of the whale, it has nearly the same smell with that of the liquid excrements, and also the same blackish colour; and it is found of different degrees of compactness, but never so liquid as the natural fæces of that animal. After being taken out and kept in the air, all ambergris becomes harder and whiter, and gradually loses its smell, and assumes such an agreeable one, as that in general has which is found swimming on the sea, and therefore the goodness of ambergris seems rather to depend on its age. By being accumulated after a certain length of time in the intestinal canal, it seems even then to become of a white colour, and less heavy, and to acquire its agreeable smell. The only reason why ambergris floating on the sea generally possesses the above mentioned qualities in a superior degree is, because it is commonly older, and has been longer exposed to the air.

It is more frequently found in males than in females; those pieces that are found in females are generally smaller, and those in males seem constantly to be larger and of a better quality; and therefore the high price in proportion to the size is not merely imaginary on account of its rarity, but in some respect well-founded, because such large pieces appear to be of greater age, and possess the above-mentioned qualities in a higher degree of perfection than smaller pieces.

It is known, continues our author, that the *sepia octopodia*, a little fish, is the constant and natural food of the spermaceti whale, or *physeter macrocephalus*. Of this the fishermen are so well convinced, that whenever they discover any recent relics of it swimming on the sea, they conclude that a whale of this kind is or has been in that part. Besides, the spermaceti whale, on being hooked, generally vomits up some remains of the *sepia*. Hence it is easy to account for the many beaks, or pieces of beak, of the *sepia* that

that are found in ambergris. The beak of the sepia is a black horny substance, and therefore passes undigested through the stomach into the intestinal canal, where it is mixed with the fæces; after which it is either evacuated with them, or, if these latter be preternaturally retained, form concretions with them, which render the animal sick and torpid, and produce an obstipation, that terminates either in an abscess of the abdomen, or becomes fatal to the animal; whence, in both cases, on the bursting of its belly, that hardened substance, called ambergris, is found swimming on the sea, or thrown upon the coast.

From the circumstances above recited, and from having observed the above-mentioned pieces of sepia in all fragments of ambergris of any size, Dr. Swediær concludes with great probability, that all ambergris is generated in the bowels of the physeter macrocephalus, or spermaceti whale, and then mixed with the beaks of the sepia octopodia, which is the principal food of that whale. He therefore defines ambergris to be the preternaturally hardened dung or fæces of the physeter macrocephalus, mixed with some indigestible relics of its food.

Many of the preceding observations, with regard to the production of ambergris, have been confirmed by the examination of Alexander Champion, Esq. a principal merchant concerned in the Southern whale fishery, and of the captain of a ship, employed by him, in the said fishery. This ship brought home about 300 ounces of ambergris, which the captain took out of the body of a female spermaceti whale, on the coast of Guinea. This was observed to proceed from the fundament of this fish, and whilst they were cutting the blubber, a piece of it was seen to swim on the surface of the sea. Some of this substance was observed in the same passage, and the rest was contained in a small bag, a little between the passage, and communicating with it. The whale seemed sickly, was lean and very old. The spermaceti whale, it was observed, feeds almost wholly on a fish called squids; and when the whale is dying, she throws up a quantity of squid, sometimes whole, and sometimes in pieces. The bills of the squid were found, some in the inside, and some on the outside of the ambergris, sticking to it. The spermaceti whale, when struck, voids her excrement; and if she does not, it is conjectured that she has ambergris in her. It was concluded by the intelligent captain, who communicated this information to the council of trade and foreign plantations, that ambergris is most likely to be found in a sickly fish; and that it is the cause or the effect of some disorder. The whole quantity of ambergris found in the whale, of which the above account was given, was 362 ounces troy, and it was sold for 19s. 9d. per ounce; half of it having been bought for exportation to Turkey, Germany, and France, and the other half having been purchased by the druggists in town. Phil. Trans. for 1791. vol. lxxx. art. 2.

Ambergris is of considerable use among perfumers, who melt it over a gentle fire, and make extracts, essences, and tinctures of it. It is one of the most agreeable perfumes, the least apt to disorder weak constitutions, or such as are liable to be offended by substances of that class. It would be of more use in physic too, were not its smell apt to occasion vapours.

There is a preparation, however, recommended by Hoffman, which is said not to be attended with these ill consequences. The preparation is made in the following manner: Let the spirit of roses, perfectly dephlegmated, be, not only once, but twice, at least, drawn off from the salt of tartar, which is burnt, or calcined, in a vehement fire. By this means there is produced a spirit, which, by its penetrating

quality, enters into the inmost substance of the ambergris, and so separates and resolves its oleous texture. This, we are assured, will not excite commotions and agitations in a weak body, as does the common preparation of ambergris, which is made with a mixture of musk or civet. Hoffm. Observ. Phys. Chem. lib. i. c. 18.

Ambergris enters into the composition of many cordial, sudorific, and alexiterial waters. But its chief virtue consists in its antispasmodic and sedative qualities, similar to those of musk and castor, and its power of relieving certain hysterical, convulsive, and other nervous affections. It may be taken inwardly from half a grain to ten or twelve grains, or more; for as to doses, there can be no fixed rules about remedies and diseases of these kinds. Dr. Lewis says, that taken internally, from two or three grains to a scruple, it is accounted a high cordial, corroborant and antispasmodic; and with this view it is prescribed by Riverius, in hypochondriacal affections. Dr. Swediær observes, that we cannot expect any medicinal effects from this substance in doses of two or three grains, but that it should be administered in the quantity of as many scruples for a dose; though even then it could not be expected to produce any great effect, as he himself took 30 grains of pure unadulterated ambergris in powder at once, without any sensible effect. A sailor once took half an ounce, and found it a good purgative. The faculty of Paris directs a tincture to be drawn by digesting two scruples of ambergris in two ounces of a highly rectified spirit, impregnated with roses. They have also a compound tincture made from the same quantity of ambergris, with half as much musk, ten grains of civet, six drops of oil of cinnamon, and four drops of oil of rhodium, digested together in four and one-half ounces of a spirit impregnated with roses, and orange flowers. This compound tincture is a very high perfume; and a few drops of it will give a fine scent to a large proportion of inodorous matter. In preparing these tinctures, the spirit should be made to boil or simmer with it first, that this ingredient may be completely dissolved before the more soluble ones are added. The orientals are said to look upon it as an aphrodisiac, and suppose that the frequent use of it contributes to longevity. In Asia and part of Africa, ambergris is used not only as a perfume and a medicine, but as an article of cookery; in which it is added to dishes in lieu of allspice. A great quantity of it is bought by the Mecca pilgrims, probably to use it for the purpose of fumigation and sacrifice, as the Catholics use frankincense. With us it is used by the perfumers to scent pillars, candles, balls, bottles, gloves, and hair-powder; and it is mixed with pomatums for the face and hands, either alone or compounded with musk, &c.

Ambergris is very commonly counterfeited and adulterated. The first generally consists of musk, civet, storax, laudanum, and aloes wood, mixed together; the latter of a large quantity of bullock's blood, duly flavoured with musk and civet. It is one of the most agreeable perfumes; but must be proportioned so sparingly, as that while it improves the smell of what it is added to, its own may not be perceived.

It may be known to be genuine by its fragrant scent, when a hot needle or pin is thrust into it, and its melting like fat, of an uniform consistence. Whereas the counterfeit will not yield such a smell nor prove of such a fat texture. One thing, however, is very remarkable, that this drug, which is the most sweet of all the perfumes, should be capable of being resembled in smell, by the preparation of one of the most odious of all fœtid substances. Mr. Homberg found that a vessel in which he had made a long digestion of the human fæces, acquired a very strong and perfect smell of ambergris, inasmuch that any one would have thought a great quantity

of essence of ambergris had been made in it. The perfume was so strong and offensive, that the vessel was forced to be removed out of the laboratory. Mem. Acad. Roy. 1700.

AMBERIEUX, in *Geography*, a town of France, in the department of the Ain, and chief place of a canton, in the district of Belley, 8 leagues north-east of Lyons. The place contains 2850, and the canton 7275 inhabitants. The territory comprehends 105 kilometres, and 5 communes. N. lat. $45^{\circ} 58'$. E. long. $5^{\circ} 15'$.

AMBERING is used, by some writers, to denote the giving a scent or perfume of amber to any thing. This is otherwise called *enambering*. Dr. Hooke mentions an extraordinary method of *ambering in infinitum*, i. e. with a small quantity of amber, and other requisites, *enambering* a hundred or a thousand pounds of sugar, or the like, so as the first matter still remains undecayed, to be used again. Hooke's Phil. Collect. N^o 4.

AMBERT, in *Geography*, a town of France, in the department of Puy de Dome, and chief place of a district, situate on the rivere Dore, $10\frac{1}{2}$ leagues south-east of Clermont. It has a manufacture of camblcts and woollen stuffs, and also of excellent paper and playing-cards, &c. The place contains 5926, and the canton 16,376 inhabitants. The territory includes 265 kilometres and 8 communes. N. lat. $45^{\circ} 33'$. E. long. $3^{\circ} 39'$.

AMBETTUWAY, in *Botany*, the local name of a tree, the leaves of which are said, when boiled in wine, to create an appetite, and used by the people of Guinea, for that purpose.

AMBIA, in *Ancient Geography*, an episcopal city of Africa, in Mauritania.

AMBIANI, a people of Gaul, in Belgia Secunda, mentioned by Cæsar, Strabo, Pliny, and Ptolemy. They were situated between the Morini to the north, the Atrebatii and Veromandui to the east, the Bellovaci to the south, and the Caleli to the west, and had the sea on the north-west. Their principal river was Samara, and their capital Samarobriua, which afterwards took the name of the people. These people were distinguished among the ancient Belgians. We learn from Cæsar that they furnished 5000 men for the siege of Alesia, and their cavalry are much commended.

AMBIANUM, now *Amiens*, the capital of the Ambiani.

AMBIBARI, a people of Gaul, supposed to be the Armorica of Cæsar; and since his time the ABRINCATUI. M. D'Anville does not know where to place them.

AMBIDRANI, a people placed by Ptolemy in Norica.

AMBIDEXTER, compounded of *ambo*, both, and *dexter*, right hand; by analogy to the Greek, $\alpha\mu\beta\iota\delta\epsilon\chi\iota\omicron\varsigma$, which signifies the same; one who uses both hands alike, the left as well as right, or in cases where only the use of one is necessary.

Women, according to the observation of Hippocrates, are never ambidextrous. But this is denied by some moderns, who give instances of the contrary; though it is owned, they are but few in comparison of those that are found in the other sex. It may be imputed to education and habit, that men as well as brutes are not all ambidexters, there being no difference of right and left in the nature of things. Nurses are even forced to be at some pains to enure the infants under their care to forego the use of their left hand. How far it may be our advantage to be deprived of half our natural dexterity, may be doubted. It is certain there are infinite occasions in life, when it would be better to have the equal use of both hands. Surgeons and oculists are of necessity obliged to be ambidexters; bleeding, &c. in the left-arm or

left-ankle, and operations on the left-eye, cannot be well performed but with the left-hand. Divers instances occur in history, where the use of the left-hand has been cultivated preferably to the right. But by the laws of the ancient Scythians, people were enjoined to exercise both hands alike, without partiality either for the right or left; and Plato enjoins *ambidexterity* to be observed and encouraged in his republic. In the Grecian armies their more distinguished soldiers, their pikemen and halberdeers, as those who formed the first line of their battalions, were to be able to fight indifferently with the left hand or right. We find it mentioned in Scripture, that, on an extraordinary occasion, the single tribe of Gad produced 700 brave men, who fought with the left hand as well as the right; and the Roman historians assure us, that they had gladiators who were trained up to the same exercise. An ingenious French writer is surprised, that among all the modern refinements in the art of war, none have thought of restoring the ancient practice of forming ambidexters, which, it is certain, might be of considerable service in the way of stratagem. In performing on keyed instruments, the harp, the dulcimer, and such as have a separate part for each hand, ambidexterity is necessary. On the piano forte, organ, harpsichord, or clarichord, *two right hands* are so necessary, that a child rigidly prohibited the use of the left hand in the common offices of life, can never have a powerful left hand in performing on the instruments just mentioned; but in rapid divisions, fugues, and imitations, the clumsiness with which difficult passages are performed with the left hand disgraces the player and injures the composition. In the serious studies and practice of the student on the piano forte intended for the profession, it might be necessary for him perhaps to try to execute all kinds of feeble passages, shakes, beats, and trills with the left hand, till they can be played with so much ease and brilliancy, that a distant hearer, out of sight of the instrument, shall not be certain which hand has been employed.

AMBIDEXTER, in *Law*, denotes a person who takes money from both of the contending parties to aid them in their cause. In this sense the word may be applied to a judge, juror, a solicitor, or the like. The penalty on a juror, in such a case, is to forfeit DECIES TANTUM, ten times as much as he receives.

AMBIGNA, in *Antiquity*, an appellation given to a victim, which was surrounded, or attended at the time of offering it, with other lesser ones. In this sense the word is also written *ambegui*. We read of *ambigna oves*, used in sacrificing to Juno; which were sheep, having brought forth twins, and offered up with two lambs fallen on either side.

ABIENT, formed of *ambire*, to encompass, a term applied to such things as encompass others round about; called also *circumambient* bodies. The whole body of air, because it encompasses all things on the face of the earth, is often by physical writers called, by way of eminence, the *ambient*, or *ambient air*.

AMBIERLE, in *Geography*, a town of France, in the department of the Rhone and Loire, and chief place of a canton, in the district of Roanne, eight miles north-west of Roanne.

AMBIGENAL *hyperbola*, in *Conics*, a name given by Newton in his "Enumeratio Linearum tertii Ordinis," to one of the triple hyperbolas, EGF (Plate I. *Conics*, fig. 1.) of the second order, having one of its infinite legs, as EG, falling within the angle ACD, formed by the asymptotes AC, CD, and the other leg GF falling without that angle. See HYPERBOLA.

AMBIGU denotes a kind of mixed entertainment, where-

in both flesh and fruit are served together; so that it seems doubtful whether to denominate it a mere collation, or a meal.

AMBIGUA, in *Conchology*, a species of BULLA. Shell somewhat tapering, slightly compressed, pale flesh colour, with two remote bands, one broad and brown, the other blue. Gmelin. Country unknown. It is uncertain whether this shell belongs to the Linnæan genus, in which Gmelin places it.

AMBIGUA, in *Entomology*, a species of CICADA, that inhabits China. Its colour is olive. Wing cases clear, anterior margin testaceous. Donovan. *Inf. China*.

AMBIGUA, a species of PHALÆNA, of the *noctua* family. Thorax smooth; wings deflexed, greyish, speckled with black; behind the middle a black streak. Inhabits Austria; and is produced from a larva with a brown head and body, variegated with ferruginous and brown. Lower wings whitish, with a black spot in the middle. Fabricius.

AMBIGUOUS, something dubious, obscure, or which may be taken in different senses. See EQUIVOCAL.

The word is formed of *ambo*, both, and *ago*, I drive; q. d. that which keeps the mind wavering, or in suspense, not knowing which side to choose. The answers of the ancient oracles were always ambiguous. An anonymous writer has published a dictionary of ambiguous words. *Lexicon Philosophicum de Ambiguitate Vocabulorum*. Francoff. 1597, 4to.

Ambiguity is occasioned either by a wrong choice of words and the use of equivocal terms, or by an improper arrangement of them. Ambiguities of the last kind are either where the arrangement leads to a wrong sense, or where the sense is left doubtful. Dr. Campbell expresses the former by the term equivocation, and appropriates that of ambiguity to the latter. See *Elem. of Criticism*, vol. ii. p. 20—54. and *Campbell's Philosophy of Rhetoric*, vol. ii. p. 28—38. See PERSPICUITY.

AMBIL, in *Geography*, one of the smaller Philippine islands, with a volcano, near the island of Luban.

AMBILATRI, in *Ancient Geography*, a people of Gaul, supposed by Martin to be the same with the *Ambiliates*, who are called by Orosius *Ambivarites*. Sampson places them in Brittany, towards Lamballe.

AMBILICI, a people of Norica, according to Ptolemy.

AMBISNA, a town of Spain, assigned by Ptolemy to the Murgobi.

AMBISONTII, or AMBISSUNTES, a people so called by Pliny, and placed by Ptolemy in Norica.

AMBIT of a figure, in *Geometry*, denotes the *perimeter*, or the line or sum of all the lines by which it is bounded.

Isaac Vossius has a particular inquiry concerning the ambit, or circumference of ancient Rome. That of the city he makes to be 60½ miles, or *mille passus*, and that of the city and suburbs together 72 miles; exceeding ancient Babylon, whose ambit was only 60 miles.

AMBIT, *ambitus*, called also *angiportus*, was particularly used, in *Antiquity*, to denote a space of ground to be left vacant betwixt one building and another. By the laws of the Twelve Tables, houses were not to be built contiguous, but an ambit or space of 2½ feet was to be left about each for fear of fire. This was usually a thorough-fare, but sometimes not. For when Rome was crowded with houses, these interstices were only left between some houses. Nero, after the dreadful fire which happened in his time, restored the ancient mode of building houses separate from one another. *Tacit. Annal.* xv. 43.

The *ambitus* of a tomb, or monument, denoted a certain number of feet, in length and breadth, around the same, within which the sanctity assigned to it was limited. The

whole ground wherein a tomb was erected was not to be separated from the common uses: for this reason, it was frequent to inscribe the *ambit* on it, that it might be known how far its sanctity extended: thus, *in fronte pedes tot, in agrum pedes tot*.

AMBITIANUS *Vicus*, in *Ancient Geography*, the place in which Caligula was born, and in which, according to Pliny, there were altars erected in honour of that prince. Clavier makes it the village of Capella, near Coblentz. M. d'Anville places it on the Rhine, between Confluentes on the north-west, and Banderbrica to the south.

AMBITION, in *Ethics*, is the passion which prompts men to value or to seek any kind of eminence or distinction, as well as to avoid degradation and reproach. It is a kind of compound of *admiration* and *desire*, and becomes either a virtue or a vice, honourable or disgraceful, useful or pernicious, according to its direction or degree. The opinions of others concerning us, when expressed by words or actions, are principal sources of happiness or misery. The pleasures of this kind are usually referred to the head of honour; the pains to that of shame; but as it is most convenient to have a single word, to which to refer both pleasure and pain of this class, Dr. Hartley selects ambition for this purpose. He classes the several particulars which persons, under the influence of ambition, wish to have known to others, or concealed from them, in order to obtain praise or dispraise, under four heads; *viz.* external advantages or disadvantages, of which the principal are finclothes, riches, titles, and high birth, with their opposites, rags, poverty, obscurity, and low birth; bodily perfections and imperfections, of which the chief are beauty, strength, and health on the one hand, and on the other, deformity, imbecility unfitting a person for the offices of life, and disease; intellectual accomplishments or defects, such as sagacity, memory, invention, wit, learning, and their opposites, folly, dulness, and ignorance; and moral qualities, *i. e.* virtue or vice. This ingenious writer investigates, in conformity to his proposed theory, the associations by which the pleasures and pains of ambition are produced. *Observations on Man*, § 2. prop. 95. p. 262, &c. Ed. 1791.

The Romans erected a temple to Ambition; and this was the divinity to which they offered the greatest number, or at least a very considerable number of sacrifices. It was represented with wings on its back, and naked feet, to express the extent of its designs, and the promptitude with which they were executed. "A being of the nature of man," says an elegant historian, at the close of his account of the Byzantine princes, "endowed with the same faculties, but with a longer measure of existence, would cast down a smile of pity and contempt on the crimes and follies of human ambition, so eager, in a narrow span, to grasp at a precarious and short-lived enjoyment. In a composition of some days, in a perusal of some hours, 600 years have rolled away, and the duration of a life or reign is contracted to a fleeting moment; the grave is ever beside the throne; the success of a criminal is almost instantly followed by the loss of his prize; and our immortal reason survives the 60 phantoms of beings who have passed before our eyes, and faintly dwell on our remembrance. The observation, that in every age and climate ambition has prevailed with the same commanding energy, may abate the surprise of a philosopher; but while he condemns the vanity, he may search the motive of this universal desire to obtain and hold the sceptre of dominion." *Gibbon's Hist.* vol. ix. p. 10.

AMBITNI, in *Ancient Geography*, a people of Galatia.

AMBITUS, among the *Ancient Romans*, the act of soliciting, or making interest, for offices or honours.

The candidates, in this case, went about the city, and into all publick places and assemblies, to beg votes; which was

was called *ambitus*: from *am*, in the ancient Latin, signifying *circum, about*, and *ire, to go*.

Among the Romans, it differed from *ambition*, as the former lies in the act, the latter in the mind. *Ambitus* was of two kinds, one lawful, and even laudable; the other infamous. The first, called also *ambitus popularis*, was when a person offered his service to the public frankly, leaving it to every body to judge of his pretensions as they found reasonable. This kind was not prohibited by any law, but always approved and practised by the best and greatest men.

The means and instruments here made use of were various: 1. *Amici*, or friends, under divers relations, including *agnati, affines, necessarii, familiares, vicini, tribales, clientes, municipes, sodales, collegæ*. 2. *Nomenclatura*, or the calling and saluting every person by his name; to which purpose the candidates were attended with an officer, under the denomination of *interpres*, or *nomenclator*. 3. *Blanditiæ*, or obliging persons by serving them, or their friends, patrons, or the like, with their vote and interest on any other occasions. 4. *Præsentio*, the shaking every person by the hand, offering him his service, friendship, &c. 5. *Affiduitas*. 6. The *toga candida*, worn loose. 7. *Benignitas*, the distributing largesses, *congiuria*, &c.

The second kind was that wherein force, cajoling, money, or other extraordinary influence was made use of. This was held infamous, and severely punished, as a source of corruption and other mischiefs. This kind of *ambitus* was at one time the great trade of Rome, and demanded a constant supply of great sums of money. Tully assigns this as the cause of the high rate of interest, and tells us it had raised it from 4 to 8 per cent. Bribery was come to the pitch of 80729l. per tribe; and there being no less than 35 tribes, it is obvious how expensive this corruption was grown. It is also well known where it ended. Several laws were made against it; as the *Lex Acilia*, or *Calpurnia*, A. U. 686, *Aufidia*, A. U. 692, *Bebia*, A. U. 571, *Æmilia*, A. U. 675, *Cornelia*, A. U. 672, *Cæcilia Didia*, *Fabia*, *Julia Augylli*, *Julia Cesaris*, *Licina*, A. U. 698, *Maria*, *Patelia*, A. U. 397, *Pompicia*, A. U. 701, *Tullia Vestus*, A. U. 960.

In the year of Rome 321, the use of the *toga candida* was prohibited. In the year 397, the candidates were forbid to go to the markets and meetings in the neighbouring towns. In 571, severe penalties were laid on the givers of largesses. In 594, this was made punishable by banishment. In 692, by the *lex Aufidia*, it was enacted, that if a candidate presented money to a tribe, and did not pay it, he should be exempt, but if he did pay it, he should be obliged to pay to every tribe a yearly fine of 3000 sesterterii as long as he lived. In 697, heavy fines were imposed. By the *Lex Tullia*, made in the consulship of Cicero, the candidates were forbidden to bestow any combats of gladiators on the people, to make any public feasts, or to cause themselves to be followed by a crowd of clients for two years before they offered themselves for any place. A senator, who was guilty of a breach of this law, was punished with ten years banishment; others were fined, and rendered incapable of any dignity for ever.

Ambitus was not only practised at Rome and in the forum, but in the meetings and assemblies of other towns in Italy, where numbers of citizens were usually found, on account of trade and business. The practice ceased in the city from the time of the emperors, because posts were not then to be had by courting the people, but by favour from the prince. Persons who had causes depending practised the same, going about among the judges to implore their favour and mercy. They who practised this were called *ambitiosi*. Hence we also meet with *ambitiosa decreta*, and *ambitiosa*

justa; used for such sentences and decrees as were thus procured from the judges, contrary to reason and equity, either gratuitously or for money.

AMBITUS, in *Music*, a name sometimes appropriated to signify the particular extent of each tone, or modification of grave and acute.

AMBLIVARETI, in *Ancient Geography*, a people of Belgic Gaul, placed by Cæsar beyond the Menfe. Martin places them between the Scaldi to the west, and Mosa to the east; and to the south of the Menapii, near the situation of the present Brabant.

AMBIX, in *Ancient Writers*, denotes a vessel of glass or shell. Hence the origin of the word *alambic*, which we sometimes also find denoted by the word *ambix*.

AMBLADA, in *Ancient Geography*, a town of Asia Minor, in Pisidia, according to Stephan. Byz. but in Caria, according to Strabo, who says, that the wine of Amblada was useful in medicine.

AMBLAU, in *Geography*, one of the Molucca islands, is the smallest of those that are subject to the governor of Amboyna, and distant three leagues from Bouio.

AMBLE, *AMBLING*, in *Horseman's lerp*, a peculiar kind of pace, wherein a horse's two legs, of the same side, move at the same time.

The ambling horse changes sides at each remove; two legs of a side being always in the air, and two on the ground at the same time: an amble is usually the first natural pace of young colts, which, as soon as they have strength enough to trot, they quit. There is no such thing as an amble in the manege; the riding-masters allowing of no other paces beside walk, trot, and gallop; their reason is, that a horse may be put from a trot to a gallop, without stopping him; but not from an amble to a gallop without stopping, which loses time, and interrupts the justness and cadence of the manege. This movement, which is very laborious to the horse, and in which he ought not to be indulged, except on smooth ground, is very easy to the rider; it has not the hardness of a trot, because the hind leg moves along with the fore one, and creates no resistance to the motion. Connoisseurs say that horses which naturally amble never trot, and that they are much weaker than those which have no such movement. Colts, indeed, often assume this mode of moving, when forced to go quick, and when they have not strength enough to trot or to gallop; and even good horses, after being fatigued, or when they begin to decay, are apt, when pushed, to amble spontaneously. The amble may, therefore, be regarded as a motion occasioned by weakness or defect. But there are two other movements assumed spontaneously by weak or decayed horses, which are still more defective than that of the amble, and they are known by the name of *broken ambles*. The one is a motion between walking and ambling, and the other between trotting and gallopping. Both proceed from great fatigue or weakness in the loins, and are conspicuous in many of our hackney and post-horses.

There are various practices and methods of discipline for bringing a young horse to amble; some choose to toil him in his foot-pace through new-ploughed lands, which naturally inures him to the stroke required in the amble. But its inconveniences are, the weakness and lameness that such disorderly toil may bring on a young horse.

Others attempt it by sudden stopping or checking him in the cheeks when in a gallop, and thus putting him into an amazedness, between gallop and trot, so that losing both he necessarily stumbles upon an amble. But this is apt to spoil a good mouth and rein, and exposes the horse to the danger of a hoof-reach, or sinew strain, by over-reaching, &c.

Others

Others prefer ambling by weights as the best way; and to this end some overload the horse with excessive heavy shoes, which is apt to make him interfere or strike short with his hind feet. Others fold leaden weights about the fetlock pasterns, which are not only liable to the mischiefs of the former, but put the horse in danger of incurable strains, crushing of the coronet, and breeding of ring-bones, &c. Others load the horse's back with earth, lead, or the like massy substance; but this may occasion a swaying of the back, over-straining the fillets, &c.

Some endeavour to make him amble in hand before they mount his back, by means of some wall, smooth pail or rail, and by checking him in the mouth with the bridle hand, and correcting him with a rod on the hinder hoofs, and under the belly, when he treads false. But this is apt to drive a horse to a desperate phrensy before he can be made to understand what they would have of him, and to rear, sprawl out his legs, and to make other antic postures, which are not easily quitted again. Others think to effect it by a pair of hind shoes, with long spurs or plates before the toes; and of such length, that if the horse offers to trot the hind-foot beats the fore-foot. But this occasions wounds of the back-sinews, which often bring on an incurable lameness.

Some attempt to procure an amble by folding fine soft lilt strait about his gambels, in the place where he is gartered for a stifle-strain, and turn him thus to grass for two or three weeks, and afterwards take away the lilt. This is a Spanish method, but disapproved; for though a horse cannot then trot but with pain, yet the members must be sufferers; and though the amble be gained it must be slow and unsightly, because attended with a cringing in the hind-part. In effect, ambling by the trammel, as practised by us, appears the nearest to nature, and best and most assured way.

There are divers errors, however, usually practised in this method; as, that the trammel is often made too long, and so gives no stroke, but makes a horse hackle and shuffle his feet confusedly; or too short, which makes him volt and twitch up his hind feet so suddenly, that by custom it brings him to a string-halt, from which he will scarce ever be recovered. Sometimes the trammel is misplaced, and, to prevent falling, put about the knee and the hind-hoof. In which case the beast cannot give any true stroke, nor can the fore-leg compel the hind to follow it; or if, to evade this, the trammel be made short and straight it will press the main sinew of the hind-leg and the fleshy part of the fore-thighs, so that the horse cannot go without halting before and cringing behind.

As to the matter of the trammel some make it all of leather, which is inconvenient, in that it will either stretch or break, and thus confound the certainty of the operation. In a true trammel the side ropes are to be so firm as not to yield to a hair's breadth; the hose soft, and to lie so close as not to move from its first place; and the backband flat, no matter how light, and to descend from the fillet so as not to gall.

When the horse, by being trammelled on one side, has attained to amble perfectly in the hand, it is to be changed to the other side, and that is to be likewise brought to rule.

When by this changing from one side to another with a half-trammel, the horse will run and amble in the hand readily and swiftly, without snappering and stumbling, which is ordinarily done by two or three hours labour; the whole trammel is to be put on, with a broad, flat, backband, and both sides trammelled alike. See TRAMMEL.

This pace is now generally disused, and not admitted in the regular system of the Manege.

AMBLAUW, or BELAUW, in *Geography*, one of the Molucca islands, about four leagues in circumference, two leagues south of Bourro.

AMBLESIDE, an old irregular town of Westmreland, near the lake of Windermere or Winandermere. It is 274½ miles from London, and its weekly market is on Wednesday.

AMBLETEUSE, a sea port town of France, in the department of the Straits of Calais, in the English channel, eight miles north of Boulogne, and twelve south-west from Calais. It is defended with a battery of cannon. King James II. on his departure from England, in 1688, landed in this place. At this port, called *Ambletoniensis portus*, Cæsar embarked his cavalry when he passed over into England. N. lat. 50° 48'. E. long. 1° 37'.

AMBLYGON, or AMBLYGONIUM, formed of *αμβλυ*, *obtusè*, and *γωνία*, *angle*, and denoting *obtusè-angular*; in *Geometry*, denotes a triangle, one of whose angles is obtuse, or consisting of more than ninety degrees.

AMBLYOPIA, AMBLYOPY, in *Surgery*, dulness of sight, from *αμβλυ*, *dull*, and *ὀφθαλμὸς*, *the eye*: *visû debilis* of Ætius; *visû hebitudo* of Boerhave. By this term Paulus and Actuarius denote the GUTTA SERENA, or AMAUROSIS. See DY-SOPIA and GUTTA SERENA.

AMBO, or AMBON, a kind of pulpit or desk in the ancient churches, where the priests and deacons stood to read or sing part of the service, and preach to the people; called also *analogium*.

The term is derived from *ἀναβαίνειν*, *to mount*. The *ambo* was mounted upon two sides, whence some also derive the application from *ambo, both*. The *ambo* was ascended by steps, which occasioned that part of the office performed there to be called the gradual. The Gospel was read at the top of the *ambo*, the Epistle a step lower.

The modern reading desks and pulpits have been generally substituted instead of the ancient *ambos*, though, in some churches, remains of the *ambos* are still seen. In that of St. John de Lateran, at Rome, there are two moveable *ambos*. M. Thiers inveighs against the disuse of the ancient *ambo*. Those by whom this innovation has been effected he calls by a new word *ambonoclastes*. It was in the *ambo* that publication was made of feasts, fasts, processions, &c. Here were read the acts of the martyrs, the *sancta sanctorum*, the diptychs, or commemoration of the dead; the letters of peace and communion, which one church sent to another. Here new converts made their public confession of faith, and bishops their defence against accusations brought against them. Here treaties of peace were sometimes also concluded, and coronations of kings and emperors performed, &c.

Several antiquaries hold that the *ambo* was anciently the place from whence the bishops and presbyters made their sermons; pulpits for that purpose having only been introduced by the mendicants at the beginning of the thirteenth century. A late writer combats this opinion, and shews, that the usual place from whence the ancients preached was the steps of the altar; not but St. Chrysostom and St. Augustine both appear to have preached from the *ambo*, but this was looked on as a thing somewhat extraordinary.

AMBOES, or AMBUS, in *Geography*, a people of Lower Guinea in Africa.

AMBOHITSMENE, or VOHITSANGHOMBE, a province of Madagascar, situate west and north of Antavare, derives its appellation from the red mountains of the same name, lying in 20° of south latitude. The high mountains resemble the Tafelberg of the Cape of Good Hope, and

are seen from a great distance at sea. On one side of this long and lofty ridge of mountains, which extends fifteen leagues inland, is the sea, and on the other a flat country, abounding in ponds and marshes. Here is also a lake fifteen leagues long, and of the same breadth, that contains several small islands. The people that inhabit these mountains are called Ambohitmenes.

AMBOINENSE, in *Conchology*, a species of *CARDIUM*. This shell is rather oblong, white, with blackish spots, and the ribs very convex. It inhabits the shores of Amboyna, is an inch and three quarters in length, and the ribs are usually about twelve in number.

AMBOINENSIS, in *Ornithology*, a species of *CERTHIA* that inhabits Amboyna; it is of a cinereous colour above, beneath green, head and neck yellow, breast red, and wings black. Gmelin's Linn. This bird is remarkably brilliant and glossy, the length is about two inches and three quarters, bill half an inch long, and yellowish, and the edges of the wings and quills yellow.

This is the Thioi, or Kakopit of Seba. Mus. or *Avis Amboinensis*; and *Polytmus Amboinensis* of Brisson. Dr. Latham calls it the Amboina Creeper, observing, that "both Edwards and Buffon say, that *humming-birds* are peculiar to South America, and that none are found on any part of the old continent. It is most probable that the three last-mentioned (*viz.* the Macassar, Indian, and Amboinan creepers) may belong to the creeper genus on our better acquaintance with them; which is the more to be supposed, as the whole description has been taken from Seba, who lived in an age not sufficiently enlightened in these matters.

AMBOINENSIS, a species of *PSITTACUS*, or parrot. It is of a fine scarlet, with a blue back, and a green spot in the wing. Gmel. Linn. This is the *Psittaca Amboinensis coccinea* (red Amboyna parrot) of Brisson, and *Lori Perruche tricolor*, (three-coloured Lory parrot) of Buffon, as well as the *Perruche rouge d'Amboine*, Pl. enl. of the latter author.

The length of this bird is fifteen inches and an half, the bill red, with a black tip; the head, throat, neck, and under parts scarlet; back, rump, upper tail, lesser underwing coverts, and the edge of the wings fine blue; under tail coverts violet in the middle, surrounded with red; the two middle tail feathers nine inches and an half in length, and of a violet brown; the exterior feathers decrease gradually in length, the outer one on each side being only four inches and an half long, and is distinguished from the rest by having the interior margin red. The legs and claws are red. It is a native of Amboyna, as its specific names imply.

AMBOINENSIS, a species of *TURDUS*, rather bigger than a lark; it inhabits Amboyna, and is remarkable for its fine singing, and for stirring up its tail, which reflects on the back in the breeding season.—The colour is ferruginous or reddish-brown, beneath yellow; the secondary quill-feathers from the base to the middle yellowish, tail cuneiform or wedge-shaped, and fulvous beneath. Gmel. Linn. Seba calls this *Avicula Amboinensis cinerea*. It is the *Merula Amboinensis* of Brisson, *Le Merle d'Amboine* of Buffon, and *Amboina thrush* of Latham.

AMBOISE, GEORGE D', in *Biography*, a French cardinal and minister of state, was born of an ancient and noble family in 1460. As he was a younger son he was destined for the church, and at the age of 14 obtained the bishopric of Montauban. He was appointed almoner to Lewis XI. and raised by Lewis XII., to whose interest, whilst he was duke of Orleans, he attached himself, and for whom he suffered imprisonment, to the archbishopric of Narbonne, which

he changed for that of Rouen. In the situation of lieutenant-general, under the duke of Orleans, who was governor of Normandy, he was instrumental in restoring justice and order to that province. Upon the accession of Lewis XII. he was made cardinal and prime minister, and acquired popularity by diminishing the imposts. After the conquest of the Milanese in 1499, he recovered the people who had revolted to their allegiance. As the pope's legate in France he attempted the reformation of the ecclesiastical orders, and promoted it by his own example; for he held only one benefice at a time, and devoted two-thirds of the revenue of his archbishopric to the relief of the poor and the repair of religious edifices. He aspired to the papacy with a view of more effectually accomplishing his schemes of reform, but he was counteracted and outwitted by the Italian cardinals. As a minister of state he contributed so much to the welfare of the nation, that he was honoured with the appellation of "the father of the people." For the purpose of reforming the courts of judicature, and suppressing partiality and bribery in the administration of justice, he caused to be compiled a new code of regulations, and exercised his authority in Normandy, where he was governor, in reducing them to practice. The disappointment of his views with regard to the papacy, induced him to recommend a war with the Venetians, to whom he conceived it was owing. Conscious of some errors and faults into which his ambition had led him, he expressed his concern in the review of his conduct to an infirmity brother, who attended him at the convent of the Cælestines, at Lyons, where he was taken ill, in the prosecution of his journey for the Venetian war.—"Brother John! why have not I been all my life-time brother John." He died in this place, A.D. 1510, in the 50th year of his age. During the whole of his administration he caused the sciences and trade to flourish. He was a munificent patron and encourager of literature; and such was his general conduct in the various stations which he occupied, and especially as prime minister, that he was as much beloved by the people as by his master. Gen. Dict.

AMBOISE, FRANCIS D', was the son of a surgeon to Charles IX. of France, and maintained by his liberality in the college of Navarre, where he studied rhetoric and philosophy. In 1572 he was made solicitor of the French nation, and afterwards applying to the study of the law, became one of the best advocates of the parliament of Paris. From this employment he was advanced to that of counsellor in the parliament of Bretagne, and then to be a master of requests and counsellor of state. He published several pieces chiefly of a poetical kind, and others containing an account of his travels into various countries. He took great pains in collecting the MSS. of Abelard, and he prefixed an apologetical preface to the edition of 1616. His two brothers, Adrian and James, arrived at considerable literary and professional eminence; the former as an ecclesiastic and the latter as a physician. Gen. Dict.

AMBOISE, *Ambasia*, or *Ambacia*, in *Geography*, a town of France in the department of the Indre and Loire, and chief place of a canton, in the district of Tours; situate at the conflux of the Loire and Amasse. The place contains 5100, and the canton 14,415 inhabitants; the territory comprehends 322½ kilometres and 16 communes. It has two parish churches, four convents, and a hospital; and near it is a large castle seated on a high rock, and difficult of access, in which are shewn the statues of Charles VIII. and of his consort Anne. In this place the protestants conspired in 1560, and the civil war commenced in 1561, and here it is said the name of Huguenot had its origin. In the castle of this town Lewis XI. instituted

stituted the order of St. Michael, in 1469; and Charles VIII. was born in 1470, and died in 1498, at Amboise, N. lat. $47^{\circ} 24' 51''$. W. long. $0^{\circ} 59' 7''$.

AMBOISES, see AMBEEZES.

AMBON, a town of France, in the department of the Morbihan, three leagues S.E. of Vannes.

AMBONUM, in *Natural History*, a term used by some old writers, to express the prominent tubercles on certain stones.

AMBORA, in *Botany*. See MITHRIDATEA.

AMBOTÉ, in *Geography*, a town of Poland, in Samogitia, on the river Wardana, 28 miles north north-east of Mednik.

AMBOTEN, a town of the duchy of Courland, eight leagues south of Goldingen.

AMBOULE, *valley of*, a province of Madagascar, is situated somewhat more northward than 23° south latitude, at the mouth of the river Manampani, which waters the whole valley. In this valley stands a large town of the same name. The country produces abundance of plants and fruits, particularly yams, and the sesame herb, whose seeds yield by expression the oil called menachil; the oxen and cows are very fat, and their flesh excellent. It has also iron mines. Near the town of Amboule is a fountain of hot water, within 20 feet of a small river whose sand is almost burning. The water of this fountain is said to boil an egg hard in two hours, and to be a sovereign remedy against the gout. The inhabitants of the country are employed in different preparations of iron and steel, which they obtain from their own mines, and forge darts and various other instruments, with considerable skill. The voadziri, or chief governor of the country is honoured with the title of great lord, or rabertau; and he is the richest and most powerful of the chiefs in this country. He exercises sovereign authority, and absolute power; but in times of public distress his subjects often assemble in great numbers, seize his person, and threaten him with death, unless they are relieved; and this he does, by issuing orders for distributing provisions among them. The people are represented as licentious, dishonest, and indolent. Mod. Un. Hist. vol. xi. p. 404.

AMBOURNAY, or AMBRONAY, a town of France, in the department of the Ain, and chief place of a canton, in the district of St. Rambert. It is situated in the road from Lyons to Geneva; has a parish church, a hospital, and an abbey of Benedictine monks, founded about the year 800; nine leagues north-east of Lyons,* and one mile and an half north-west of St. Rambert. N. lat. $46^{\circ} 1'$. E. long. $5^{\circ} 16'$.

AMABOUTNOSSI, a small island on the coast of Madagascar, near the bay of Galemboule; and also a river of the same name.

AMBOY. See PERTH-AMBOY.

AMBOYNA, one of the Molucca or spice islands, in the Eastern Indian Ocean, lies in S. lat. $4^{\circ} 25'$, and E. long. $127^{\circ} 25'$. This island is about 60 miles in length from north to south, and is divided on the west side, by a large bay into two parts or peninsulas, one of which, being about 12 leagues long, and two and a half broad, is called Hetou; and the other about five leagues in length, and one and a half broad, is called Leytimor. On the eastern side is another bay, with a bad harbour, where the Portuguese erected their chief fortress Victoria. The town of Amboyna, which is the capital of the island, is neatly built, and stands near the south-west extremity. As the island is subject to frequent earthquakes, the houses generally consist only of one story; but the state-house is a more lofty

edifice of two stories. The face of this island is beautiful; as woody mountains and verdant vales are interspersed with hamlets, and enriched by cultivation. The soil is chiefly a reddish clay, but in the vales it is blackish and sandy. The chief produce of the island, in consequence of the restrictions imposed by the monopolizing avarice and despotism of the Dutch, is cloves; and the clove-tree grows to the height of about 40 or 50 feet, with spreading branches, and long pointed leaves. Some of these trees, that are situated in deep sheltered vales, yield annually thirty pounds weight, and the chief crop is from November to February. The Dutch governor, in order the more effectually to secure this monopoly, makes an annual progress through the spice islands, for the purpose of enforcing the observance of existing treaties, and of preventing the culture of cloves beyond the limits to which it is restricted. About eleven years ago, indeed, nutmegs were allowed to be cultivated in Amboyna, because Banda did not supply a sufficient quantity. The growth of indigo is prohibited, lest the natives should become rich and turbulent: but the sugar and coffee are excellent, and among many delicious fruits, which the island produces, is the mangusteen of Hindostan. Cattle, grain, &c. are imported from Java, and they have a variety of curious woods, but these are chiefly brought from Ceram. The plants of the island have been described by Rumphius. The principal animals are deer, and wild hogs, and among their birds is the cassowary. Amboyna, with its dependencies, contained in 1796, when it was taken by the English, 45,252 inhabitants, of whom 17,813 were protestants; the rest were Mahometans, except a few Chinese, and savages. As this is the next settlement to Batavia, with respect to wealth and importance, the Dutch are tolerably polished; but the natives are still rude and uncultivated. They resemble the other Malays, and when intoxicated with opium they will commit any crime. Their dress is a loose shirt or frock of cotton cloth; the men wear large whiskers, and leave a little hair upon the chin; the women tie the hair in knots; wives are bought of their fathers, and if they prove barren, the marriage is dissolved. Their houses are made of bamboo canes and sago-trees; they sleep on mats; and their weapons are bows and arrows, javelins, scymetars, and targets; and their chiefs are called Rajas.

The islands that are immediately subject to the Dutch governor of Amboyna are ten, comprehending an extent of about five degrees of longitude, that of Amboyna being farthest to the south: these islands are Ceram, Ceram-Lavut, Bouro, Amblau, Manipa between Bouro and Ceram, Kelang, two leagues north-east of Manipa, Bonva farther north, Orna two leagues east of Amboyna, Honimoa, a league east of Orna, and Nousla-Laout, a league south-east of Honimoa. The three last islands are denominated Uli-iffers. The culture of cloves is restricted to these three islands, and Amboyna; but they formerly grew in all the islands, more especially in Ceram. Amboyna is the centre of this rich commerce, and the Dutch have taken care to destroy all the clove-trees in the adjacent islands, and it is said that even in Amboyna, when the harvest is very large, part of the produce is burnt. Soon after the fruit is gathered from the tree, the cloves are collected and dried on hurdles before the fire; and thus their natural and beautiful red colour is changed into a deep purple or rather black, to which their being sprinkled with water probably contributes. The reason assigned for this sprinkling is to prevent the worm from getting into the fruit; but it has been generally supposed that the true reason is to add weight to

the cloves. The cloves are carefully gathered by the hand ; and the produce is very different in different seasons ; but at a medium of seven years it has been estimated at a million of pounds.

Amboyna was first discovered by the Portuguese adventurers Diego d'Abreu and Ferdinand Magellan, about the year 1515, and taken possession of in 1564 ; it was conquered by the Dutch about the year 1605 ; but it was some time before they became complete masters of the whole island. The English were at this time in possession of several factories, that were protected by the Dutch castle, but differences having arisen between the English and Dutch colonists, they were terminated, or rather suspended, by a treaty concluded in 1619 between Great Britain and the States General of the United Provinces. In consequence of this treaty, the English lived in security at Amboyna, and enjoyed one-third part of its cloves, whilst the Dutch were in possession of the other two-thirds. In the year 1622, fresh occasions of discord arose ; these were referred to the council of defence established at Jacatra, in the isle of Java ; and the council, not being able to decide to the satisfaction of all parties, the state of the case was transmitted to Europe to be settled by the East India Companies of both nations, or, in the last resort, by the king of England and the States General. During the deliberations in Java and Europe, the dissension at Amboyna increased, and the Dutch contrived, by a feigned plot, to get possession of the whole island. This plot, as it was pretended, was confessed by two soldiers in the Dutch service, one a Japanese, and the other a Portuguese, who, upon a ground of suspicion, trivial and even imaginary, had been put to the torture ; and, by the testimony of these two unhappy wretches, confirmed by that of an English prisoner who was also sentenced to the rack, the English were accused of being confederates in a conspiracy against the Dutch settlement. Upon this extorted confession, the English were seized ; some of them were imprisoned, and others loaded with irons and confined on board the ships in the harbour : and their books and property were seized. By a process of varied torture of the most savage kind, the governor and fiscal constrained some of the wretched sufferers, after protesting their own innocence and total ignorance of the pretended conspiracy, to acknowledge the truth of charges that were altogether unfounded. Some were racked, drenched with water, and scorched with fire ; others were compelled to swallow such quantities of water as caused their bodies to be distended to more than twice their usual dimensions, and then made to disgorge, by violence, the water which they had swallowed ; and others were consumed by burning them gradually from the soles of the feet upwards. But humanity shudders at the recital of such acts of barbarity. Of those who escaped or survived this savage treatment, ten Englishmen, with one Portuguese, and eleven Japanese were executed, though all of them protested their innocence with their expiring breath. The day following that of the execution was spent, by order of the governor, in public rejoicings and thanksgivings for so signal an escape and deliverance from a pretended conspiracy, and for the iniquitous extirpation of their rival traders. That the conspiracy was a mere pretence on the part of the Dutch for gaining the sole possession of the island, is evident from various concurring circumstances. They had, at this time, a garrison of 300 men in the fort, and several other garrisons in the island ; whilst the number of the English did not amount to 20 persons, who were unprovided with arms and ammunition for effecting the pur-

pose with which they were charged. The English had not one vessel in the harbour, whereas the Dutch had eight ships near the town. When the boxes of the factors were opened, and their papers riddled, no trace of any such conspiracy could be discovered ; and, besides, the sufferers on this occasion persisted in avowing their innocence. The English factory was withdrawn from the island ; and the Dutch governor retained the effects that had been seized, amounting, as some say, to the value of 400,000 pounds. When the English council at Jacatra demanded justice, the conduct of the governor was vindicated, and his proceedings were declared to be just and indispensably necessary ; and from all the subsequent proceedings of the Dutch, it sufficiently appears, that the plot was of their own invention, and that their object was to monopolize the whole trade of the spice islands ; for, after the catastrophe at Amboyna, they seized all the English factories in these islands, and dispossessed the English, to their incredible loss and damage.

When the news of this transaction reached England, and sufficient proof was adduced of the treachery and cruelty of the Dutch, it was natural to expect that reparation would be demanded and obtained. If, indeed, king James I. had acted with becoming spirit, and made proper representations to the States General, justice would probably have been done ; for such atrocious villainies could not have been abetted by any civil community. But James submitted to the national injury even without requiring satisfaction, and contented himself with merely telling the Dutch ambassador, " That he never heard nor read a more cruel or impious act, than that of Amboyna." But he adds, " I forgive them, and I hope God will, but my son's son shall revenge this blood, and punish this horrid massacre." Charles I. finding remonstrances, letters of request, and memorials ineffectual, was preparing to increase his shipping, and to call the Dutch to an account ; but he was prevented from accomplishing his design by the civil war which ensued. Cromwell, in this instance, avenged the wrongs of the British nation ; for among the conditions on which he gave peace to the Dutch, in April 1654, it was inserted, " That they should deliver up the island of Polorone in the East Indies," which they had taken from the English in the time of king James, and where they had acted a tragedy similar to that at Amboyna, " into the hands of the English East India Company ; and pay a good sum of money (300,000*l.*) for the old barbarous violence exercised for many years since at Amboyna, for which the two last kings could never obtain satisfaction and reparation." The Dutch, however, have long retained unmolested possession of this island.— But both Amboyna and Banda were taken without resistance in February and March, 1796, by the English admiral Rainier ; however they have been restored to their Batavian masters by the treaty with France in the year 1801. *Mod. Un. Hist.* vol. viii. p. 288—301. vol. ix. p. 70. *Asiatic Register* for 1800. p. 200.

AMBRA, or AMBRO, *Cape*, in *Geography*, sometimes called Cape Natal, is the north point of Madagascar island. S. lat. 12° 15'. E. long. 49° 10'.

AMBRACIA, in *Ancient Geography*, was one of the most considerable cities of Epirus, and situated in the territory of Theprotia, near the mouth of the river Arachthus or Arethon, and the gulf to which it gave its name. It was built, according to Polybius, (lib. iv.) by Ambrax, son of Theprotus ; probably when the territory of his father had been ravaged by the Dryopes, and afterwards by Hercules ; and thus the origin of the Ambracians is traced to an æra about 50 years before the last war of Troy. *Strabo*

(lib. vii.) says, that Ambracia was the work of Tolgus, the son or the brother of Cypselus, who was tyrant of Corinth, and lived about 620 years before the Christian æra. A colony from Corinth under the conduct of Cypselus arrived in Epirus, and delivered the Ambracians from the tyranny of Phalæcus, and reduced them into subjection to himself; and Aristotle informs us, that they drove away Periander the son of Cypselus, and recovered their ancient liberty, for it was originally a free city. It was afterwards reduced by the Æacidæ kings of Epirus, who chose it for the place of their residence. In process of time, the Ætoliæ made themselves masters of it, and held it till the year before Christ 189, when they were subdued by the Romans, who found at Ambracia a great number of pictures and statues belonging to the magnificent palace of Pyrrhus.

At this time it was a place of great strength, defended on one side by the river Arachthus, and on the other by steep and craggy hills; and it was surrounded by a high and thick wall, about three miles in circuit. It was vigorously besieged by the Romans and their allies, the Epirots, under the conduct of the Roman consul Marcus Fulvius, and as bravely defended by the Ætolian garrison. It was at length compelled to capitulate; and Fulvius was presented with a crown of gold, which is said to have weighed 150 pounds. Paulus Æmilius also deprived its inhabitants of their privileges and effects. Livy (lib. xxviii. c. 4.) has given a particular description of Ambracia. It is now reduced to a small place of Turkey in Europe, called *Ambrachia*, on the lower part of the gulf of Larta in the southern Albania.

AMBRACIUS SINUS, the gulf of Ambracia, now the gulf of Larta, was situated between the country of the Molossi in Epirus, to the north, and Acarnania to the south, and communicated with the Ionian Sea, by a strait called that of Astium.

AMBRARIA, in *Botany*. See ANTHOSPERMUM.

AMBRAS, or OMBRAS, in *Geography*, a town of Germany, in the county of Tyrol, four miles east of Innspruck.

AMBRAVETTY, a river of Hindostan, which runs into the Cauvery, eight miles east-north-east of Carroor.

AMBREADA, thus they call the false or factitious amber, which the Europeans use in their trade with the Negroes on the coast of Africa, and particularly on the river Senegal. There are some large and red pieces of it, a thousand of which making twenty ropes of strings weigh three pounds. There are others small, and also red, which weigh but two pounds and a half.

AMBRES, in *Geography*, a small town of France, situate on an eminence, in the department of Tarn and diocese of Castres.

AMBRESBURY, or AMESBURY, a town of England, in the county of Wilts, pleasantly situate in a small valley on the banks of the Upper Avon, and consisting of two streets. The town is indifferently built, and has all the appearance of decay. Whether it derived its name from Ambres' consecrated stone, as Poland suggests—from its neighbouring monument, Stonehenge, being erected by Aurelianus Ambrosius, who is supposed to have been slain near this place—or from Ambri, a British monk, who founded a monastery in this place—it is not easy to determine. In former times it was a place of importance. Some have supposed that, when the Britons resorted to the general *Gorsedd* at Stonehenge, Ambresbury might have been used as a resting-place, or place of Assembly, and that Ambri founded a monastery here for the benefit of future devotees. At this town a nunnery was founded by Elfrida, widow of king Edgar, in expiation, as it has been said, of the atrocious and unpro-

voked murder of her son-in-law, Edward the Martyr, at Corse Castle. Queen Eleanor, widow of Henry III. retired to Ambresbury, took the veil, and died a nun in 1291; and her grand-daughter Mary, the sixth daughter of Edward I. followed her example, and in company with 13 children of the English nobility resorted hither, and took the veil in 1285. The estates belonging to this runnery, after its dissolution, and in process of time, became the property of the Queensbury family. To the west of the river Avon is a camp, occupying the whole summit of a hill, which has been generally attributed to Vespasian; but an ingenious tourist suggests that it is the camp, or town, often mentioned in the old British writings under the name of Caer Caradoc. It is constructed in the shape of an oblong square, with a very deep vallum towards the west; and to the east it overlooks the town. The road passing from Ambresbury to Warminster is cut through the rampart of this fortification. The market of this town is on Friday: and it is distant from London 78 miles.

AMBRI, in *Ancient Geography*, a name given by Justin to a people of India, who lived upon the banks of the river Acesines. The Ambri are, according to M. d'Anville, the same with the Oxydraci.

AMBRIÈRES, in *Geography*, a town of France, in the department of Mayenne, and chief place of a canton in the district of Mayenne, two leagues north of Mayenne. The place contains 2231, and the canton 14,077, inhabitants; the territory includes 162½ kilometres, and 10 communes. N. lat. 48° 24'. W. long. 0° 44'.

AMBRIZ, or AMBRISI, a river of Africa, in the kingdom of Congo, which springs from a lake in the eastern mountains of Tenda, and runs westward into the ocean between the mouths of the Lahunda and Loze. It runs by the town of St. Salvador. Its course is rapid; its channel deep, and large; and its waters muddy. S. lat. 7° 10'. E. long. 13° 25'.

AMBROCHOS, in *Ancient Geography*, a country of Africa, in Marmarica, according to Ptolemy.

AMBRODAX, a town or borough, placed by Ptolemy in Parthia.

AMBROGI, DOMINICO, in *Biography*, an Italian artist, flourished in 1653, and painted history and landscape. He was the disciple of Brizio, and, as an engraver, he is said to have executed some prints on wood in Chiaro-Scuro. One of his engravings is "a woman seated in a triumphal car, holding two flambeaux and a serpent, conducted by Neptune." Strutt.

AMBROMA, in *Botany*. See AEROMA.

AMBRONES, in *Ancient Geography*, a people of Gaul, known in the Cimbric war. They were probably the ancestors of the Ligurians, and had possessions to the north and south of the Po. They invaded the Roman territories, as Plutarch (in Marco) informs us, in conjunction with the Cimbri and Teutones, and were defeated with great slaughter by Marius, about 102 years before Christ. Their wives, who were waiting the issue of the engagement, seeing their husbands flying and the Romans pursuing, armed themselves with axes, and, gnashing their teeth, fell furiously on the pursuers and the pursued, without distinction. Heedless of their own defence, they threw themselves upon the combatants, seized their swords, and endeavoured to snatch away their bucklers; but when their rage was exhausted, they offered to capitulate on this single condition, that their honour should be preserved. When this condition was denied, these unfortunate women, being reduced to despair, first killed their children, and afterwards themselves, not one of so great a multitude remaining alive.

AMBROOK Island, in *Geography*, a small island of the Baltic, under Cēfel, seven leagues south-east from Demefnefs, and eight leagues north-west from Round island. See **ARENSBURG**.

AMBROSA ISLAND, is situated on the coast of Chili, in South America, on the Pacific Ocean. S. lat. 26° 40'. W. long. 82° 35'.

AMBROSE, of Alexandria, in *Biography*, the friend of Origen, flourished about the beginning of the third century. He was descended from a good family, affluent in his circumstances, and distinguished by his intellectual accomplishments and Christian virtues. According to Jerom he was a Marcionite, but Eusebius calls him a Valentinian; and he was convinced of his errors by Origen, about the year 212, in consequence of which he became a deacon of the church, either at Alexandria, or at Casarea, where Proctoetus was presbyter. To both these persons Origen inscribed his book on Martyrdom, and he dedicated to Ambrose many of his other works, which were published at his desire and charge. Origen and Ambrose lived on terms of the most intimate friendship; they were alike indefatigable in their application; and Ambrose assisted Origen by procuring him notaries, and amanuenses, who copied his works, and to whom he occasionally dictated. Origen represents his friend, as a person eminent for his piety and for his diligent study of the Scriptures. Although Jerom reports that Ambrose was blamed by many for making no provision at his death for Origen, who was not only poor but likewise far advanced in years, Tillemont suggests this apology for him, that he knew his friend's mind, and that Origen chose to be poor, and to live in a state of dependence upon Providence. Some say that Ambrose died, with his friend Proctoetus, as a martyr, in the persecution under Maximin, about the year 236; but the dedication of Origen's eight books against Celsus shews, that though he died before Origen, yet he lived to the year 250, or near it. Ambrose had a wife named Marcella, by whom he had several children; and she is commended by Origen as a true Christian and a faithful wife. Lardner's Works, vol. ii. p. 447. Cave's H. L. vol. i. p. 122.

AMBROSE, ST. bishop of Milan, descended from a noble family of Romans, was born in Gaul, as some say, in the year 333, but according to others, in 340. His father, at the time of his birth, was prætorian præfect of Gaul, and resided at Arles, the capital of Gallia Narbonensis. The son, after passing through the studies of a liberal education, attained, by the regular gradation of civil honours, the station of Consular of Liguria, a province which included the imperial residence of Milan. In the exercise of this government, he manifested a degree of wisdom and equity which obtained general esteem. At the age of 34, and before he had received the sacrament of baptism, a circumstance occurred which served suddenly to transform him from a civil magistrate to an ecclesiastical governor. His mother, and his sister Marcellina, both women of distinguished piety, had trained him up not only in habits of virtue, but with an early bias towards the religious system of the Catholic church. Thus previously disposed, he was prepared for availing himself of a dispute concerning the succession in the episcopal see of Milan, that had been produced by the death of Auxentius, who had been the leader of the Arian party in the west. In a tumultuous contest between the Arians and Catholics for supplying the vacancy, Ambrose presented himself to the assembly, and by an eloquent speech recommended a peaceable election. At the close of his address, a child exclaimed—"Ambrose is bishop!" The voice of the infant was regarded by the su-

perstitious multitude as a miraculous suggestion, though others might more naturally have inferred that it was the result of contrivance on the part of Ambrose or his friends. But the expedient, however, was effectual, and Ambrose was immediately elected by acclamation. The civil magistrate expressed great reluctance in complying with the public choice, and resorted to a variety of singular expedients to divert the multitude from persisting in the appointment. The emperor Valentinian was at length solicited to confirm and enforce the election; and as the talents and character of the bishop elect were well known to him, he very readily interposed. Ambrose submitted to his authoritative injunction, and, after baptism, was ordained to the episcopal office. The ecclesiastical historians, acquitting the bishop and his friends of art and intrigue, and considering his opposition as real, represent the choice as "a divine election," and "the peculiar work of God." But the traces of human contrivance were much more discernible in the whole conduct of this business than those of a divine operation; and it will not be easy to exculpate the bishop himself from all concern in the plot.

Unprepared as Ambrose was, by the habits and occupations of his former life, for the new office that was devolved upon him, the active force of his genius soon qualified him to exercise, with zeal and prudence, the duties of his ecclesiastical jurisdiction. With this view, he bestowed his money upon the poor, settled his lands upon the church, with the reserve of a life-interest in favour of his sister, and committed the care of his house and family to his brother. Thus disengaged from secular concerns, he commenced a course of theological study with Simplician, presbyter of Rome, and devoted himself to ecclesiastical business. In 377 he was obliged, by the irruption of the Goths and other northern barbarians, to retire to Illyricum; but the invaders were soon defeated by the Roman emperor, and Ambrose and the other exiles were allowed to return home. The prevalence of the Arian doctrine furnished ample occasions for the zealous exertions of Ambrose. Having written a treatise concerning the Trinity, for the establishment of the faith of Gratian, he was less successful in his attempts for converting the younger Valentinian, Gratian's colleague in the empire. The instructions of his mother Justina, who was an avowed Arian, counteracted the arguments of the orthodox prelate. Ambrose, by his influence with Gratian, prevented the assembling of a general council, which he had agreed to convene; and probably fearing that the sentiments of the whole body of Christian bishops would be favourable to Arianism, he wished the decision of the dispute to be referred to an assembly of the western clergy. Here the two "rotten heretics," as he called the two Arian bishops, Palladius and Secundianus, might be easily silenced. Accordingly a synod, consisting of 32 bishops, was held at Aquileia in 381, and Ambrose presided. Palladius very properly demurred against the decision of such a partial assembly, and it terminated with Ambrose's ejection of the two obnoxious bishops from the episcopal office. The orthodox prelate was no less zealous in his opposition to the followers of the ancient pagan religion than in his efforts for suppressing Arianism. The leader of the pagans was Symmachus, a wealthy and eloquent senator; and in the year 384 he was employed to prepare and present a petition for restoring the Altar of Victory to its ancient place in the hall of the senate; and the public funds for the support of the seven vestal virgins, and their religious ceremonies. To the talents of Symmachus were opposed those of Ambrose, who addressed a letter to Valentinian, in reply to the pleas of this petition; and he concludes with observing, that it

was a debt which Christian princes owed to their faith, not to give countenance to heathen rites. Ambrose prevailed, and the petition of Symmachus was rejected.

The Arians were at this time a more formidable body to the intolerant bishop than the pagans. They were supported by the young emperor Valentinian and his mother Justina; and they concurred in demanding from the bishop the use of two churches, one in the city and the other in the suburbs of Milan. The bishop peremptorily refused; alleging, that though the palaces of the earth might belong to Cæsar, the churches were the houses of God; and that, within the limits of his diocese, he was the lawful successor of the apostles, and was the only minister of God. The privileges of Christianity, temporal as well as spiritual, were confined to the true believers; and Ambrose was satisfied in his own mind that his own theological opinions were the standard of truth and orthodoxy. He therefore declared, that it was his firm purpose to die a martyr rather than to yield to the imperious sacrilege, by delivering up the temple of the Lord into the hands of heretics. Justina resented the refusal as an act of disloyalty and rebellion; and as she desired to perform her public devotions on the approaching festival of Easter (A. D. 385), Ambrose was ordered to appear before the council. He obeyed, accompanied by a tumultuous crowd of people; and the affrighted ministers of Valentinian, instead of pronouncing a sentence of exile on the bishop, humbly requested that he would interpose his authority to protect the person of the emperor, and to restore the tranquillity of the capital. Notwithstanding the tumult and clamours of the people, the bishop persisted in his refusal, and the court proceeded to the exercise of power. Orders were issued to the officers of the household to prepare, first, the Portian church, and afterwards the Basilica, for the immediate reception of the emperor and his mother. But it was found necessary to defend them by a strong guard from the insults of the people. The Arian ecclesiastics, who ventured to shew themselves in the streets, were exposed to the most imminent danger of their lives; and Ambrose had enjoyed the merit and reputation of rescuing his personal enemies from the hands of the enraged multitude; but while he laboured to restrain the effects of their zeal, the pathetic vehemence of his sermons continually inflamed the angry and seditious temper of the people of Milan. The characters of Eve, of the wife of Job, of Jezabel, of Herodias, were indecently applied to the mother of the emperor; and her desire to obtain a church for the Arians was compared to the most cruel persecutions which Christianity had endured under the reign of Paganism. The prelate was supported, not only by the populace, but by the most respectable citizens; and the court, finding violent measures to be ineffectual, had recourse to the milder method of persuasion, and solicited Ambrose to restore peace to his country by a timely compliance with the will of his sovereign. He resolutely replied: "if you demand my patrimony, which is devoted to the poor; take it; if you demand my person, I am ready to submit; carry me to prison, or to death, I will not resist; but I will never betray the church of Christ. I will not call upon the people to succour me; I will die at the foot of the altar rather than desert it. The tumult of the people I will not encourage; but God alone can appease." In his sermons he asserted the exclusive power of the catholic bishops over the churches, and expressly denied the right of the emperor even to the use of a church for himself. Valentinian and his court were not disposed to submit to this ecclesiastical tyranny. An attempt was made for seizing the Basilica; and a body of Goths, urged by their Arian prin-

ciples and ferocious spirit, advanced towards the church. On the threshold they were met by the bishop, who, thundering out a threat of excommunication, asked them, by what authority they presumed to invade the house of God? Superstitious terror held the barbarians in suspense: and the empress was persuaded to leave the catholics in possession of all the churches of Milan, and to dissemble, till a more convenient season, her intentions of revenge. The mother of Valentinian, however, could never forgive the triumph of Ambrose; and the royal youth uttered a passionate exclamation, that his own servants were ready to betray him into the hands of an insolent priest. This temporary triumph of Ambrose was succeeded by an edict of general toleration in favour of those who professed Arianism, and by a sentence of easy and honourable banishment, enjoining the prelate to leave Milan, and to chuse the place of his exile as well as the number of his associates. This sentence was resisted by the bishop, and his refusal to obey it was supported by the unanimous consent of his faithful people, who guarded his person and his palace. He devised various expedients for securing and increasing their attachment. By his bounty to the poor he formed a train of indigent persons; by introducing into Italy from the east the alternate or responsory psalmody, he aided the public devotion; and by alluding to existing characters and circumstances in his discourses and commentaries upon the scriptures, he increased the popularity which was annexed by the superstition of the times to his religious and episcopal character. Pious frauds and pretended miracles served also to augment the esteem and veneration with which he was regarded by the credulous multitude. The contending prelate was fortunately directed by a dream to the discovery of the remains of two martyrs, Gervasius and Protasius, which had been under the pavement of the church for 300 years. Two perfect skeletons were found, with the heads separated from the bodies, and a plentiful effusion of blood. These holy relics were presented with solemn pomp, to the admiration of the people; and many miracles were wrought on possessed and diseased persons who touched them, and one recovered his sight by touching the bier on which the bodies were deposited with his handkerchief. Ambrose appealed to these miracles in his sermons, and the people believed them to be real. The incredulity of the Arians, and the decision of Justina and her court, were reproached and condemned; and the miracles were attested not only by Ambrose himself, but by Augustine, and Paulinus, who were then resident in Milan. Dr. Cave, relying on these testimonies, expresses his firm belief of their reality, and says, "that God suffered them to be wrought, at this time, on purpose to confront the Arian impieties." Such were the talents of Ambrose and the general estimation in which his character was held, that his assistance was repeatedly solicited in times of public exigence and danger; and it ought to be recorded to his honour, that he surrendered his private resentment to the public good, and served his country with fidelity and ardour. After the assassination of Gratian in 383, Ambrose was deputed by Valentinian on an embassy to Maximus, and contributed by his authority and eloquence to check the ambition of the tyrant, to dissuade him from passing the Alps, and thus to protect the peace of Italy. In 387 he undertook the same office; and if the council of Milan had availed themselves of the information given them by Ambrose on his return from an unsuccessful embassy, they might have been guarded against the perfidy of Maximus, and Italy might possibly have escaped the desolation which soon followed. The conqueror, however, entered Milan in triumph; Justina and her son Valentinian fled precipitately

capitately from the country, and put themselves under the protection of Theodosius, the emperor of the east, in the port of Thessalonica; but Ambrose remained resolutely at his post, and during the depredations of a victorious army, humanly ordered the church-plate to be sold, and the money to be distributed among the unfortunate sufferers. After Theodosius had restored Valentinian to the kingdom in 388, he received information that the monks and populace of Callinicum, an obscure town on the frontier of Persia, had tumultuously burnt a Jewish synagogue. The magistrate of the province had ordered the bishop, by whose instigation the synagogue had been burnt, either to rebuild it or to repay the damage; and his order was confirmed by Theodosius. Ambrose remonstrated; representing the toleration of the Jewish, as the persecution of the Christian religion; boldly declaring, that he himself, and every true believer, would eagerly dispute with the bishop of Callinicum the merit of the deed, and the crown of martyrdom; and lamenting, in the most pathetic terms, that the execution of the sentence would be fatal both to the fame and salvation of Theodosius. Besides this private admonition, he publicly addressed the emperor from his pulpit, nor would he consent to offer the oblation of the altar, till he had obtained from Theodosius a solemn and positive declaration, which secured the impunity of the bishop and monks of Callinicum. After an interval of five years, and at a distance from Ambrose, his spiritual guide, Theodosius, tolerated the Jews, and condemned the destruction of their synagogue. How different were the feelings and conduct of Theodosius and Ambrose on another occasion! The tolerant emperor, incensed by the conduct of the populace at Thessalonica, who had murdered Botheric, and several of the principal officers of his army, and irritated by the suggellions of his minister Rufinus, issued a general order for the massacre of the inhabitants. The promiscuous carnage continued three hours, without discrimination of strangers or natives, of age or sex, of innocence or guilt; the most moderate accounts state the number of the slain at 7000; and it is affirmed by some writers, that more than 15000 victims were sacrificed to the manes of Botheric. "A foreign merchant, who had probably no concern in his murder, offered his own life, and all his wealth, to supply the place of one of his two sons; but while the father hesitated with equal tenderness, while he was doubtful to chuse, and unwilling to condemn, the soldiers determined his suspense, by plunging their daggers at the same moment into the breasts of the defenceless youths." Ambrose, on the other hand, though unforbearing and intolerant on occasion of the slightest religious differences, heard the relation of the massacre with horror and anguish; reproached Theodosius with the enormity of his crime; admonished him not to receive the holy eucharist with hands that were still polluted with the blood of an innocent people; and stopped him in his approach to the church of Milan, declaring to his sovereign in the tone and language of an ambassador from heaven, that private contrition was not sufficient to atone for a public fault, or to appease the justice of the offended deity. When Theodosius repented, that David, the man after God's own heart, had been guilty both of murder and adultery, the undaunted Ambrose rejoined, "you have imitated David in his crime; imitate then his repentance." After a delay of eight months, Theodosius was absolved and restored to the privilege of communion; but in the interval he appeared, stripped of the ensigns of royalty, in a mournful and suppliant posture, in the church of Milan, soliciting the pardon of his sins, and he signed an edict enjoining a space of 30 days before any sentence of death or

confiscation, and its execution. After the assassination of Valentinian, A.D. 392, the empire of the West was usurped by the ignoble Eugenius; but Ambrose, with a laudable resolution, refused to enter into alliance with the usurper, and withdrew from Milan; but when the empire was regained by Theodosius, he generously interceded with the emperor for the pardon of the adherents of Eugenius. Ambrose did not long survive Theodosius, whose funeral obsequies he performed; but after a short illness, in which his mind was perfectly composed, and which afforded him an opportunity of declaring to his friends, "that he had not conducted himself so among them as to be either ashamed to live or afraid to die," he departed this life in April, A. D. 397.

Many fabulous particulars are related concerning Ambrose, which are not worth minutely recording, and which the allowable scepticism of the present age will not admit. Such are the stories of the swarm of bees that settled upon his face, when he was an infant in the cradle; of the paralytic woman, who was instantaneously cured, when he was praying by her bed-side; of the two Arians, who having affronted him, were instantly thrown from their horses and killed; of the globe of fire, which covered his head in his last illness, and insinuating itself into his mouth, left his face white as snow; and of the voice, which proclaimed in the hearing of a bishop, just as he was expiring, "arise, and hasten to him, for he is departing." These tales are gravely related by Paulinus, Dr. Cave, and others; but they will claim little credit. Of his general character, it will be sufficient to say, that his most partial advocates cannot acquit him of dishonest artifice, arrogance, and intolerance; and that his most prejudiced enemies cannot deny him the praise of firmness in avowing his sentiments, assiduity in the performance of his ecclesiastical offices, liberality to the poor, generosity in his conduct towards his enemies, and zeal in the cause of humanity. With energy of mind he combined a great degree of tenderness and sympathy, and in his general conduct he was virtuous and amiable, except on occasions when he was misled by professional ambition or religious bigotry. As a writer, many of his sentiments will now be thought absurd, trivial, or ludicrous; his style is concise and affected, and somewhat resembling that of Seneca. "Ambrose," says Mr. Gibbon, "could act better than he could write; his compositions are destitute of taste, or genius; without the spirit of Tertullian, the copious elegance of Lactantius, the lively wit of Jerom, or the grave energy of Augustin." The writings of Ambrose are numerous; but many of them are little more than transcripts from the Greek fathers, particularly Origen. Their chief object is to maintain and establish the faith and discipline of the Catholic church; or recommend perpetual celibacy as the summit of Christian perfection. One of the most valuable is his book "De Officiis," intended to explain the duties of Christian ministers, formed on the model of Cicero's "Offices." In his "Commentaries on the Scriptures," he chiefly follows the absurd method of allegorical interpretation; his "Epistles" throw much light on the history of his life and times. The most accurate and complete edition of his works is that of the Benedictine Monks, in two volumes, folio, in 1682; reprinted in 1690. Ambrose appears to have received all the books of the New Testament, which we receive, without any other. For in his works he does not pay any particular regard to the writings of Barnabas, Clement, or Ignatius, or to the recognitions, or constitutions. Hence we may reasonably conclude, that these writings were not esteemed of authority by himself,

himself, or other Christians at that time. Cave's H. L. vol. i. p. 261. Gibbon's Hist. vol. v. p. 38—78. Lardner's Works, vol. iv. p. 447.

AMBROSE, a monk of Camalduli, was born at Portico, near Florence, studied Greek under Emanuel Chrysoloras, at Venice, and entered into the order of Camalduli at the age of 14 years. He was made general of the order in 1431, after having lived in it 30 years; at the council of Basil, to which he was deputed by Eugenius IV., he defended the authority of the papal see; at the councils of Ferrara and Florence he displayed equal ardour against the Greeks; and at Florence he was employed to draw up the articles of union between the Latin and Greek churches. The Greek oration, which he addressed at Ferrara, in 1437, to John Paleologus, emperor of Constantinople, was much applauded. He was much esteemed by Cosmo de Medicis, who had his letters collected into a volume, that has been kept in the library at Florence; and by Paul Jovius, he is represented as a person who united piety with good humour, and who was so free from envy, and from a spirit of contradiction, that when he endeavoured to reconcile Poggius with Laurentius Valla, he declared to them, that they acted neither as true men of letters nor like Christians, since they disgraced the dignity of the sciences by their satirical writings. Ambrose died, on his return from the council of Florence, in the year 1439, and his remains were deposited in the oratory of Camalduli, without any epitaph or ornament. He collected a very large library in the convent of St. Mary de Angelis, where he lived; and left behind him several translations of Greek authors; such as those of Dionysius Areopagita de Cælesti Hierarchy, Manuel Calecas against the errors of the Greeks, Palladius's Life of Chrysoſtom, Æneas of Gaza's Theophrastus, S. Ephrem's Sermons, Diogenes Laertius's Lives, &c. He also wrote, "Hodæporicon," or a Journey through Italy, in 1431, to visit several monasteries and nunneries of his order, and to correct their abuses; published in 4to. in Florence, in 1681; and "Letters," above-mentioned, which have been inserted in the third volume of Martenne's and Durand's "Veterum Scriptorum et Monumentorum Collectio." Paris, 1724, fol. some of which contain hints concerning the lives and characters of the learned men of his time. Gen. Dict. Cave's H. L. vol. ii. p. 155.

AMBROSE, ISAAC, an English Presbyterian divine, was the son of a clergyman, and descended from the Ambroses, of Ambrose-hall, in Lancashire. In 1621, he was admitted into Brazen-nose college, in Oxford, where he took a degree of bachelor of arts; and he afterwards took holy orders, and officiated in the church of England, but he obtained no preferment. In 1641, he left the established church, joined the Presbyterian party, took the covenant, and preached first at Garitang, and afterwards at Preston, in his native county. His zeal against the established clergy recommended him to the office of assilant to the commissioners for ejecting such as were called scandalous and ignorant ministers and school-masters. It was his custom to retire for a month every year into a hut in the wood for the advantage of solitude and religious meditation. He anticipated his death for some time before it occurred, and took leave of all his friends at their own houses. He then died suddenly, as it is supposed, of an apoplexy, in 1634, at the age of 72. His works, written in the truly puritanical style and spirit, are numerous. They are entitled "Prima, Media, et Ultima; or Regeneration, Sanctification, and Meditations of Man's Misery and God's Mercy, &c." 1682 and 1689, Lond. "Looking upon Jesus," 1658, 4to. Lond. "War

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with devils, ministrations of and communication with angels," printed with the former. Biog. Brit.

AMBROSE, ST. *Gulf or Haven*, in *Geography*, lies on the west coast of Africa, south-south east from Cape Negro, S. lat 20° 25'. E. long. 13°.

AMBROSE.—*St. Ambrose in the Wood*, by the Italians called *al nemo*, is an order of religious, confirmed in 1431, under the rule of St. Augustine.

The monks of *St. Ambrose al nemo* wear the image of the saint engraven on a little plate, and make use of the Ambrosian office.

In the province of Berry, in France, the titled *fathers of St. Ambrose* is also given to the canons regular of St. Augustine, because their abbey at Bourges is dedicated to St. Ambrose de Cahors.

AMBROSIA, in the *Heathen Theology*, &c. a delicious kind of food, on which the gods were supposed to feed.

The word is compounded of the primitive particle *α*, and *βροτος*, *mortal*; because it rendered those who fed on it immortal, or because it was the food of the immortals.

Lucian, rallying the poetical gods, tells us, that *ambrosia* and *nectar*, of which one is the meat, and the other the drink of the gods, were not so excellent as the poets describe them; since these deities would leave them for blood and fat, which they come to suck from the altars like flies.

But though the ambrosia is commonly represented as the solid food of the gods, by way of contradistinction from the fluid, which was called *nectar*; yet the appellations are sometimes inverted, and the name ambrosia given to the drink of the deities, as that of *nectar* to the meat.

Wedelius has a dissertation on ambrosia and nectar, wherein he shews, that the term is sometimes used to denote honey, sometimes wine, sometimes perfumes, and particularly ambergris; sometimes the method and ingredients for embalming and preserving dead bodies from putrefaction, and sometimes also for a state of unchangeableness or immortality.

AMBROSIA is also a splendid kind of title given by some physicians to certain alexipharmic compositions of extraordinary virtue. In this sense *ambrosia*, *αμβροσια*, amounts to much the same with *αθανασια*, *athanasia*, as being supposed to conduce to immortality. This name was particularly given to a famous antidote of Philip of Macedon against all poisons, bites, and stings of venomous creatures, as well as many internal diseases.

AMBROSIA is also used for a pure spirituous kind of medicine, artfully extracted from the gross elementary parts of a body, and which being administered in the smallest dose is of considerable virtue, and may be taken without disgust or inconvenience. In this sense *ambrosia* amounts to much the same with what we otherwise call *QUINTESSENCE*. Nic. Abr. Frambesa has a treatise on the preparation of these *ambrosie*. Ambrosiopa, Ludg. Bat. 1628, 12mo. Francof. 1629, 4to.

AMBROSIA is also used by some of the *Ancient Writers* to express what they judged to be the food of the BEES.

This substance is by some taken to be a gross or solid honey, and is contradistinguished from the liquid or purer sort, which is denominated *nectar*.

The ambrosia will not keep, and, if not speedily spent, corrupts and turns sour, making what is sometimes called *coom*, or *sopping*, or, after the Greeks, *σανδαράκ*; highly offensive and pernicious to the hive. See *PAIN des Abeilles*.

AMBROSIA, in *Antiquity*, denotes a feast celebrated in Ionia, and in almost all the countries of Greece, in honour of Bacchus, at the time of vintage.

The ambrosia were also denominated *εβρα* and *λενα*.

They were held in the month called Lenæon, consecrated to Bacchus.

AMBROSIA, in *Mythology*, the daughter of Atlas, was one of the HYADES.

AMBROSIA, formed of α and $\beta\epsilon\sigma\omega\varsigma$, and denoting *immortal food*, in *Botany*, a genus of the *monoecia pentandria* (*pentandria monogynia*, Gmelin) class and order; of the natural order of *compositæ nucamentaceæ*, and *corymbifera* of Jussieu: its characters are as follow. Male flowers compound: the *calyx* is a common, one-leaved, flat perianthium, of the same length with the stamens; the *corolla* compound, uniform, tubulous, equal, and hemispherical; the proper, one-petalled, tubulous, funnel-shaped, erect, quinquefid (trifid, Linn.); the *stamina* have very small filaments, anthers erect, parallel, and acuminate; the *pyllium* has a filiform style, of the length of the stamens, stigma orbiculate and membranaceous; the *receptacle* common, scarcely any, naked. Female flowers, below the males, doubled; the *calyx* is a one-leaved, acuminate, entire, permanent perianthium, the belly five-toothed, and one-flowered: no *corolla*; the *pyllium* is a germ ovate, in the bottom of the calyx, style filiform, of the same length with the calyx, stigmas two, setaceous, long, and divaricate; the *pericarpium* a subovate nut, formed from the calyx hardened, one-celled, not opening, crowned with the five acuminate teeth of the calyx; the *seed* single and roundish. There are five species, *viz.* 1. *A. trifida*, trifid-leaved A. "with three-lobed, serrate leaves." There is a variety, β . *A. gigantea* inodora, fol. asperis trifidis. Ray. Hist. This species is a common annual weed in North America, growing often eight or ten feet high, and in a rich moist soil, spreading out into many branches; the flowers are not more conspicuous than those of hemp: cultivated in 1609 by Mr. C. Bobart. The fort common in gardens has three-lobed leaves; but the larger variety β . has the lower leaves five-lobed. 2. *A. elatior*, tall A. "with leaves pinnatifid, racemes panicle, terminal, and smooth." This is an annual, herbaceous plant, from two to three feet in height, upright, and branched; male flowers more numerous, approximating and nodding; the female flowers fewer, sessile, from three to six, aggregate: a native of Jamaica, in barren, sandy, rocky situations, by river sides, in the southern part of the island; flowers there from February to June, with us in July and August; cultivated in Kew garden by Mr. S. Doody, in 1696. It has the appearance and taste of wormwood; and the seeds have been imported from Virginia and Carolina, as well as from the West India islands. 3. *A. artemisifolia*, mugwort-leaved A. "with bipinnatifid leaves, the first leaves at the origin of the branches quite entire;" differs from the second in having the spikes of the flowers axillary; the racemes are lateral, and not terminal as in the preceding species; the primary stem about a foot high, is more diffused, and the branches four feet long: a native of North America; cultivated, in 1759, by Mr. Miller. 4. *A. maritima*, sea A. "with multifold leaves, spikes solitary, hairy and subsessile;" rises about two feet high: the leaves, when handled, emit a strong odour; the spikes of the flowers are axillary; the spike does not sit on a long peduncle as in the preceding species: grows naturally in Cappadocia, Tuscany, and the county of Nice, on sandy shores; cultivated in Kew garden in 1570. 5. *A. arborescens*, tree A. "with pinnatifid, hirsute leaves, racemes solitary and terminating, and stem shrubby:" a native of Peru, grows to the height of 10 or 12 feet; the spikes and flowers are produced at the extremities of the branches, and the female flowers grow in small, separate clusters. The fifth species of Gmelin's Linnæus is *A. simplicifolia*, with simple, lanceolated leaves, and axillary, subsolitary leaves. Walt. Flor. Carol. p. 231.

Culture.—The seeds of the first species, sown in Spring, will remain till the following Spring; and when the plants come up, they may be transplanted into a moist, rich soil, at the distance every way of four or five feet. If the seeds ripen, and are suffered to scatter, they will vegetate the following Spring, provided that the ground be not disturbed; or if the seeds be sown in Autumn, the plants will come up in the Spring, and may be treated as above. The second sort will thrive in the open air in England; but in order to obtain the seeds every year, they should be sown on a moderate hot-bed in March; and when the plants are two inches high, they must be transplanted into another moderate hot-bed, allowing to each plant a square distance of three or four inches, watering and shading them till they have taken root, and afterwards exposing them to the air in warm weather, and well watering them: when the plants are pretty strong, they should be taken up with balls of earth to their roots, and planted in large pots filled with light earth: towards the latter end of May they should be placed abroad with other hardy, annual plants; they will flower in July, and their seeds will ripen in September. The third sort may be cultivated in the same manner. The seeds of the fourth sort should be sown in a warm border in Autumn; and when the plants come up in the Spring, they should be transplanted into a warm border of poor ground; the best method for obtaining good seeds, is to plant some of them in lime-rubbish; the plant has not much beauty, and is admitted into gardens merely for variety. The fifth sort may be propagated by cuttings or seeds; if the former are used, they should be planted in a shady border in any of the summer months, and frequently watered; in four or five weeks they will have good roots, and should be taken up and potted; this sort is hardy enough to admit of being exposed to the open air in Summer, and in Winter, if it be sheltered in a common greenhouse, it will live several years; the seeds that are sown in the Spring will seldom come up the same year, but those which fall, or are sown in Autumn, will come up the following Spring. Martyn's Miller.

AMBROSIA. See ARTEMISIA and COCHLEARIA.

AMBROSIACA, in *Ornithology*, a species of HIRUNDO, or swallow, that inhabits Senegal, and smells particularly strong of ambergris. It is of a greyish brown colour, bill blackish, legs brown. Gmel. Linn. Syst. The length is five inches and an half, bill half an inch, the plumage darkest on the head and quills, and the tail very forked. This is the *hirundo riparia Senegalensis* of Brisson. av. ii. p. 508. N^o 13. L'Hirondelle ambrée of Buffon. Ois. vi. p. 612.; and ambergris swallow of Lath. Gen. Syn. iv. p. 568.

AMBROSIACA β . It is uncertain whether this should be considered as a distinct variety of the preceding species, or merely a sexual difference. Dr. Latham describes it as "cinereus subtus cinereo-alba, cauda elongata maxime forficata;" (Ind. Orn. tom. ii. 575.) general colour inclining to grey, beneath cinereous white, tail long, and greatly forked; its length is five inches. This was observed in the collection of Sir Joseph Banks, Bart. after the former had been described, and was published in the supplement of the Gen. Syn. It is supposed to inhabit China.

AMBROSIAN *rite*, or office, denotes a particular office or formula of worship, used in the church of Milan, which is sometimes also called the Ambrosian church.

The denomination takes its rise from St. Ambrose, archbishop of Milan, in the fourth century, who is usually supposed to have been the author of this office. Yet some are of opinion the church of Milan had an office different from that of the Roman and other churches of Italy before the time

time of that father. In effect, till the time of Charlemagne, each church had its several office: and when in after-days the pope took on him to impose the Roman office on all the other churches of the West, that of Milan sheltered itself from the imposition, under the name and authority of St. Ambrose; from which time the phrase Ambrosian rite has obtained, in contradistinction to the Roman rite.

The public library of Milan is also called the *Ambrosian Library*.

We also meet with the *Ambrosian chant*, or song.

AMBROSIAN CHANT. There are few writers on ecclesiastical music who do not speak of the *Ambrosian chant*, and of its being different from the Gregorian; but no satisfactory account has been given of their specific difference; nor was I able (says Dr. Burney) in hearing the service performed at the Duomo in Milan, (where it is said to be preserved in all its purity), or by a perusal of the Missals, or other books on *canto fermo* published in that city, to discover any considerable deviation from the plain song used in the service of other cathedrals in France or Italy, where the Gregorian chant is said to subsist. The truth is, that there are no vestiges of the Ambrosian chant remaining, sufficient to ascertain its peculiar character. The fragments of it that Gafurio has inserted in his *Practica Musica* are very suspicious, not only as they have a much more modern appearance than even the ancient Gregorian chants that are come down to us, but on account of the number of modes in which he gives them, which amount to eight; whereas all writers on these subjects agree in saying that St. Ambrose only used the four authentic modes, and that the four plagal were added afterwards by St. Gregory. Those who pretend to know the difference between the Ambrosian and the Gregorian *canto fermo*, tell us, that it is louder, higher, and of greater compass—*fortior, durior, et magis extensa*; but this conveys nothing to the mind of a musician as to the difference in the melody of the two chants. See GREGORIAN CHANT, CANTO FERMO, and PLAIN SONG.

AMBROSIN, in *Middle Age Writers*, denotes a coin struck by the lords or dukes of Milan, whereon was represented St. Ambrose on horseback, with a whip in his right hand. The occasion of this coinage is said to have been a vision of that saint, who appeared to the Milanese general in 1339, during the time of a battle.

AMBROSINIA, so named in honour of the two brothers Bartolomeo and Hyacinto Ambrosini, for 52 years professors of botany at Bologna, in *Botany*, a genus of the class and order of *gynandria polyandria* of Miller, *monoecia monandria* of Schreber, *polyandria monogynia* of Swartz, and *polyandria polygynia* of Gmelin's Linnæus, of the natural order of *piperrita*, and *aroidæ* of Jussieu: its characters are, that the calyx of the males is a spathe, one-leaved, cowed, convolute at the base, and converging at the tip, partition membranaceous. (Spadix *Basis*), divided into two cells communicating at top; no corolla; the stamens have no filaments; the anthers are very many, solitary, within the hinder cell of the spathe, in the upper part of the partition, digested in a distinct order; the nectaries are two, roundish, concave, at the base of the anthers. The calyx of the female is a spathe common with the males; no perianthium; the pistillum has a germ in the anterior cell of the spathe, and the lower part of the partition, solitary and roundish; the style cylindrical, shorter than the spathe; the stigma obtuse; the pericarpium a roundish one-celled capsule; the seeds are very many, ovate and nestling. There is one species, viz. *A. Bassii*, arisarum of Morison, Ray, and others, a native of Sicily near Palermo, first found, described and figured by Bocconi, requiring the pro-

tection of a green-house, and capable of being increased from the root.

AMBROSIUS, AURELIANUS, or AURELIUS AMBROSIUS, in *Biography and History*, a famous general, and afterwards king, of the ancient Britons, was of Roman extraction, and is supposed to have been the son of one of the kings elected by the Britons after the Romans had left the island. He was educated at the court of Aldroen, king of Armorica, and sent over at the request of the Britons with 10,000 men under his command, to assist them against the Saxons, whom Vortigern their king had invited into Britain.

His success in this expedition was so considerable, that, after the death or abdication of Vortigern, Ambrosius, probably king of the Damnonii, in consequence of the death of his father, was elected to the pendragonship or sovereignty of all England; which supreme office he exercised with great honour to himself and benefit to his subjects. During his reign, and under his direction, the famous Arthur obtained several victories, and was eminently successful in restraining the progress of the Saxons among the Northern Britons. Ambrosius, after distinguishing himself by his valour on several occasions, and by his zeal, as it is said, in regulating the affairs of the church, died at Winchester, according to the report of Geoffrey of Monmouth, of poison, administered by a Saxon disguised as a physician, and hired for the purpose by one of the sons of Vortigern, or, according to the more generally received opinion, was killed in a battle fought in 508, against Cordic, one of the Saxon generals. Geoffrey of Monmouth pretends that Ambrosius built **STONE-HENGE**, near Salisbury, in commemoration of 300 British noblemen, who were massacred by the Saxon general, Hengist. Polydore Virgil says, that this edifice was erected by the Britons as a monument to their general Ambrosius, on the place where he fell in battle, to perpetuate the memory of the illustrious services which he performed for his country. But both these stories are rejected as fabulous by the best antiquarians, though they are by no means agreed as to the true origin of this building. Biog. Brit.

AMBERY, the place where arms, plate, vessels, and every thing belonging to house-keeping, were formerly kept.

Hence, probably, the *ambry* at Westminster was so called, because formerly set apart for that use; or rather, from *ambromery*, a house adjoining to an abbey; in which the charities were laid up and distributed to the poor. The word is still used in Scotland, in the same sense.

AMBRYM, or AMBRIN, island, in *Geography*, one of the New Hebrides in the south Pacific Ocean, S. lat. 16° 9' 30". E. long. 168° 12' 30". It has a volcano, and is about 50 miles in circumference.

AMBRYSUS, or AMBRYSUS, in *Ancient Geography*, a town of Greece in the Phœide. M. d'Anville places it between two chains of mountains, west of Lebadea, and north-west of Anticyra. It is called by Pausanias Amphryssus. This town was separated from Delphi by Mount Parnassus; and it was fortified by the Thebans, in their war with Philip of Macedon. Near it was a temple of Diana Dictynnea, to which the inhabitants paid peculiar homage. Her statue was of black marble. Pausan. lib. x. c. 36.

AMBUBAJÆ, in *Antiquity*, a kind of wanton minstrels about Rome, who lived by playing on the flute, dancing in places of resort, and prostituting their bodies for hire.

Authors speak as if there had been a regular college, or community of ambubajæ, and that these were the same with

what were otherwise called *tibicine*. Thus Horace, sat. i. speaks of

“*Ambubajum collegia, Pharmacopole.*”

Some suggest that the ambubajæ were of the male kind, only dressed in the habit of women.

Antiquaries have been greatly divided about the ambubajæ; some will have them to have come to Rome out of Syria; others suppose them to have been Roman women, though called by a name of Syriac origin.

Torrentius, Turnebus, and Pulmannus, derive the name from *ambu*, or *am*, an old Latin preposition, denoting *circum*, *about*, and *Bajæ*, a delicious place near Naples; and maintain, that the ambubajæ were a kind of courtezans, who frequented the baths of that city. Cruquius is of a different opinion, taking the word ambubajæ to have been used for *ambubeja*, and primarily to denote a seller of *ambubeja*, an herb mentioned by ancient naturalists. These sellers of *ambubeja* being a kind of empirics, their name became afterwards applied to all charletans, and quacks.

Others say, that ambubaia is a Syriac word, and that in the Syriac language, it denotes a flute, or the sound of a flute. From Juvenal it appears, that Syria was famous for furnishing the best players and musicians. Thus he says, sat. iii. 62.

“*Jam pridem Syrus in Tiberim defluxit Orontes,
Et linguam, et mors, et cum tibicine chordas
Obliquas, necnon gentilia tympana secum
Vexit, et ad Circum iussas prostrare puellas.*”

Suetonius exhibits the emperor Nero as attended by these Syrian women, and Roman courtezans at table; thus, “*Cœnitabat non nunquam—inter scortorum totius urbis, et ambubajarumque ministeria.*” The followers of the profession of female flute-players became so numerous and so licentious at Rome, that their occupation was prohibited in the Theodosian code; but with so little success, that in the time of Justinian, as we are informed by Procopius, the sister of the empress Theodora, who was a flute player, or *tibicina*, appeared on the stage without any other dress than a slight scarf thrown loosely over her. These performers even became so common in all private entertainments, as well as at public feasts, where they frequently obtruded themselves, uninvited, that towards the close of this reign their profession was regarded as infamous, and utterly abolished.

Hoffman has a discourse on the ambubajæ.

AMBUBEIA, in *Botany*, a name given, by some authors, to wild succory.

AMBUILLA, or AMBOILLA, in *Geography*, a country of Africa, in the kingdom of Congo, between the lake of Aquebond and St. Salvador.

AMBULANS, in *Entomology*, an insect of the *PODURA* genus, described by Linnæus; it is white, with an extended tail, and lives amongst mosses. This is the “*Podura terrestris nivea,*” of Degeer *Inf. vii. p. 33. n. 6. tom. iii. f. 5.*

AMBULANS, a species of *CRYPTOCEPHALUS*, one of the new genera, adopted by Gmelin in the Linnæan arrangement, from Geoffroy and Fabricius. This insect is a native of Germany, is black, shining, and has the wing-cases punctured. *Fab. et Gmel.* It approaches *Cryptocephalus elongatus*, very nearly, and the antennæ of both species are serrated, but the thorax of the latter is rufous and downy, which in the former is black.

AMBULANT, or AMBULATORY, a name formerly

given in France to those commissioners or clerks of the king's farms, who had no settled office, but visited all the offices within a certain district, to see that nothing was done in them against the king's right, and the interest of the farm.

AMBULANT is also used to denote those brokers at Amsterdam, or exchange agents, who have not been sworn before the magistrates. They transact brokerage business, but their testimony is not received in the courts of justice.

AMBULATION, or walking. See EXERCISE.

AMBULATION, in *Physic*, is used by some for the spreading of a gangrene or mortification.

AMBULATOR, in *Entomology*, a species of *LAMIA*, figured by Petiver, *Gazop. tab. 37. fig. 6.* and described by Fabricius. The anterior part of the thorax is armed on each side with two spines, and the body is clouded with cinereous and chestnut. It is properly a *cerambyx* of Linnæus. See *LAMIA*.

AMBULATORIUS, a species of *ICHNEUMON*, with a yellowish scutellum, and spotted thorax, the second joint of the abdomen ferruginous brown, the margins of the others white. This insect is very rare, it inhabits Great Britain, and was first described by Fabricius in the *Species Insectorum*, from a specimen in the cabinet of Sir Joseph Banks, Bart. The species was known to Linnæus, and his latest editor Gmelin has adopted the above Fabrician specific character. The head of this creature is black, the antennæ yellow beyond the middle, the thorax is black, with a yellowish line in the anterior part, and a spot of the same colour before the base of the wings: the abdomen is black, except the ferruginous or second joint, and the white margins of the third, fourth, and fifth.

AMBULATORY, formed from *ambulare*, to walk, a term anciently applied to such courts, &c. as were not fixed to any certain place; but held sometimes in one place, and sometimes in another.—In opposition to stationary courts.

The court of parliament was anciently ambulatory; so also were the courts of king's bench, &c.

We sometimes also say, in a legal sense, a man's will is ambulatory to the time of his death; meaning, that he has it always in his power to revoke it.

AMBULIA, in *Botany*, a genus of the *didynamia angiospermia* class and order; the essential characters of which are, that the *calyx* is quindentated, the *corolla* tubulose, quadrifid, with unequal segments; and the *capsule* pentagonous, single celled, and single-seeded. There is one species, *viz. A. monosperma* of Gmelin, or *A. aromatica* of La Marck, who represents the capsule as polyspermous. This plant, particularly described by La Marck, (*Encycl. tom. i. p. 128.*) grows in Malabar, in a sandy and watery soil, and appears to be annual. All its parts have a sweet and aromatic smell, resembling that of pepper, when it is green. Its taste is bitterish; and it is administered in a decoction, for allaying fevers, and in four milk in cases of vertigo. La Marck suggests that it is the *manga-nari* of Rheed, and the *terchinthiana* of Rumphius.

AMBULII, in *Mythology*, a name given at Lacedæmon to Jupiter, Minerva, Castor, and Pollux, where they had altars before a large portico, in which the inhabitants were accustomed to walk. They are said to have derived their name from *αμβολη*, delay, because it was thought that those deities had it in their power to retard the instant of death.

AMBULON, in *Botany*, a tree which grows in the island

island of Aruchit, and the fruit of which is white, and resembles that of fugar, and about the size of the coriander seed. La Marek suggests that it is a species of *GALLIUM*, the fruit of which contains a white dust resembling that of fugar, but is a sort of wax of which are made bougies. It is probably the *Myrtus Brabantica similis*, &c. mentioned by Plukenet, in his *Almagest*, p. 260. Ray mentions a tree called Ambulong, which, he says, is a sort of palm, the fruit of which grows in large cones, like the *NIPA*.

AMBURBIUM, or **AMBURBIALE Sacrum**, in *Antiquity*, a religious feast or ceremony, practised among the Romans, in which they made processions around their city. See a description of an amburbiale in Lucan's *Pharsalia*. lib. i. v. 392, &c. Hence also we have *amburbiales victime*, the victims carried along in the procession, and afterwards sacrificed.

The word is compounded of *ambio*, *I go round*; or of *amb*, or *ambu*, an ancient preposition, signifying *around*, and *urbs*, a city.

Scaliger, in his notes on Festus, followed by many others, maintains the amburbia to be the same with amburvalia. Servius, however, expressly distinguishes between the amburbia and amburvalia, and says, the one was performed in the city, and the other in the country.

AMBUSCADE, **AMBUSH**, **AMBUSHMENT**, in *Tactics*, a body of men who lie in a wood, &c. in readiness to rush out upon, or inclose an enemy unawares.—Or, the place wherein such a corps hide themselves.

Ambuscades in battle are certain arrangements or dispositions, in which a general, by drawing back one of his wings, or his centre, or even his whole army, entices the enemy to follow him, and by these means draws him into some snare, which he has prepared for receiving him. No general in ancient times ever manifested a greater talent for stratagems, or used them with better success, than Hannibal. He defeated Sempronius on the banks of the river Trebia, by means of an ambuscade, composed of a thousand horse and a thousand foot, placed in ravines and bushes near this river, by which the two armies were then separated. Minutius, who commanded the Roman army jointly with Fabius, fell into a similar ambuscade at Gerunium. On another occasion Hannibal surprised the consuls Crispinus, and C. Marcellus. Livy.

Amongst the moderns, the eastern nations, though little versed in tactics, are, perhaps, of all people, those who best understand the art of stratagem; thus endeavouring to compensate for the defects of other parts of their military discipline. A singular instance of a well-contrived and successful ambuscade is furnished by the history of Thamas Kuli Khan, the famous usurper of the throne of Persia. Whilst he was besieging Gangea, a city on the confines of Armenia, he received intelligence, that the Ottoman army, consisting of more than 100,000 men, was advancing to succour the place; upon which he immediately raised the siege, joined a body of troops commanded by his son, and encamped on the plains of Erivan: but some mountains, which were on his rear, suggested to him the idea of insuring victory by a stratagem. This stratagem he conducted with so much art and assiduity, that by a feigned retreat he allured the Turks into a pursuit, and at length into the defiles prepared in the mountains; when they suddenly found themselves attacked by the Persian artillery in ambush, and abysses opened under their feet, by the springing of mines, which swallowed up whole battalions

of them. The Turks, on this occasion, lost 50,000 men, their artillery, baggage, and military chest; and among the killed were nine bathaws, with the general in chief, Abdoual Cuperli. Similar instances of successful ambuscades frequently occur among the Asiatics, who have recourse to them on a greater variety of occasions than the Europeans.

AMBUSTA, in *Entomology*, a species of *PHALÆNA* of the *noctua* family. Thorax crested; wings incumbent, greyish-brown, with three yellowish streaks, an annule in the middle, and an undulated streak behind.—This moth is produced from a naked brown larva, with white lines. The antennæ are ferruginous, white at the base; head, and thorax reddish grey. Posterior wings white, tips brown. Inhabits Austria, on Lichen parietinus. Fabricius.

AMBUSTA, or **AMBUSTIO**, in *Surgery*, a solution of continuity, caused by the application of heated substances. See **BURN** and **SCALD**.

AMBUSTUS, in *Ornithology*, a species of *FALCO*. The body is pale tawny, front of the head between the eyes and bill naked, cere large, legs bluish. Gmel. Linn. This is the tawny vulture of Brown and Latham. The bill is dusky, short and thick, cere large, and beset with bristles, the chin bearded with a tuft of long slender feathers: head, neck, breast, belly, and thighs, pale tawny; coverts of the wings intermixed with brown; tail dirty white, with brown bands; legs slender, bluish claws, long and slightly bent. The length of this bird is two feet four inches; it inhabits Falkland islands.

AMBY, in *Geography*, a town of the Austrian Netherlands, in the province of Limburg, opposite to Maestricht, and on the east side of the river Maese.

AMBUTUA. See *PAREIRA Brava*.

AMCHITCHE, one of the Fox islands in the North-Pacific Ocean. N. lat. 53° 22'. E. long. 178° 14'.

AME, fowl, is made a musical term by the French, for feeling and expression. As to its effect in the *airs tendres* of their old music, it degenerated into over-charged tenderness, displeasing to all ears but their own.

AMEA, in *Botany*, a name given, by the natives of Guinea, to a plant which they use in bleeding at the nose, drying and powdering the leaves, and snuffing up the powder. It seems to be of the family of the plant called *pajamirioba*, by Sir Hans Sloane, in his Jamaica Catalogue. Its leaves are large and alated, and of a beautiful green, even when dried. Phil. Trans. N° 232.

AMEDABAD, in *Geography*. See **AMHEDABAD**.

AMEDAN, a town of Persia in the province of Taberistan, 20 leagues S. S.W. of Amol.

AMEDEL, *Amedians*, in *Ecclesiastical History*, formed of the Latin *amans Deum*, q. d. *lover of God*, or rather of *amatus Deo*, *beloved of God*, a congregation of religious in Italy, instituted in 1400.

The Amedei wore a grey habit, and wooden shoes, had no breeches, and girt themselves with a chord. They had twenty-eight convents, and were united by Pope Pius V. partly with the Cistercian order, and partly with that of the Socolanti, or wooden-shoe wearers.

AMEDEUS, in *Biography*, a monk; was bishop of Lausanne about the middle of the 12th century. His "Sermons in praise of the Virgin Mary," printed at Basil in 1537, and at Antwerp in 1600, are included in the *Bibliotheca patrum*. Dupin.

AMEDNAGUR, in *Geography*, a country or Soubah of Hindostan, bounded on the north by Candeish and Malwa,

on the west by the Gatte or Balagat mountains, on the south by Bejapour or Visapour, and Tellingana, and on the east by the province of Berar.

AMEDNAGUR is the capital of the above Soubah, now called Dowlatabad, situate at the foot of the Balagât mountains, 105 miles N. N. W. of Visapour, and 63 N. E. of Poonah. This city has been generally placed 50 miles S. E. of its true position. N. lat. $17^{\circ} 6'$. E. long. $74^{\circ} 52'$. See ARMEDNAGUR.

AMED. See DIARBEKIN.

AMEENABAD, or AMINABAD, a town of Hindostan, in the country of Lahore; 30 miles north of Lahore. N. lat. $31^{\circ} 30'$. E. long. $72^{\circ} 40'$.

AM-EIS, a town of Germany, in Carinthia, on the Drave, five miles W. S. W. of Lavamund.

AMEIVA, in *Zoology*, a species of LACERTA, having a verticillated long tail, thirty abdominal scales, and a kind of collar consisting of a double wrinkle beneath. Linn.

The ameiva inhabits America. Dr. Shaw says it is principally found in South America, but that it is said to occur in some parts of Asia and Africa. "This creature varies considerably in colour, but is commonly blue or bluish green above, with somewhat irregular variegations of black and white, which are sometimes disposed in streaks, and sometimes in spots or patches; and commonly in such a manner as to leave several whitish, or pale blue round spots scattered on different parts of the body and limbs; the under parts are dusky, with more or less of a bluish cast, and often marked here and there with small whitish spots."—Dr. Shaw. Zool.

AMELANCHIER, in *Botany*. See CHIONANTHUS and MESPILUS.

AMEL, see ENAMEL.

AMELANDT, in *Geography*, an island in the German Ocean, about four leagues long, and one wide, situated about two leagues north from the main of Friesland. N. lat. $53^{\circ} 30'$. E. long. $6^{\circ} 12'$.

AMELBUREN, a town of Germany, in the circle of Westphalia and bishopric of Munster, six miles south of Munster.

AMEL CORN, in *Agriculture*, the same with SPFLT-CORN.

AMELIORATING SUBSTANCES, in *Agriculture*, are such, either of the animal or vegetable kind, as, when applied to land, render it more fertile and productive.

AMELIORATING CROPS, are such as are supposed to improve the lands on which they are grown. Most of those plants which have a large stem and shady leaf are thought to render the soils on which they are produced more fertile. Carrots, turnips, artificial grasses, and many other green vegetables, are in general considered as ameliorating crops; but it is probable, that all sorts of vegetables, carried off the land, are in some degree or other exhausters of the soil; and that green crops, such as have been just mentioned, are only less so, than such crops of grain or other vegetables as contain large proportions of gluten, or vegetable matter in their compositions. The improvement of lands, therefore, by what are termed ameliorating crops, in a great measure probably depends either upon the culture, which the ground receives while they are growing, and the returns which they make to it in the way of manure, after decaying, or being consumed by animals, or from their taking up only such sorts of matters as are not necessary to the succeeding crop.

AMELL, in *Botany*, *Kareta-Amelpodi* of Rheed, Malab.

is a tree about seven feet high, with a slight stem, and white wood, covered with brown bark. The leaves are opposite, ovate-lanceolated, pointed at the two ends, thick, entire, soft, smooth, glossy, of a blackish green above, and greenish below. The flowers are white, and grow at the summit of the branches, disposed in short panicles, and corymbiform. Each flower has a corolla with five oval-pointed petals, opening in a star, thick, white above, and striated with red lines below; the stamina are five, a little longer than the petals, white, withered anthers, and an ovary with a purplish style, forked at its summit. The fruit is a roundish capsule, of a brownish green colour, glossy, with three cells; but Rheed does not mention its seeds. This tree grows on the coast of Malabar, in sandy stony soil. It is always green; flowers all the year, and produces mature fruit about the month of August. The decoction of its leaves in water is recommended as a sovereign remedy in colics. Its leaves and roots, boiled in oil, furnish a topic which is said to be efficacious in resolving large tumours. Rheed mentions another species of Amel, which he calls *Kattou-belutta amelpodi*, somewhat smaller than the former, but little differing from it in other respects; it grows in the mountainous and uncultivated parts of Malabar. La Marek, *Encycl. tom. i. p. 129.*

AMELIA, in *Geography*, a county of Virginia, in North America, situate between the Blue ridge and the tide waters, having Cumberland county to the north, Prince George county to the east, and Lunenburg county to the south and west. Amelia, including Nottaway, a new county, contains 18,097 inhabitants, of whom 11,037 are slaves.

AMELIA island, lies on the coast of East Florida, in America, about seven leagues north of St. Augustine, and very near Talbot island on the south, at the mouth of St. John's river. It is thirteen miles long, and two broad, is very fertile, and has an excellent harbour. Its north end lies opposite to Cumberland island, between which and Amelia island is the entrance into St. Mary's river, in N. lat. $30^{\circ} 52'$. W. long. $67^{\circ} 23'$.

AMELIA, anciently AMERIA, a small town of Italy, seated on a mountain in the duchy of Spoleto, and the residence of a bishop, holding immediately of the pope, fourteen miles south of Todi. N. lat. $42^{\circ} 33'$. E. long. $13^{\circ} 20'$.

AMELIUS, GENTILIANUS, in *Biography*, a Platonic philosopher, was born in Tuscan, chiefly resided at Apamea in Syria, and flourished about the year of Christ 263. Having been instructed in philosophy by Lyfimachus, he became the disciple of Plotinus, and continued with him at Rome 24 years, viz. from the year 246 to the beginning of the year 269. His talents and taste were so similar to those of his master, that he was soon admitted into his friendship, and employed by him in resolving questions proposed by his disciples, and refuting the objections and calumnies of his enemies. Here he commenced an intimate acquaintance with Porphyry, who, during the last six years of his residence at Rome, was his fellow disciple and companion, and who represents him as the most studious and laborious of all the disciples of Plotinus. He made large collections from the lectures and disputations of the schools: and in a work of his own, consisting of 40 books, he refuted Zostrianus, a Christian heretic, who confounded the doctrines of the gospel with those of the philosophers. He also vindicated his master from a charge of plagiarism, in a treatise "On the difference between the Doctrine of Numenius and that of Plotinus." His works, amounting,

as it has been said, to 100 volumes, are lost. Longinus speaks of him as a verbose writer, but says, that Amelius and Plotinus were the only philosophers, who, in his time, published works that were worth procuring. Eusebius, Cyril, and Theodoret cite a passage from his writings, in which he refers to the Evangelist John, and quotes the beginning of his gospel in confirmation of Plato's doctrine concerning the divine nature. His proper name, as we learn from Porphyry, was Gentilian; and he chose to have his surname written with an *r*, *Amerius*, as it is in Eunapius, and not *Amelius*; the last in Greek denoting negligence, the former integrity. He survived his master Plotinus some years, and probably died at Apamea. Porphyry. Vit. Plot. apud Fabr. Bib. Græc. tom. iv. p. 104. Suidas. Brucker's Hist. Phil. by Enfield, vol. ii. p. 70. Lardner's Works, vol. viii. p. 160.

AMELLOIDES, in Botany. See CINERARIA.

AMELLUS, a genus of the *syngenesia polygamia superflua* class and order; of the natural order of *compositæ oppositifoliae*, and *corymbiferae* of Jussieu: its characters are, that the common *calyx* is imbricate, roundish, (scales linear, pressed close) the *compound corolla* is radiate, corollets hermaphrodite, very many in the disc, females very many in the ray; *proper* of the hermaphrodite tubulous, five-cleft, female ligulate, lax, two or three-toothed; the *stamina* in the hermaphrodites, have five capillary, short filaments, anther cylindrical and tubulous; the *psyllium* in the hermaphrodites has an obovate germ, style filiform, of the length of the stamens, stigmas two, and filiform; females very like the hermaphrodites; no *pericarpium*; *calyx* unchanged; *seeds* to the hermaphrodites solitary, obovate; down capillary, to the females very like the others; the receptacle chaffy. *Obf.* The teeth in the corollets of the ray are scarcely visible. Martyn reckons two; Gmelin and La Marck three, species. 1. *A. Lycnitis*, trailing *A. verbefina asteroides* of Linn. spec. edit. 1. *chrysanthemum Africanum* of Breynius, "with leaves opposite, lanceolate, obtuse, downy, peduncles one-flowered." This species rises from two or three feet high, sending out branches on every side, terminated by flower-stalks, each supporting one violet-coloured flower, with a yellow disc, shaped like those of the aster, and appearing in July or August. The down is villose with few rays; a native of the Cape of Good Hope; cultivated in Kew Gardens, by Mr. Miller, in 1768. 2. *A. umbellatus*, umbelled *A. solidago villosa*, &c. of Brown Jam. "with leaves opposite, three-nerved, downy underneath, flowers umbelled." This species has herbaceous, upright, simple round hairy stems, two or two and a half feet high; the leaves at first radical, petioled, wedge-shaped at the base, somewhat decurrent and serrate, nerved, smooth, dark green, white and soft beneath; the stem towards the top generally divided into three branches, each of which is subdivided into many small flower branches, forming a sort of umbel; the umbellules have from three to eight flowers, with linear leaflets, the peduncles an inch long, each sustaining one large yellow flower; the scales of the calyx lanceolate, membranaceous, and hoary; the seeds obconical; the down sessile and hairy; the receptacle hirsute. It has the habit of tussilago, and would be of that genus, if the down were stipitate, and the receptacle naked. It is connected with the first species by the bristly chaffs between the florets. It is a native of Jamaica, in the rocks, woods, and mountains, and flowers there in Summer. 3. *A. tenuifolius*, slender-leaved *A. amellus fruticosus*, "with alternate linear leaves, and one-flowered

branches." This species is about fifteen inches high; its stem is woody, and divided at the bottom into cylindrical branches, hairy, leafy, and generally simple; the leaves one line and a half long, and one line and a half broad, are straight, linear, soft, pubescent and alternate, the flowers terminating, the branches are solitary, and resemble those of the first species in their form and colour; the scales of their calyx are straight, very acute, hairy, and almost equal to one another; the receptacle contains small seeds. The account of this plant was communicated by M. Sonnerat to La Marck. It was found at the Cape of Good Hope. Its wood is yellow. 4. *A. carolinianus* of Gmelin, "with opposite, sublanceolate, subserrate leaves, the peduncles double, one-flowered and axillary." Walt. Flor. Carol. p. 213.

The first species is a perennial plant, and may be easily propagated by cuttings, planted in the shade in the Summer months, and well watered. The plant should be taken up with beds of earth, and put in pots, so as to be sheltered in winter, under a common frame or in a green house, with plenty of air in mild weather. The second species may be propagated by seeds sown on a hot-bed in spring; two or three of the plants, when they are fit to be removed, should be planted in pots, and plunged into a hot bed of tan, so as to get ripe seeds in the autumn, otherwise the plants will require a stove in winter. Martyn's Miller.

AMELLUS. See CALEA and ERIGERON.

AMELLUS *Virgii*. See ASTER.

AMELOT DE LA HOUSSAYE, ABRAHAM NICHOLAS, in Biography, was born at Orleans in 1634, and formed under the president of St. André, ambassador at Venice, who employed him as his secretary. His manner and his writings were alike austere; and as he never rose much above indigence, he was often indebted to the liberality of his friends. The events of his life are little known; and he died at Paris in 1706, in the 73d year of his age. His writings are numerous, and attracted notice, as he wrote with freedom on political subjects. The principal of his works, which were written in French, are the following:— "A Translation of Father Paul's History of the Council of Trent," 4to. 1686, well received, and highly commended by the assertors of the liberty of the Gallican church, now greatly superseded by that of Courayer; "A Translation of Machiavel's Prince," 12mo. with notes, vindicating that writer from the charge of having taught assassination and poisoning; "A Translation of Gratian's Courtier," 12mo. with moral and political reflections; "A Translation of the Annals of Tacitus," with valuable notes of a political kind; "The History of the Government of Venice," in 3 vols. 12mo. printed in 1714, with "An Inquiry into the original Liberty of Venice, translated from the Italian," which gave great offence to the Venetian state; "The Morals of Tacitus," extracted from his Annals, 12mo. a work that has been much read; "Memoirs, Historical, Political, Critical, and Literary," a posthumous work, abounding with satirical anecdotes. Amelot was at one period of his life confined in the Bastille; but the cause of his imprisonment is not now known. Probably some of his free political writings might incur displeasure. Gen. Dict.

AMELOTTE, DENNIS, a priest of the Oratory, and a famous writer among the Roman Catholics, was born at Saintes, in 1606, ordained priest in 1632, and maintained a great correspondence with the fathers of the Oratory. He published at Paris, in 1643, a life of Charles de Gendron, second superior of that congregation, which contained reflections

tions on the famous abbot of St. Cyran, that incurred the resentment of the gentlemen of Port Royal, and excited them to write a libel against the author; but it had ample retaliation, so that he did them greater prejudice than the whole body of Jesuits. The work which principally deserves to be mentioned is, "The French Translation of the New Testament, with Annotations," in 4 vols. 8vo. printed in 1660, 1667, and 1678. His chief object in this translation was to find expressions more proper and elegant than those of the former versions, and with this view he obtained the assistance of Mr. Courart, a protestant, well skilled in the French language, but ignorant of Greek and Latin, so that in turning a period he perverted the true sense of the text, or enervated its force, for want of being able to consult the original. In the preface to the first edition he boasted that he had consulted the manuscripts of the Vatican, and many others, but afterwards he confessed that he had never seen any of them. He also wrote "An Abridgment of Divinity;" "A Catechism for the Jubilee;" "A kind of Christian Manual;" (*Journée Chrétienne*) and "A Harmony of the Gospels," in 12mo. published in French, in 1669, and in Latin in 1670. Amelotte entered into the congregation of the Oratory in 1650, and continued with them till his death in 1678. *Gen. Dict.*

AMEN, a scriptural and ecclesiastical term, used as the conclusion of all solemn prayers, &c. and signifying *so be it, or fiat*.

The Hebrews had four kinds of *amen*. That just mentioned they called *amen pass*, which was accompanied with the greatest attention and devotion: in this sense the word has passed into almost all languages, without any alteration.

Some authors are of opinion, that the word *amen* is formed of the initial letters of these words, *Adonai, Melech Neeman, Dominus Rex Fidelis*; an usual expression among the Jews when they would give weight or sanction to any thing they said. In effect it is known that to express the words *אדני מלך נאמן Adonai Melech Neeman*, in the ordinary way of abbreviatures; the rabbins only take the initial letters, which, joined together, are really the letters of the word *אמן amen*.

On the other hand, there are some of their Cabbalists, who according to their usual manner of finding a hidden meaning in words, which they call *notaricon*, out of the letters of the word *amen* form the whole phrase *Adonai Melech Neeman*.

Yet it is certain also that the word *amen* was in the Hebrew tongue before ever there were any such things as cabbala or cabbalists in the world, as appears from Deuteronomy, chap. xxvii. ver. 15.

The primitive of the word *amen* is the verb *aman*, which, in the passive voice, signifies to be true, faithful, constant, &c. Hence came the noun *אמן amen*, which signifies *truth*. And, lastly, of this noun *amen* they made a kind of affirmative adverb, which, when placed at the end of any phrase, or proposition, signifies, *so be it, be it true, I acquiesce in it, &c.* Thus in the passage above cited from Deuteronomy, Moses ordered the Levites to cry aloud to the people, *Curfed is he that makes any graven or molten image, &c. and all the people shall say amen*, i. e. yes, may he be curfed, we desire, we agree to it.—But at the beginning of a phrase, as in several passages of the New Testament, it signifies, truly, verily.—When it is redoubled, or repeated twice together, as is always done by St. John, it has the effect of a superlative; agreeably to the genius of the Hebrew tongue, and her two daughters, the Chaldee, and Syriac.—In this sense we are to understand *amen, amen, dico*

vobis. The Evangelists usually preserve the Hebrew word *amen*, in their Greek *אמן*, though St. Luke sometimes renders it by *αληθως, truly*, or *υα, certainly*.

AMENABLE, or AMAINABLE, from the Fr. *amener, or venir, Land*, is applied in our law-books to a woman, who is supposed to be governable by her husband.

It is likewise used to signify a right or power of bringing persons before a particular jurisdiction: thus, we say, a person is *amenable* before such a court, or magistrate.

AMENANUS, in *Ancient Geography*, a river which passed by Catana.

AMEND, or AMENDE, in the French *Cyffons*, a mulct, or pecuniary punishment, imposed by a sentence of the judge; for any crime, false prosecution, or groundless appeal.

AMENDE HONORABLE, denotes an infamous kind of punishment, used in France, &c. on traitors, parricides, facerious persons, and other heinous criminals.

It consists in this, that the offender is delivered up to the common hangman; who, having stripped him to his shirt, and put a rope about his neck, and a wax taper in his hand, leads him to the court, where he is to beg pardon of God, the king, the court, and his country.

Sometimes the punishment ends here; and sometimes death, or the galleys, are added.

The phrase *amende honorable* is also used by way of allusion, where a person is condemned to come into court, or into the presence of some person injured, and make an open recantation, ask pardon, &c.

AMENDMENT, in a general sense, a change made in a thing for the better.

Amendment amounts to much the same with melioration, reformation, correction, &c.

AMENDMENT, in *Agriculture*, is more particularly used for a MANURE laid on the ground, to fatten or enrich it.

AMENDMENT, in a *literary sense*, is used to denote the corrections and other alterations made in the posterior editions of books. In this sense, amendments are also denominated emendations.

AMENDMENT, in *Law*, the correction of an error committed in a process, and discovered after judgment.

If the error be committed in giving judgment, *viz.* if a wrong judgment be given, there they cannot amend it; but the party aggrieved must bring his writ of error.—However, where the fault appears to be in the clerk who writ the record it may be amended. *Terms de Ley.* 39.

At common law there was little room for amendments; for, says Britton in a treatise, published in the name and by the authority of the king, probably about the 13 Edw. 1., because the last statutes therein referred to are those of Winchelsea and Westminster the second, the judges are to record the parols or pleas, deduced before them in judgment; and king Edw. 1. granted to the justices to make record of pleas pleaded before them, but prohibited their making their own record a warranty for their own wrong, and raising their rolls, amending them, and recording them contrary to their original enrolment. So rigidly was this statute observed, that when justice Hengham, in the same reign, was induced from motives of mere compassion for a poor man, who was fined 13s. 4d. to erase the record and to make it 6s. 8d., he was fined 800 marks. With this fine, it has been said, a clock-house was built at Westminster, and furnished with a clock; but the true æra of the invention and use of clocks in this country, which did not take place till about 100 years afterwards, or about the close of the 14th century, falsifies

falsifies this story. There were, however, some cases, that were amendable at common law. Original writs were not amendable at common law; for if the writ be not good, the party may have another: judicial writs may and often have been amended. 8 Rep. 157. Whatever at common law might be amended in civil cases, was at common law amendable in criminal cases, and so it is at this day: resolved by Holt, Ch. J. Powell, and Powis J. 1 Salk. 51.

Formerly the suitors were much perplexed by writs of error brought upon very slight and trivial grounds, as mispellings and other mistakes of the clerks, all which might be amended at the common law, while all the proceedings were in *paper*; for they were then considered as only *in fieri*, and therefore subject to the controul of the courts. But when once the record was made up, it was formerly held, that by the common law no amendment could be permitted, unless within the very term in which the judicial act so recorded was done; for during the term the record is in the breach of the court; but afterwards it admitted of no alteration. But now the courts are more liberal; and, when justice requires it, it will allow of amendments at any time while the suit is depending, notwithstanding the record be made up, and the term be past. For they at present consider the proceedings as *in fieri*, till judgment is given; and therefore, that, till then, they have power to admit amendments by the common law; but when judgment is once given and enrolled, no amendment is permitted in any subsequent term. Stat. 11 Henry IV. c. 3. Mistakes are also effectually helped by the statutes of amendment and *jeofails*, so called, because when a pleader perceives any slip in the form of his proceedings, and acknowledges such error (*jeo faille* or *j'ai faille*), he is at liberty by those statutes to amend it; which amendment is seldom actually made, but the benefit of the acts is attained by the court's overlooking the exception. Stra. 1011. These statutes are 12 in number; and by these all trifling exceptions are so thoroughly guarded against, that writs of error cannot now be maintained, but for some material mistake assigned. See Com. Dig. tit. *Amendment*.

By stat. 14 Edw. III. c. 6. no process shall be annulled or discontinued by the misprision of the clerk in writing one syllable or one letter too much or too little; but it shall be amended; and by stat. 9 Henry V. c. 4. it is declared, that the judges shall have power to make these amendments, as well *after* as *before* judgment, as long as the record in process is before them. This statute is confirmed by stat. 4 Hen. VI. c. 3. For further enlarging the authority of the courts the stat. 8 Hen. VI. c. 12. gives power to amend what they shall think in their discretion to be the misprision of their clerks in any record, process, and plea, warrant of attorney, writ, pannel, or return. There are only two statutes of amendments, *viz.* 14 Ed. III. stat. 1. c. 6. and 8 Hen. VI. c. 12. and 15.; the rest are reckoned to be statutes of *jeofails*, and not of amendments. As these statutes only extended to what the justices should interpret the misprision of their clerks, and other officers, it was found by experience, that many just cases were overthrown *for want of form*, and other failing, not aided by stat. 8 Hen. VI. c. 15. though they were good in substance; and therefore the statutes of *jeofail* were made. By stat. 32 Hen. VIII. c. 30. it is enacted, that if the jury have once passed upon the issue, though afterwards there be found a *jeofail* in the proceedings, yet judgment shall be given according to the verdict. The stat. 13 Eliz. c. 14. ordains, that after verdict given in any court of record, there shall be no stay of judgment, or reversal,

for want of form in a writ, count, plaint, &c. or for want of any writ original or judicial; or by reason of insufficient returns of sheriffs, &c. By stat. 21 Jac. I. c. 13. if a verdict shall be given in any court of record, the judgment shall not be stayed or reversed for variance in form between the original writ or bill and the declaration, or for want of averment of the party's being living, so as the person is proved to be in life; or for that the *venire facias* is in part mis-awarded; for misnomers of jurors, if proved to be the persons returned; want of returns of writs, so that a pannel of jurors be returned, and annexed to the writs; and for that the return-officer's name is not set to the return, if proof can be made that the writ was returned by such officer, &c.

The stat. 16 and 17 Car. II. c. 8. called in 1 Ventr. 100. an omnipotent act, and made perpetual by stat. 22 and 23 Car. II. c. 4. enacts, that judgment shall not be stayed or reversed after verdict in the courts of record at Westminster, &c. *for default in form*; or because there are not pledges to prosecute upon the return of the original writ, or because the name of the sheriff is not returned upon it, for default of alleging and bringing into court of any bond, bill, or deed, or of alleging or bringing in letters testamentary or of administrations; or for the omission of *vi* and *armis*, or *contra pacem*, mistaking the Christian name or surname of either party, or the sum of money, day, month, or year, &c. in any declaration or pleading, being rightly named in any record, &c. preceding; nor for want of the averment of *hoc paratus est verificare*, or for not alleging *prout patet per recordum*, for that there is no right *venire*, if the cause was tried by a jury of the proper county or place; nor shall any judgment after verdict, by confession, *cognovit actionem*, &c. be reversed for want of *misericordia* or *captiur*, or by reason that either of them be entered, the one for the other, &c.; but all such defects, *not being against the right of the matter of the suit, or whereby the issue or trial is altered*, shall be amended by the judges:—though not in suits of *appeal*, of *felony*, *indictments*, and *informations*, on *penal statutes*, which are excepted out of the act.

By stat. 4 and 5 Ann. c. 16. all the statutes of *jeofails* shall extend to judgments entered by confession, *nil dicit*, or *non sum informatus* in any court of record, and no such judgment shall be reversed, nor any judgment or writ of inquiry of damages thereon shall be stayed for any defect which would have been aided by those statutes, if a verdict had been given, so as there be an original writ filed, &c.—By stat. 9 Ann. c. 20. § 7. this act and all other statutes of *jeofail* are extended to writs of *mandamus* and *informations*, in the nature of a *quo warranto*: the statutes of amendment and *jeofails* not being construed to extend to criminal proceedings, or on penal statutes in general. Bull. N. P. 325. 2 Mod. 144. But a *mandamus* may not be amended after return. 4 Term. Rep. 689. The stat. 5 Geo. I. c. 13. ordains, that, after verdict given, judgment shall not be stayed or reversed for defect in form or substance in any bill or writ, or for variance therein from the declaration, or any other proceedings.

By the foregoing statutes, from 14 Edw. III. c. 6. to 8 Hen. VI. c. 15. the faults and mistakes of clerks are in many cases amendable; the misprision of a clerk in matter of *fact* is amendable, though not in matter of *law*. Palm. 258. If there be a mistake in the legal form of the writ, it is not amendable; the negligence of the clerk shall be amended, but his ignorance in the legal course of original writs is not amendable. 8 Rep. 159. A party's name was mistaken in an original writ; and it appearing to the court

that the curfitor's instructions were right, the writ was amended in court; and they amended all the proceedings after. 2 Vent. 152. Cro. Car. 74. If a thing which the plaintiff ought to have entered himself, being a matter of substance, be totally omitted, this shall not be amended; but otherwise it is, if omitted only in part and misentered. Danv. Abr. 346. By the common law a writ of error, returned and filed, could not be amended; because it would alter the record; but now by stat. 5 Geo. 1. the writs of error, wherein there shall be any variance from the original record, or other defect, may be amended by the court where returnable.

When the award of a writ of inquiry on the roll is good, the writ shall be amended by the roll. The court cannot amend to make a new writ, or to alter a good writ and adapt it to another purpose, &c. only when the writ is *prima facie* bad. Mod. Caf. 263. 316. Annaly 367. A declaration grounded on an original writ may not be amended, if the writ be erroneous; though if it be on a bill of Middlesex or a latitat, it is amendable. 1 Lill. Abr. 67. A plaintiff may amend his declaration in matter of form, after a general issue pleaded, before entry thereof, without payment of costs; if he amend in substance, he is to pay costs, or to give imparlance; and if he amend after a special plea, though he would give imparlance, he must pay costs. 1 Lill. 58. A declaration in ejectment laid the demise before the time; this was not amendable, because it would alter the issue and make a new title in the plaintiff. 1 Salk. 48. A demurrer may be amended after the parties have joined in demurrer, if it is only on paper. Style. 48. For the amendment of a plea, in paper or on record, &c. see stat. 4 Geo. II. c. 26.

As to the amendments of records, &c. an issue entered upon record, with leave of the court may be amended; but not in any thing material, or that shall deface the record. 1 Lill. Abr. 61. A record may be amended by the court in a small matter, after issue joined, so as the plea be not altered. Danv. Abr. 338. If on a writ of error a record is amended in another court in affirmance of the judgment, it must be amended in the court where judgment was given. Hard. 505. Where the record of *nisi prius* does not agree with the original record, it may be amended after verdict, provided it do not change the issue; but a record shall not be amended to attain the jury, or prejudice the authority of the judge. A general or special verdict may be amended by the notes of the clerk of assize in civil causes; but not in criminal actions. 1 Salk. 47. The issue roll shall be amended by the imparlance roll, which is precedent; but a roll may not be amended after verdict, where there is nothing to amend it by; though surplusage may be rejected, and so make it good. Cro. Car. 92. 1 Sid. 135.

A mistake of the clerk in entering a judgment was ordered to be amended. Cro. Jac. 351. Hut. 41. A judgment may be amended by the paper-book, signed by the master. 1 Salk. 50. At common law, the judges may amend their judgment of the same term, and by statute of another term. 8 Rep. 156. 14 Edw. III. If judgments are not well entered, on payment of costs, they will be ordered to be done so. When judgments are entered, it is said that the defects therein being the act of the court, and not the misprison of the clerk, are not amendable. Golb. 104. Mistakes in returns of writs, fines, and recoveries, by mutual assent of parties may be amended. Judgment shall not be stayed after verdict, because an original wants form, or varies from the record in point of form, which are amendable. 5 Rep. 45. After verdict given in any court of record, there shall be

no stay of judgment for want of form in any writ, or insufficient returns of sheriffs, variance in form between the original writ and declaration, &c. Stat. 32 Hen. VIII. 18 Eliz. 5 Geo. 1. c. 13. The *poslea* may be amended by the judge's notes. 1 Wilf. 33. 2 Stra. 1797. For amendments in informations by the attorney general, see 4 Terin. Rep. 457, 8. Amendments are usually made in affirmance of judgments, and seldom or never to destroy them; and where amendments were at common law, the party was to pay a fine for leave to amend. 3 Salk. 29. Jacob's Law Dict. by Tomlins, art. *Amendment*. Blackst. Com. vol. iii. p. 407.

AMENDMENT of *Bills in Parliament*, means some alteration made in the original draught; and we read of *amendments of amendments*, *amendments* of returns of representatives, &c.

In cases of wrong returns, so reported by the committee of privileges and elections, and voted by the house of commons, it is usually ordered, that the returns be *amended* by the returning officer, according to the directions of the house, without issuing a new writ.

Amendments ought always to be in that house from whence the thing to be amended originally proceeded, though the directions for the amendments came from the other house. Hakew. Mann. of Passing Bills, p. 167.

AMENDOLARE, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Calabria Citra; fourteen miles north-east of Cassano.

AMENDUS, in *Ancient Geography*, a town of Caria, supposed, by Martiniere, to be Myndus.

AMENEBURG, in *Geography*, a town of Germany, in the circle of the Lower Rhine, five miles east-south-east of Marburg, 48 north-north-east of Mentz.

AMENIA, a town of Asia Minor, belonging to the Chalybes, who inhabited the eastern part of Pontus.

AMENIA, in *Geography*, a thriving township of Duches County, New York, in America, six miles from Sharon, in Connecticut; containing 3078 inhabitants, of whom 383 are electors.

AMENORRHOEA, formed of *a priv.* *μηνες*, the *menfes*, and *ρην*, to *flow*, in *Medicine*, is an absence or deficiency of the *menstrual* excretion in women, between the age of thirteen and forty-seven. See MENSES, OBSTRUCTION, and CHLOROSIS.

AMENTACEOUS, in *Botany*, a term applied to the flowers of certain trees and plants, which are composed of a vast number of *apices*, or *anthers*, hanging down in form of a rope, such as the hazel, &c. See CATKIN.

AMENTACEÆ denote one of the classes of plants in Linnæus's natural method of classification; and they are such as bear catkins.

AMENTIA, in *Medicine*, is that deficiency of memory or reasoning which constitutes an *ἰδιότης*. This lamentable malady is placed, by Dr. Cullen, under *nervous* diseases affecting the *mind*; because the mental deficiency is generally the most prominent symptom. In many instances, however, the bodily defects are equally conspicuous, and we may conclude that the *cause* of the disease is always to be traced to some imperfect organization of the body, particularly the brain and head.

A degree of mental imbecility is sometimes observed to follow violent *fevers* and *apoplexie* attacks; and this is the only kind from which we expect a patient to recover.

In these cases the return of mental power is observed to be proportionable to that of the corporeal functions; and therefore

therefore to be promoted by the means employed in the treatment of these diseases.

AMENTUM, in *Antiquity*, a leathern thong fastened about the middle of a dart, or javelin, whereby, after calling it at the enemy, it might be drawn back again to the owner. The amentum served also to increase the force of the stroke; for which reason, some of their great men refused to use it, as confiding wholly in the natural strength of their own arms. *Amentum* denoted also a leathern string or latchet that bound their sandals.

AMENTUM, in *Botany*, see CATKIN.

AMENY, in *Geography*, one of the Laccadive islands, situate in the Indian Sea. N. lat. 11° 37'. E. long. 72° 30'.

AMER, a river of Germany, which runs into the Neckar, one and one-half mile east of Tübingen.

AMERADE, a kind of officers among the Saracens, answering to the governors of provinces among the Europeans.

The name is originally the same with that of *emir*.

AMERBACH, JOHN, in *Biography*, a learned printer, was born at Reutling, in Swabia, and acquired great reputation in the practice of his art at Brasil. The works of Augustin were very correctly printed, for the first time, at his press, in 1506. He begun an edition of Jerom, but died, in 1515, before it was finished. We are indebted to Amerbach for the introduction of the beautiful and useful Roman type instead of the Gothic and Italian.

AMERCEMENT, or AMERCIAMENT, from Fr. *Merci*, in *Law*, a pecuniary punishment imposed upon the offenders, at the discretion of the court; frequently also called *miseri-cordia*.

In the new Terms of the Law, *amercement* is said to be properly a penalty assessed by the peers or equals of the party *amerced*, for an offence done; for which he puts himself upon the mercy of the lord.

There is this stated difference between fines and amercements; that fines are punishments certain, and determined by some statutes; but amercements are arbitrary impositions, proportioned to the fault, and wholly at the mercy of the court.—Manwood, in his *Forest Law*, makes another difference; as if an amercement were a more easy and merciful penalty, and a fine a more sharp and grievous one. If amercements were too grievous, release might be sued by an ancient writ called *moderata misericordia*.

Fines also are imposed and assessed by the court; amercements by the country: and no court can impose a fine, but a court of record; other courts can only amerce. 8 Rep. 39. 41. A town shall be amerced for the escape of a murderer in the day-time: and if the town be walled, it is said it shall be subject to amercement, whether by day or night. 3 Inst. 53.

By the statute of *Magna Charta*, c. 14. a freeman is not to be amerced for a small fault, but proportionable to the offence, and that by his peers. 9 Hen. III. c. 4.

Before this period amercements were often excessive, and they were imposed on a thousand different occasions, not only for real crimes, but for trivial or imaginary offences, and on the most frivolous pretences; of course they were the sources of infinite vexations to the subjects, as well as of great riches to the sovereigns of England. They fell heavy not only on the common people, but upon the greatest prelates, and most powerful barons of the kingdom. This gave occasion to the above-mentioned article of the great charter, and to the rules founded upon it, which enacted, that no

man should have a larger amercement imposed upon him than his circumstances or personal estate would bear; saving to the landholder his contencment or land, to the trader his merchandize, and to the countryman his wainage, or team and instruments of husbandry. In order to ascertain which, the great charter also directs, that the amercement, which is always inflicted in general terms ("*fit in misericordia*,") shall be set, *ponetur*, or reduced to a certainty, by the oath of good and lawful men of the neighbourhood, which method of liquidating the amercement to a precise sum was usually performed in the superior courts by the assessor or assessor of the coroner, a sworn officer chosen by the neighbourhood, under the equity of the statute Westm. 1. c. 18. and then the judges estreated them into the exchequer. But in the court leet and court baron it is still performed by assessors, or suitors sworn to assere, that is, tax and moderate the general amercement, according to the particular circumstances of the offence and the offender. Amercements imposed by the superior courts on their own officers and ministers were assessed by the judges themselves; but when a pecuniary mulct was inflicted by them on a stranger, (not being party to any suit), it was then denominated a FINE; and the ancient practice was, when any such fine was imposed, to inquire by a jury, *quantum inde regi dare valeat per annum, salva sustentatione sua, et uxoris, et liberorum suorum*. And since the disuse of such inquest, it is never usual to assess a larger fine than a man is able to pay, without touching the implements of his livelihood; but to inflict corporal punishment, or a limited imprisonment, instead of such fine as might amount to imprisonment for life. Hence it happens that fines in the king's court are frequently denominated ransoms, because the penalty otherwise falls upon a man's person, unless it be redeemed or ransomed by a pecuniary fine; according to an ancient maxim, *qui non habet in crumena luat in corpore*. Yet, where any statute speaks both of fine and ransom, it is holden, that the ransom should be treble to the fine at least. Blackst. Com. vol. iv. p. 380.

A court leet can amerce for public nuisances only. 1 Saund. 135. For a fine and all amerciaments in a court leet, a distress is incident of common right: but for amerciament in a court baron, distress may not be taken but by prescription. 11 Rep. 45. When amerciament is agreed on, the lord may have an action of debt, or distrain for it, and impound the distress, or sell it at his pleasure; but he cannot imprison for it. 8 Rep. 41. 45.

There is also amercement in pleas in the courts of record, when a defendant delays to tender the thing demanded by the king's writs, on the first day. Co. Litt. 116. And in all personal actions without force, as in debt, detinue, &c. if the plaintiff be non-suited, barred, or his writ abate for matter of form, he shall be amerced; but if on judicial process, founded on a judgment and record, the plaintiff be non-suited, barred, &c. he shall not be amerced. 1 Nelf. Abr. 206. And an infant, if non-suited, is not to be amerced. Jenk. Cent. 258.

Amerciament royal, is used by some to denote a pecuniary punishment laid upon a sheriff, coroner, or such-like officer of the king, by justices, for some offence or abuse in his office.

AMERI, in *Botany*. See INDIGOFERA.

AMERIA, in *Ancient Geography*, a district of Armenia, mentioned by Strabo (tom. ii. p. 835.) situate in the vicinity of Cabira, in which was a temple of the month Pharnacus, a number of priests or Hieroduli, and a sacred territory, the fruits of which were appropriate to the pontifex. The

month Pharnacus, which was the deity denominated Luvius among the ancients, was held in such veneration, that the oath by the fortune of the king and of the mount Pharnacus, was called the *royal oath*.

AMERIA, now AMELIA, a town of Italy, south-west of Spoleto, founded, according to Cato, 964 years before the Persian war, or 1135 years B. C. Augustus established a colony in it. The celebrated Roscius is said to have been a native of this city. The whole of its territory was assigned by Augustus to the veteran soldiers.

AMERIA, in *Geography*, a town of Asiatic Turkey, in Natolia, 72 miles east of Kutaja. N. lat. 39° 25'. E. long. 32° 14'.

AMERICA, *General History of*. Throughout the history of the world no event more curious, in the eye of the philosopher, has happened than the discovery of the new continent, which, with its surrounding seas, forms a complete hemisphere of our planet, whereof the ancients knew no more than a hundred and eighty degrees of longitude, which might even, by a strict discussion, be reduced to a hundred and thirty; for, such is the error of Ptolemy, that he shoves back a hundred and forty-eight degrees and more the eastern mouth of the Ganges, which, according to astronomical observations, taken by the moderns, is settled at about a hundred and eight: thus manifestly giving an overplus of forty degrees of longitude in the statement of Ptolemy, who seems to have had no notion of any of the parts beyond what we denominate Cochinchina, which consequently forms the eastern boundary of the world, as known to the ancients, as our first meridian is the boundary of the world to the west.

To pretend that the Phœnicians and the Carthaginians made the voyage to America is an opinion truly ridiculous, and no better supported on authentic documents than the stories related in our times of the pretended navigations of the Chinese towards the shores of Mexico. It is well known, from inquiries made at Pekin, that the work wherein some traces of these navigations to the latitudes of Mexico were supposed to be found, is a romance to the full as gross as the fictions related by Ælian, (Hist. Divers. lib. iii.) in regard to an imaginary country, entirely full of gold, and which has seemed to have a complete conformity with Peru, in the eyes of several of the learned, whose judgment was extremely confined. Notwithstanding what Vossius is pleased to say, in his commentaries on Pomponius Mela, and M. Huet, in his dissertation on the commerce of the ancients, where he cites the *Annals of Ormus*, which nobody knows, it is certain that the Chinese never took long voyages; and that in 1430 they had not any notion whatever of the island Formosa, which is at no greater distance than eighteen leagues from their coast. If they had been in the practice of making long voyages, the ignorance in geography would not be so prodigious as it actually is at present, to such a degree that they have never been able to lay down the map of China: accordingly, whenever they wanted a map of China, they have been obliged to employ Europeans, whose performances we are well acquainted with, and know them to fall very far short of what positive geography has a right to demand concerning so vast a region as Asia.

If any people in Europe in reality did frequent some parts of the coast of North America prior to the æra of the navigations of Columbus and Vesputius, it must have been the Icelanders and Norwegians; since it cannot be disputed that both the one and the other of these people had before the fifteenth century formed settlements in Green-

land, which should at present be reckoned as a part of the new continent. But here, we cannot avoid observing, that we should never have been able to discover the centre of America, if no other way had been found for penetrating thither, than that of Greenland, by reason of the huge bodies of ice which at once prevent any great progress within land, and from making any considerable advances towards the pole. Besides, the danger to be encountered in these high latitudes, the excessive severity of the climate, the want of every species of sustenance, and the little hope of meeting with any treasures to counterbalance the arduous enterprise, would have been enough to dishearten the most intrepid navigators. Christopher Columbus, however, in 1492, discovered an easy passage; and, when we perceive him pushing up as far as the 25th degree of north latitude, to fetch that east wind which commonly prevails between the tropics, and afterwards proceeding in nearly a straight line to the island of St. Domingo, we are almost tempted to believe that he had a previous intimation of that track; and therefore, the Spaniards, with a degree of ingratitude altogether monstrous, endeavoured to deprive that great man, because he was not born in Spain, of the credit of his discovery, by publishing on this occasion the most puerile and contradictory fables. The truth of the matter is, that Columbus submitted to be guided by one of his brothers, named Bartholomew, who was a geographer by profession; and in drawing his maps of the world, such as they were able to make them at that time, he was perpetually astonished, that of three hundred and sixty degrees of longitude, only a hundred and eighty at most were known; and, of course, there remained as much of the world to be discovered as had already been found out: and as it seemed by no means probable that the ocean could extend, without any interruption, over one entire hemisphere, he maintained, that by keeping constantly to the west from the Canaries, they must infallibly come either to islands or to a continent. And in fact so it turned out. They first came to islands, and then to a continent, where every thing wore the face of such extreme desolation, that one cannot reflect upon it without amazement. It is by no means our intention here to follow the ancient stories, in which, to the credulity of childhood has been added the dreams of dotage. In these accounts whatever we meet with favours of the marvellous; nothing is examined into: it shall be our business, therefore, to endeavour at communicating to the reader clearer notions and juster ideas.

Among the various populations dispersed throughout the forests and deserts of this newly discovered world, it is not possible to point out above two that had formed any sort of political society, the Mexicans and the Peruvians, and even their history is stuffed with fables. Besides, their population must have been much lower than has been stated, since they had no iron instruments for felling the trees, nor for tilling the ground; they had no animal fit for drawing the plough, and the construction of the plough itself was even unknown to them. It is easily conceived, that when the labour of the field must altogether be done with a wooden shovel, and by the hand, it is impossible to lay out much ground in agriculture: and without a regular agriculture, wherein the labour of animals concurs with that of mankind, no people can become numerous in any part of the world. It is, however, very surprising, that at the time of its discovery America possessed scarcely any animal fitted for tillage: the ox and the horse were unknown, as well as the ass, which was anciently employed in culture by several nations of our continent, as in Bœtica and Lybia, where the lightness of the

the foil, says Columella, (*De Re Rust. lib. vii.*) enabled this animal to supply the place of horses and oxen. It is commonly thought that the American bison might have been serviceable in tillage; but the bison being of a rude untractable nature, it would have required a long series of generations to tame him gradually for the purposes of husbandry. Now this is what no one ever even thought of in America, where the people are both less indoltrous and less inventive than the inhabitants of our hemisphere: their laziness and indolence particularly struck the more attentive and sagacious observers. In short, the stupidity they evince on certain occasions is such, that they seem, according to the expression of M. de la Condamine, to live in eternal infancy. (*Voyage sur le fleuve des Amazones.*)

At the same time no irregularity has been noticed in their outward organs, unless we chuse to except the absolute defect of a beard, and of that down which persons of both sexes should have on the chin, after arriving at the age of puberty. It is in vain to affirm that the germ of this soft down is destroyed or eradicated, since at a very advanced age, here and there some scattered hairs of it grow, which they commonly pluck up with nippers made of shells. Their stature differs not from that of others of our species in the temperate zones: for beyond the arctic circle, the tribe of Esquimaux or Innuits, though of American descent, is composed of only short people; because the action of the extreme cold is hostile to the complete expansion of the members; and the case is nearly the same with the inhabitants of Greenland, which is known to have been originally peopled by hordes of American race, of which the perfect agreement between the language of the Greenlanders and that of the Esquimaux leaves no room to doubt.

Nothing but a blind fondness for the marvellous could have occasioned the propagation of such absurd fictions as those relating to a gigantic race, found on the Magellanic shores, now customarily denominated Patagonia. The most sensible navigators, as Narbrough, (*Voyage to the South Seas*), who have had communication with the Patagonians, describe them to be of the ordinary stature of mankind, living by small troops in those immense regions, where the English, who traversed them from one extremity to the other, from Cape Blanco to Buenos Ayres, saw not an inch of ground cultivated, nor the least trace of tillage; inasmuch that the difficulty of finding the means of subsistence must have been exceedingly great, prior to the time of the discovery, and while there was not a horse in existence, since the flesh of that animal is at present almost the sole nourishment of the Patagonians who occupied the midland countries between the river de la Plata, and the 45th degree of south latitude. Such is the extreme indolence of these savages, that they devour the very animals by means of which they might clear their deserts, and at length put an end to that miserable mode of existence in which they are not a jot above the level of the beasts under the guidance of instinct alone.

We shall not, as has been hitherto done, reckon among the particular and distinct races, those Blasards that are found in numbers by no means considerable at Costa Rica, and the isthmus of Darien, (*Waser's Description of the Isthmus of Darien, and Coreal Voyages, tom. i.*) this being only a disease, or an accidental alteration in the temperament of the parents who produced these discoloured individuals, who are known to bear a great analogy with the white negroes, or the Dondos of Africa, and with the Kakerlakes of Asia. The distemper in which these symp-

toms originate attacks more or less all the black or extremely swarthy people in the hottest climates of the globe. The pygmies, spoken of in an account translated by M. Gomberville of the French academy, the himantopodes, or savages having the inflection of the knee turned backwards, and others that have but one leg, may be ranked in the same class with the Amazons, and the inhabitants of El Dorado, among the absurdities which some travellers have been weak enough to believe, and vain enough to publish. All the monstrous people that have been seen in the New World, were rendered so by artifice; such as those that have the head completely round, and are called bowl-heads, those who have it flatted, and are denominated plagiocephali; in short, such as have it conical, or lengthened out, and are styled macrocephali. Among a naked people, where the garments cannot be affected by fashions, they influence the body itself, and produce those various deformities which have been noticed among the savages, some shortening their neck, others piercing the cartilage of the nose, the lips, the balls of the cheeks, others lengthening their ears, or causing their legs to swell by means of a ligature above the ankle.

It is not known, and it will ever be a matter of difficulty to trace the true source of the venereal disease with which the Americans were afflicted in the West India islands, the Caribbees, at Florida, in Peru, and throughout a great part of Mexico: on this subject several curious conjectures have been thrown out, some of them sufficiently ridiculous. It has been pretended, that the flesh of the fish intoxicated with the cururn-ape, and the flesh of the game killed with arrows poisoned with a species of woodbine, called woorara, produced this contagion among them. But the ancient wild people of our continent poisoned in the same manner their hunting weapons, without any consequences in the least degree prejudicial to their health; and it is a well-known fact, that the fishes killed in the ponds with the *cocula orientalis officinarum*, and that the fowls slain in some districts of the Alps with knives rubbed over with *suc de napel*, afford a very wholesome nutriment. Besides, in the island of St. Domingo, where the venereal disease was extremely rife, the use of poisoned darts was not in practice as among the Caribs and several tribes on the Terra Firma. Neither is it true, that the sting of a serpent or lizard of the iguan tribe, or that the human flesh eaten by these anthropophagi, engendered the venereal virus in the blood of the inhabitants of the New World. The hypothesis of M. Astruc, as stated in the last edition of his great work "*De Morbis Venereis*," borders far more on probability than the fanciful opinions just mentioned; though this hypothesis of that famous physician is by no means generally adopted. We shall content ourselves with observing, that the venereal disease may have been a morbid affection in the temperament of the Americans, like the scurvy in the countries of the north: for, after all, we are not to imagine that this distemper made the same ravages in America as it did in Europe some time after its transplantation.

The almost total want of culture, the vast extent of the forests, the immense tract of country, the waters of the rivers exundated from their beds, the infinite number of swamps and lakes, together with the host of insects which are a natural consequence from all these, rendered the climate of America insalubrious in certain parts, and much colder than it might otherwise be expected, considering the relative latitude of its territory. The difference of temperature in the two hemispheres, under the same parallels, has been estimated at twelve degrees, and by a closer calculation, it might

might even be fixed at some degrees more. Now, these several causes operating conjointly must have had an influence on the constitution of the indigenous people, so as to produce some alteration in their faculties: accordingly, it is only to a want of penetration that we can ascribe the little progress they had made in metallurgy, the first of all arts, as that without which the others fall, as it were, into a lethargy. It is well known that nature has not denied iron mines to America; and yet no nation of America, neither the Peruvians nor the Mexicans, possessed the secret of forging that metal; whereby they were deprived of many conveniences, by rendering it impossible for them to make regular falls of timber in their forests, and to restrain the rivers within their beds. Their hatchets of stone could not enter the trunks of trees, except by the application at the same time of fire to them; so that they were forced to convey away all the parts reduced to coal, in order to prevent the flame from coming at the rest. Their process was nearly the same whenever they wanted to make barks of a single piece, or cauldrons of wood for boiling their victuals, by afterwards casting in red hot stones; for comparatively but few of the savages had the art of making vessels of clay. The farther these methods were from perfection, the more time they required in the practice: therefore, in South America it was often observed, that men were employed for two whole months in felling three trees. To conclude, it will be easily imagined, that the more stationary populations, as the Mexicans and the Peruvians, notwithstanding the want of iron, had acquired a degree of industry greatly superior to the mechanical skill possessed by such as were dispersed by families, like the *Worons*, where they have not sufficient resources, says Dr. Bancroft, for procuring the most necessary part of clothing; and it is only with the reticulation found in the cocoa nut, or with some bark of trees, that they cover the organs of generation. Natural History of Guiana.

Hence we are not to be surpris'd, that the New World contained so few inhabitants at the time of its discovery: for the savage life is repugnant to the multiplication of the species beyond what we should at first sight imagine; since the less the savages cultivate the soil, the more ground they want to live upon. In the northern tracts of America districts of forty leagues have been travelled over in all directions, without meeting with a single hut, or perceiving the smallest vestige of a habitation. After a march of nine or ten days, keeping always the same course, the traveller has perhaps come up to a petty horde, or rather a family, separated from the rest of mankind, not only by mountains and deserts, but also by its language differing from all known tongues. Nothing more strongly proves the little communication then subsisting between the Americans in general, than the incredible number of dialects spoken by the different tribes of savages. Even in Peru, where social life had made some faint advances, a great variety of languages was nevertheless found, reciprocally incomprehensible or unintelligible, and the emperor could not issue his commands to the greater part of his subjects, except by means of interpreters. It naturally occurs on this occasion, that the ancient Germans, though distributed likewise in populations, separated by vast deserts, yet spoke only one mother-tongue; and a person might, before the Augustan age, as well as at present, make himself tolerably well understood by means of the *Tudisque*, from the centre of Belgium, to the banks of the Oder: whereas, in the New World, we need only, says Acolta, to cross a valley for hearing another jargon. *De procur. Indorum salut.*

The depopulation was perhaps still greater in the more southern parts of America than in the north, where the forests had usurped every thing; so that much of the great game might propagate, and sustain themselves in them, and at the same time afford nourishment to the hunters; whereas in the Magellanic countries there are plains upwards of two hundred leagues in extent where no wood is seen, but only bushes, briars, and noxious weeds. (*Beschreib. von Patagonien.*) Whether it be that the quality of the briny or acid waters found there is repugnant to the propagation of forests, or that the ground there secretes depositions of gravelly and stony substances, from which the roots of large trees can derive no aliment. In short, for forming some idea of the desolation of the Magellanic regions, it will suffice to say, that the English, carried into slavery by the Patagonians, have often travelled, in the train of their barbarous masters, for a whole fortnight together, before they came up with a few miserable huts covered in with horie hides. In the village that has been stiled the capital of Patagonia, and where the grand cacic resided, they could reckon in 1741, no more than fourscore persons of both sexes. *Anson's Voyages.* Besides, in the southern degrees of latitude, there are low lands, one part whereof is marshy, and the other annually overflowed, because the rivers and torrents, which have not channels proportionate to their volume of water, deluge the country to immense distances on the access of the rainy season in the torrid zone. From Sierra Itatin to the extremity of the mission of the *Moxes*, about the fifteenth degree of south latitude, through a space extending upwards of three hundred leagues, are found either these swamps or those lands where the inundations frequently drive the inhabitants up the mountains: accordingly there were seen but few, and they spoke thirty-nine languages, not one of which had any affinity with the rest. *Relation de la Mission des Moxes.*

It is thought that the entire population of the New World, at the time of its discovery, might be forty millions; which falls short of the sixteenth part of the total amount of the human species, upon the computation of those who give to our globe eight hundred millions of individuals. Yet it is supposed, that in dimension the new continent is nearly equal to the old one: however, it is of consequence to observe, that the calculations of Templeman, Struyek, and several others, in regard to the surface of America, reduced to square miles, are not entitled to much confidence, as the geographical maps are still too defective for such an operation; and it would scarcely be believed, that all the known maps contain an error of almost a hundred leagues in the longitude alone of some stations of Mexico, as that longitude has been lately determined by an eclipse of the moon. But this is not all, inasmuch as there is a tract of country beyond the *Sioux* and the *Assenipoils*; the commencement whereof towards the west is not known any more than where it terminates towards the north.

M. Buffon had already observed, that some Spanish authors must have been guilty of great exaggerations in what they relate concerning the number of persons who, according to them, were found in Peru. But nothing more completely proves that these writers have exaggerated, than what we have mentioned of the small quantity of ground rendered productive in this country, where Zarate himself agrees, that there existed only one place that had the aspect of a town, and that town, says he, was *Cuseo*. (*Hist. of the Conquest of Peru*, book i. chap. 9.) Nay, so long ago as the year 1510, the court of Spain saw, that, to remedy the depopulation of the conquered provinces in America, no

other means were left than to transport negroes thither, wherein the regular traffic began in 1516, and cost enormous sum: it is even computed that each African brought to the isle of St. Domingo came to upwards of two hundred ducats, or more than two hundred chequins, at the rate that the Genoese merchants charged for them. The Spaniards have, doubtless, contrary to their own interest, destroyed a great number of Americans, both by the labour of the mines and by atrocious depredations; but it is no less certain, that countries whither the Spaniards never penetrated, as the parts adjacent to Hudson's Bay, are still more desert than others that fell under the yoke of the Castilians.

We now conceive how great the difference in the fifteenth century, between the two hemispheres of our globe. In one, civil life was but just commencing; literature was utterly unknown: the very names of the sciences had scarcely been heard: the generality of trades were wanting: tillage was in so rude a state as hardly to deserve the name of agriculture, since neither the plough nor the harrow had been invented, nor any animal trained to draw them: reason, which alone can dictate equitable laws, had not yet caused her voice to be heard: human blood was shed upon the altars; and even the Mexicans were still in some respects anthropophagi; an epithet that may also be extended to the Peruvians, since, by the confession of Garcilasso, who is by no means prone to calumniate them, they shed the blood of children on the *cancu*, or sacred bread, if that name may be assigned to a paste, kneaded, so as for fanatics to eat it in a kind of temples by way of honouring the deity of whom they had no knowledge. In our continent, on the other hand, societies had so long been formed, that their origin is almost lost in the darkness of antiquity, and the discovery of forged iron, so necessary and so unknown to the Americans, has been in use among the inhabitants of our hemisphere from time immemorial. For, though the process employed for obtaining the malleability of a metal so stubborn in its mineral state be very complicated, yet M. de Mairan has clearly proved that the several æras, at which writers have pretended to fix this discovery, are to be regarded as fabulous. *Lettres sur la Chine.*

It is impossible here to enter into a regular analysis of the systems proposed for explaining the causes of this difference between the two parts of the same globe. It is a secret of nature, on which the human mind becomes more and more confused in proportion as it obstinately determines to fathom it. Nevertheless, those physical vicissitudes, the earthquakes, the volcanoes, the inundations, and peculiar catastrophes, whereof we, who live in the calm of the elements, have not a very accurate idea, may have had some influence in its production: and it is well known at present that the most violent shocks of earthquakes, which are sometimes felt throughout the whole extent of the new continent, communicate no succession at all to ours. Had it not been for the private advices received from different parts, we in Europe should never have known that, on the 4th of April, 1768, the whole tract of America was shaken: whence we may infer, that anciently dreadful calamities may have happened, whereof the inhabitants of our hemisphere, so far from feeling them, have not had the slightest intimation. Neither should we, following the example of some of the learned, apply to the New World the prodigies found in the *Timæus* and the *Critias* of Plato, concerning the Atlantis sunk by a torrent of rain that lasted only four and twenty hours. The basis of this tradition was brought from Egypt, but Plato embellished or disfigured it by a number of allegories, some philosophical and others puerile; such as the victory obtained over the Atlantes by

the Athenians, at a period when Athens was not yet in being: these anachronisms occur so frequently in the writings of Plato, that it certainly was not without reason that the Greeks themselves accused him of being unacquainted with the chronology of his country. *Athen. lib. v. cap. 12 & 13.* The great difficulty is to know whether the Egyptians, who were no mariners, and consequently could be but little versed in positive geography, had any accurate knowledge concerning a large island or a continent situate beyond the pillars of Hercules. Now it must be owned that this is not probable; but their priests, while studying cosmography, might surmise that there were more portions of land dispersed in the ocean than they had knowledge of. The less they knew, from the total want of navigation, the more natural it is that they should have fallen on this conjecture; and especially if it could be shewn that prior to the mensuration of the earth performed in Egypt by Eratosthenes, under Euergetes, the priests had already an idea of the actual dimensions of the globe. However this be, their doubts and their surmises concerning the existence of some large tract of country, had no more relation to America in particular than to all other lands with which they were unacquainted; and the limits of the ancient world, precisely as we have fixed them, remain invariably the same.

That the cataclysm, or inundation of the Atlantis, rendered the sea beyond the straits of Gibraltar so muddy as to make it innavigable, as Plato affirms, is flatly contradicted by all experience from the voyage of Hanno to our own times. And yet M. Gesner, whose erudition is universally acknowledged, thought that the isle of Ceres, spoken of in a poem of very high antiquity, attributed to Orpheus under the title of *Αργοναυσιχα*, was a fragment of the Atlantis: but this isle, which is described by its forests of pines, and particularly by the black clouds which surround it, has no where been found; so that it must have been swallowed up in the abyss subsequent to the Argonautic expedition, even supposing, contrary to all probability, or rather contrary to possibility, that these Argonauts could have come from the Euxine into the Atlantic ocean, by conveying the ship *Argo* from the Borysthenes into the Vistula, to enable them afterwards to enter the Mediterranean by the columns of Hercules, as it is mentioned towards the end of that poem ascribed to Orpheus; whence we may conclude, that there has been no sparing of the marvellous, and that M. Gesner might have been less credulous without any impeachment of his prudence.

If we find any where to the west of us some traces of a continent converted into a multitude of isles, it is doubtless in the Pacific ocean; and we shall not here repeat what the President de Brosse has advanced on this subject in his work, in which he treats of the navigations to the southern parts.

As to those who pretend that the human race has only of late found its way to America, by crossing the sea at Kamtschatka, or the straits of Tschutski, either upon the fields of ice or in canoes, they do not consider that this opinion, besides that it is extremely difficult of comprehension, has not the least tendency to diminish the prodigy: for it would be surprising indeed that one-half of our planet should have remained without inhabitants during thousands of years, while the other half was peopled. What renders this opinion less probable is, that America is supposed in it to have had animals, since we cannot bring those species of animals from the Old World which do not exist in it, as those of the tapir, the glama, and the tajaçu. Neither can we admit of a recent organization of matter for the hemisphere opposite to ours: because, independently of the accumulated difficulties in this hypothesis,

hypothesis, and which can by no means be solved, we shall observe, that the fossil bones discovered in so many parts of America, and at such small depths, prove that certain species of animals, so far from having been recently organized, have been annihilated a long while ago. It is an indubitable fact, that when Christopher Columbus arrived there, there existed neither in the islands nor in any province of the new continent quadrupeds of the first magnitude: there was neither the dromedary, the camel, the giraffe, the elephant, the rhinoceros, the horse, nor the hippopotamus. Therefore the large bones that have been dug up have belonged to species extinct or destroyed some centuries anterior to the epocha of the discovery of that country; since the very tradition of them no longer subsisted among the natives who had never so much as heard talk of any quadrupeds of larger size than those found among them in 1492. Yet the molar tooth, in possession of the late Abbé Chappede, who died in California, was eight pounds in weight; as we learn from the extract of the letter addressed to the academy of Paris by M. Alzate, who affirms, that at Mexico is still preserved the bone of a leg, the knob whereof is a foot in diameter. Some of the large species of the hippopotamus, such as are found in Abyssinia and on the shores of the Zaire, produce grinders weighing upwards of eight pounds; and yet it may be doubted whether there be any elephants having legs that contain parts of such prodigious dimensions as those mentioned by M. Alzate, whose account, however, may not be absolutely exempt from exaggeration. The same may be said of the dimensions given by Father Torrubia, in his pretended Gigantology, to some fragments of skeletons dug up in America, and which are at present pretty generally to be seen in the cabinets of Europe. The late Mr. Hunter, who made this subject his particular study, thought that they belonged to carnivorous animals; and it was not till after he had gone through a long course of comparative anatomy, that he delivered this opinion to the Royal Society of London. [Phil. Transact. for the year 1768.] But if this were true, nature must have acted upon a contrary plan in America to what she has followed in our continent, where all the terrestrial quadrupeds of the first magnitude are frugivorous and not carnivorous. It is a mistake in Prosper Alpinus and M. Maillet, to imagine that the hippopotamus is sarcophagous or carnivorous. The reason whereof seems to be the difficulty that carnivorous animals of the first magnitude would have had in finding sustenance, and that at all times; whereas the vegetables immediately spring up, and in such abundance, as to be more than sufficient for the nourishment of frugivorous beasts of the most enormous bulk: accordingly, the opinion of those who attribute these relics to zoophagous genera is scarcely probable. In vain were the savages who dwell on the banks of the Ohio interrogated concerning their notions about the huge bones that were found on the borders of that river in 1738; they threw no more light on the subject than the inhabitants of Siberia do on the discovery of the fossil ivory of their country, which some of them consider as the spoils of giants, and others as the remains of an animal living under ground, which they call *mammut*, a being more worthy of appearing in the mythology of the north than in the nomenclature of natural history. [See Tooke's View of the Russian Empire, vol. i. p. 26.] Nevertheless M. Bertrand, that sagacious observer, who traversed Pennsylvania and a great part of North America, assures us, that some savages, on seeing oyster-shells found in the chain of the Blue Mountains, reaching from Canada to Carolina, said that it was not surprising to find shells about the Blue Mountains, since they knew that in days of yore the sea had surrounded them with its waters.

This relation is founded on the tradition universally disseminated among all the tribes of America, from the straits of Magellan as far as Canada. They affirm, that in former times the low lands of their continent were submerged, which obliged their ancestors to retire to the heights. It is not without some degree of astonishment that we read in Acosta, that in his time traces strongly marked of that inundation were still seen in several places: "Certe in novo orbe ingentis cujusdam exundationis non obscura monumenta a pritis notantur." [De Natura Nov. Orb.]

However this be, we are unable to explain how all the populations of America had so little commerce and connection with each other, as is proved from the multiplicity of languages in use among them, otherwise than by admitting that their manner of living by the chase or by the fishery not only prevented them from uniting, but even obliged them to retreat from each other. Accordingly, it has been seen, that when distinct tribes have come so near as to intercept the game, it kindles national wars, which only terminate in the destruction or the retreat of the weaker or less courageous tribe. Handfuls of men there dispute for the possession of immense deserts; and the enemies are often at the distance of above a hundred leagues asunder: but a hundred leagues are nothing to hunters, who, in the search of game, or in the distant pursuit of it, always meet in some part or other. The difficulty of fixing boundaries, which is very great even among sedentary nations, is much greater among hordes who roam from forests to forests, and yet pretend to be the absolute proprietors of districts which they only run over.

Such nations as were really fishers, or ichtyophagi, existed only in the northernmost regions of the New World: for, though we find between the tropics savages who are much addicted to fishing, they nevertheless plant several feet of manioc around their huts. But throughout America this culture, as well as that of the maize, was the business of women, and the reason of it is very easy to discover; but little of it was cultivated, so that this employment was not regarded as the principal occupation. Many hunters have even been discovered, as well in the south as in the north, who followed no species of cultivation, living solely on game. As it happened that they were more successful at some seasons than at others, they could only preserve their meat by broiling it: for the nations dispersed towards the centre of the continent had not the slightest knowledge of salt; but almost all those who dwelt in the torrid zone, and even at the extremities of the temperate zones towards the equator, made great use of pimento (*capsicum annum*) or other herbs as hot; and this they were taught by nature. We should here observe, that the physicians of Europe have generally been and are still in an error in regard to spices. In burning climes great and continual use of them is necessary to aid digestion, and restore to the bowels the heat which they lose by a too copious transpiration. Thus travellers inform us that those savages of Guiana, who sprinkle so much pepper over their victuals as to excoriate the tongues of persons not accustomed to it, constantly enjoy a more confirmed state of health than the other people of the country, as the Acoquas and the Moroux, who cannot always procure pimento in sufficient quantities. Even in Europe we see how necessary this spice is to the Spaniards, who sow whole fields with it as we sow barley: in short, it is well known that, in proportion as the heat of the climate augments, it has been found all over Asia and Africa that the consumption of spices has augmented in a direct ratio with that heat.

Among the hunting nations of the New World different compositions, to which we commonly give the name of nutritive powders or condensed aliments, have been discovered, which

which they expressly reduce to a small compass, in order that they may be able the more easily to convey them when they are to take a long course through the deserts, where the ground, often covered with snow to the height of two or three feet, affords no resources except what proceed from the game, which are very uncertain, because many animals then keep close to their coverts, which are sometimes in places at a great distance from those in which they are in quest of them. Moreover, we gather, from various accounts, and even from some passages in history, that the generality of ambulatory nations of our continent have had or still have similar practices: the savages of Great Britany composed a kind of these pastes with karemyle, which is supposed to be the tubercules of the magion, called by the country folks wild vetches, though in fact it is a *lathyrus*. By swallowing a ball of this drug the Bretons were enabled to dispense with all other aliment for an entire day. [Dio Cassius, in Sever.] The case is nearly the same with the green powder, in use among the savages dispersed along the river Susquehanna, which falls into Chesapeake Bay: it will suffice here to observe, that this substance is composed of torrefied maize, which forms the principal ingredient, roots of angelica and salt. It may be conjectured, however, that these barbarians, before they had any communication with the colonies of Europe, employed no salt in the composition, as it cannot add much to the alimentary properties.

As to the method of procuring fire, it was the same throughout the whole extent of the New World, from Patagonia to Greenland; that is, by rubbing pieces of hard wood against other very dry pieces, so long and so forcibly till they emitted sparks or kindled into a flame. It is true, that among certain populations to the north of California, they had the method of inserting a kind of pivot in the hole of a very thick plank; and by the circular friction produced the same effect with that above mentioned. [Muller, Reise und Entdeckungen von den Russen.] It should seem as if it were insufficient alone, or, if the expression may be allowed, the innate industry of man, that taught him this practice: so that, on this supposition, what some accounts relate concerning the inhabitants of the Marianes, the Philippines, Los Jordanas, and the Amicuanes, who were ignorant, as they pretend, of the secret of procuring fire, must be entirely without foundation. And if we find similar facts in the geographers of antiquity, as Pomponius Mela, in regard to certain tribes of Africa, it is necessary we should know that this author drew his information from the relations of Eudoxus, whom Strabo describes as an impostor, who, in order to have it believed that he had doubled the Cape of Good Hope, takes the liberty of telling abundance of falsehoods. It appears, from the history of China, and particularly from the custom still subsisting among the Kamtschadales, the Siberians, and even among the Russian peasants, that the method of causing wood to take fire by friction must have been common in our continent prior to the knowledge of steel and of pyrites: the heat felt by savage man in his hands on rubbing them taught him the art.

As there were in America a very great number of petty nations, of which some were more deeply sunk in barbarism than the rest, and in a total ignorance of all that constitutes the rational animal, it is extremely difficult to distinguish accurately the customs adopted only by some particular tribes from the practices generally followed. There are travellers who have thought that none of the savages of the New World had the smallest idea of incest, at least in the collateral line, and that brothers indiscriminately married their sisters, or cohabited with them without marriage; which gave occasion to some persons to imagine that both the physical and moral faculties of those savages must have undergone an alteration,

since it is thought that it is with mankind as with domestic animals, whereof some become stunted by incestuous copulations; a circumstance that has pointed the necessity of mixing or crossing the races, for the purpose of maintaining the vigour and perpetuating the beauty of them. It is evident, from experiments recently made on a single species, that the degeneracy is greater and more rapid by a succession of copulations in the collateral than in the direct line: a result which certainly would not have been expected. However, according to the "Lettres Edifiantes," and the accounts of fathers Lafiteau and Guinilla [Mœurs des Sauvages & Histoire d'Oronoque], it is certain that there existed several tribes in America, among whom marriage was not contracted even in the third degree of parentage; so that it cannot be said that the conjunctions which we term illicit, or incestuous, were in general practice there, as they undoubtedly were among the Caribs and several others. Garcilasso likewise relates [Histoire des Incas] that the grand cacics, or the emperors of Peru, by a curious sort of polygamy, married their sisters and their cousin-germans at the same time. He adds, indeed, p. 68. tom. ii. that this custom extended not to the people; but it is a fact that seems to us almost impossible to explain. However, we ought not to give implicit faith to all that we read in Garcilasso touching the legislation of the Peruvians; besides, he agrees that, among the hordes of this country, where the authority of the grand cacic or emperor was unsettled, as among the Antis, "marriage was unknown; when nature inspired them with desire, chance gave them a mate, taking whatever woman they met; their daughters, their sisters, their mothers, were indifferent to them; these last, however, were more excepted. In another canton," he adds, "the mothers kept their daughters with extreme care, and when they married them, elles les desfloroient en public de leurs propres mains, pour montrer qu'elles les avoient bien gardées," tom. i. p. 14. This last custom, if true, would appear still more astonishing than the incest, which must have really been in vogue among the petty hordes, composed of not above 130 persons, such as are at present seen in the forests of America, than among the more numerous tribes; and especially if we reflect on the multiplicity of languages reciprocally unintelligible, which prevented these petty hordes from procuring wives from their neighbours.

It should here be remarked, that what we have mentioned on the subject of the degeneracy that may arise from incestuous copulations to the human race, as well as to several species of animals, is nothing more than a bare supposition. The truth is, that we are not at present, nor are likely soon to be, sufficiently informed on a subject of such importance, for being able to speak on it with confidence; for it would be to no purpose here to cite the example of some nations of antiquity, particularly that of the Egyptians, whose laws, which are thought to be the best known, are often the least understood. The Greeks, who wrote on the history of Egypt after the death of Alexander, might easily have confounded the sanctions of a foreign code, adopted under the dynasty of the Lagides, with the sanctions of the national code, wherein we, who have made it our particular study, have not been able to find any satisfactory proof of the law that is conjectured to have existed there prior to the time of the conquest of the Macedonians; but a more ample discussion of this matter would here be certainly out of place. What convinces us, however, that we ought not to insist on the necessity of crossing the races in regard to mankind, as we do when speaking of the domestic animals, is, that the Circassians and the Mingrelians constitute a people who never mingle with any other, and with whom the degrees of consanguinity that prevent marriage are extremely con-

tracted; and yet their blood is generally known to be the best in the world, at least in the far west; and it is by no means credible that the men there are as ugly as is pretended by the Chevalier d'Arvien, in his *Voyages au Levant*, whose testimony is in direct opposition to M. Chardin, who had been upon the spot, whereas M. d'Arvien never was. On the other hand, the Samoyedes, who intermix neither with the Laplanders nor with the Russians, compose a people extremely mean and ill-favoured, and absolutely beardless, although we know, beyond all doubt, from the observations of M. Klingkædt, that the Samoyedes never contract incestuous marriages, as has been asserted by some writers who have been very ill informed.

In the climate of America there may exist some particular causes why certain species of animals are smaller than the analogous races of our continent; such as wolves, bears, lynxes, and some others. It is likewise in the qualities of the soil, of the air, of the nourishment that M. Kalm thinks we should seek the origin of that bastardisement that follows among the cattle transplanted from Europe into the English colonies on the main land, from the fortieth degree of latitude to the extremity of Canada. [Hist. Nat. & Civ. de la Pennsylvanie.] And the same thing is observed in the northern parts of Russia. As to savage man, the coarseness of food, and the little inclination he has to labour with his hands, render him less robust than we should be disposed to believe, were we ignorant that it is the habit of work that principally fortifies the muscles and nerves of the arm, as the habit of hunting enables the Americans to sustain long marches: and it was probably this that determined M. Fourmont to give those nations the appellation of running nations, [Reflexions Critiques,] though they neither run nor hunt, except when forced to it by the most pressing necessity. For while they have any provision of flesh preserved by broiling after their manner, they remain day and night lying at length in their huts, which necessity alone ever forces them to leave; and it is well known at present, from repeated observations collected in different regions, that all savages in general have so great a propensity to idleness, that it forms one of the characteristics that most distinguish them from civilized people. To this shameful vice must be added an insatiable thirst for spirituous or fermented liquors, and then we shall have a tolerably just idea of all the excesses whereof these barbarians are capable. Those who imagine that extreme intemperance in drink prevails only among people situated in cold climates are much mistaken, since we learn from all accounts, that in the hottest as well as in the coldest climates, the Americans are as furiously addicted to intoxication, as often as they can find opportunity, and they would find an opportunity if they were less indolent. But, as they cultivate maize and manioc only in very small quantities, the primary substance from which inflammatory liquor is extracted is frequently wanting to them; for we know that the caouin, the pivoré, the chica, and other factitious beverages of that nature are mostly drawn from the flour of maize and cassave. The hordes that absolutely cultivate nothing at all, as the Moxes, the Patagonians, and numberless others, employ roots, blackberries, and other wild fruits, for giving a taste to the water, and communicating to it an inebriating quality; which is very easily done by means of the fermentation which comes on of itself. It is supposed that the cold and phlegmatic temperament of the Americans conducts them more than other men to those excesses, which may be termed, with M. Montesquieu, a national intoxication: the liquors, however, which they brew themselves are not by far so destructive to their health as the brandy sold to them by the Europeans, making as much havoc among them as the

small-pox, which the Europeans likewise carried with them into the New World, where it is particularly fatal to such of the savages as go naked, because their epidermis, and their mucous texture being always exposed to the air become thick, and their pores are still more closed by the greasy and oily colours with which they smear the whole body, to defend it from the stings of the insects, swarming in multitudes, beyond all imagination, in the forests and uncultivated places: and it is the persecution they undergo from the maringuins and musketoes that has also taught them the use of smoking tobacco.

The ancient accounts talk much of the extreme old age to which the Americans attain; but it is now well known that gross exaggerations have slipped into these narratives, and have probably given encouragement to that ridiculous impostor that appeared in Europe under the name of Hultazob, attempting to pass for an American six 500 years old. It has been remarked by us, and Dr. Bancroft made the same observation at Guiana in 1766, that it is impossible to know exactly the age of savages, because some are totally destitute of numerical words, and with others the numerical words are scarcely carried as far as three; they have no registers, nor any thing that can supply the place of them; and, for want of calendars, they are often ignorant not only of the day, but even the year of their nativity. In general they live to the usual term with the rest of the species, at least in the northern countries: for the heat between the tropics, by exciting a continual perspiration in the body, there abridges the course or the dream of life. Nothing is more true, however, than that almost all the American women bring forth without pain and with extreme facility; so that it scarcely ever happens that any die in childbirth, or from the consequences of it: histories relate, that before the arrival of Pizarro and Almagro they had never heard of midwives at Peru. Hence it has been surmised, that this effect was only owing to a particular configuration of the organs, and likewise to that want of sensibility observed among the Americans, of which striking instances are found in the relations of travellers. Almost 200 years had elapsed before the method employed by the female savages for fastening the umbilical cord of their children came to our knowledge: it is a great mistake to pretend that they tie it, and then to add that it is a practice pointed out by nature to all the nations in the world. They do not tie it, but apply a burning coal to it, which carries off one part, and the other shrivels up to such a degree that it can never afterwards open. If nature has taught a method of process in this respect, it must be confessed that it is a difficult matter to distinguish it from those which she has not taught.

Among the Americans very few individuals have been found maimed or deformed from their birth; and the reason is, because, like the Lacedæmonians, they had the barbarity to destroy such children as by a vicious organization, or some natural deformity, were incapable of procuring themselves a livelihood from the fishery or the chase. Besides, as the savages have no arts, so neither have they the diseases incident to artizans, and never dislocate their limbs in raising edifices or managing machines. The long journeys that pregnant women are obliged to take, sometimes occasion them to miscarry, but it seldom happens that the violence of the movement maims the infant in the womb. The absolute deficiency of all kinds of domestic cattle, and of course the total want of all milky diet, is the reason that the American women keep their babes a long time at the breast; and that when they are delivered of twins, they sacrifice that which appears to them the weakest of the two: a monstrous practice, but introduced among petty roving nations, where

the men never take any burden that might encumber them in the chace.

Nothing is more surprizing than the observations that are found in the memoirs of some travellers concerning the stupidity of the American children they have attempted to teach. Marcgrave asserts [Comment. ad Hist. Brasiliæ], that in proportion as they approach the term of adolescence their capacities seem to contract. The miserable state to which we know, that education is reduced in the colonies of South America, that is to say, among the Portuguese and Spaniards, might induce us to suppose that the ignorance of the masters may be sufficient to occasion that of the scholars; but we have not seen that even the professors of the university of Cambridge in New England have yet formed the minds of any young Americans, so far as to enable them to produce them in the literary world. We shall here only remark, that, in order to ascertain how far the intellectual faculties of the native Americans are extensive or confined, we ought to take their children while yet in the cradle, and conduct their education with great gentleness and patience; for after these children have contracted, during a number of years, the barbarous or savage manners of their parents, it is extremely difficult to efface from their minds those impressions that have struck the deeper root from their being the first. Besides, the experiment should not be confined to two or three subjects, but extended to a great number, since even in Europe, out of such multitudes of children as are put to study from their earliest years, such a small number of reasonable men are obtained, and a still smaller of enlightened persons. Is it, however, from a few merchants of America, from a few adventurers, guided in all their actions by the most sordid avarice, that we are to look for these arduous attempts? Alas, we should form no such expectations!

There would be no need to mention the Creoles, as their history is not necessarily connected with that of the natives of the new continent, were it not expedient to observe, that, even granting that Thomas Gage and Corcal, or the traveller who has borrowed this name, have grossly exaggerated in their accounts of the imbecility or rather brutalization of the Spaniards born in the West Indies; [Descript. & Voy. aux Indes occident.] it is nevertheless true, that these Creoles have been generally supposed to have undergone some alteration from the nature of the climate; and that being a misfortune and not a crime, Father Fejoo ought to have been a little more candid in what he has written in their justification, since it should seem that he never would have thought of vindicating them had he not conceived that the glory of the Spanish name was concerned. Such prejudices, however, are unworthy of a philosopher, in whose sight the glory of all the nations in the world should be as nothing, when put in the balance against truth. Readers of any penetration will easily perceive that it was neither to envy nor to any private resentment against the Spaniards that what has been seen of the alteration brought on in the temperament of their Creoles is to be ascribed, since to the full as much has been said of the Europeans, established in the North of America, as any one may convince himself by reading the history of Pennsylvania, which we have already had occasion to cite. If the Creoles had written works capable of immortalizing their name in the republic of letters, they would not have been in want of the pen and the inflated style of Jerome Fejoo to make their apology, which they alone could, and they alone ought to have done. Neither was it from want of time that they neglected it, since Corcal, who has depicted them, as we observed, in such unfavourable colours, failed for America in 1666. In short, the farther

culture proceeds in the interior of the New World, by draining the morasses, by felling the timber, and clearing the woods, the more also will the climate change and soften; which is a necessary consequence, observable from year to year; and that we may here fix exactly the period of the first observation made in this respect, we shall remark, that in the last edition of the Recherches philosophiques sur les Americains, there is a copy of a letter, by which it appears, that so long ago as the year 1677, this change of climate was already perceived, at least in the English colonies, which every one knows to have been the most pertinaciously bent on tilling and ameliorating the ground, on which the savages bestowed hardly any care; they expected all from nature, and nothing from their own industry. It is certainly a grand mistake to suppose that the abundance of game, of fish, and of fruits obtained without culture, retarded the progress of civilized life throughout almost the whole extent of America; to the northern point of Labrador, and all along the coasts of Hudson's bay, from Munk harbour to Churchill river, the sterility is extreme and incredible. Now, the small bands of the human species that have been met there, are as savage, at least, as those that roam at the centre of Brazil, of Guiana, and all along the Maragnon and the Oroonoko, where are found more alimentary plants, more game, more fish, and where the ice never prevents fishing in the rivers. On the contrary, it appears, that the possession of a grain so easily raised and multiplied as the maize, might have induced the Americans, in some provinces, to leave off the ambulatory life, and forego the chace, which renders the heart of man hard and pitiless. It is, however, very certain, that some of those tribes who possessed the seed of the maize, were still anthropophagi, as the Caribs of the main land, who were seen in 1764, to eat the flesh of the Maroons that had revolted against the Dutch, in their settlements on the Berbice. (Naturgeschichte von Guiana, § 161.) Nevertheless it is known to be a fact, that these barbarians, of whom we are now speaking, cultivate not only the manioc, but also the pisang, *musa paradisiaca*; and unhappily they are not the only ones among the Americans, who, without being compelled to it by any species of dearth, have defiled their tables, by serving on them pieces of human flesh, roasted on large wooden spits, or boiled in marabouts.

There is no difficulty in supposing that some travellers may have exaggerated the number of these man-eating hordes; but it is undoubtedly true that they have been found in the south, in the north, and between the tropics. The Atacapas of Louisiana, who, in 1719, ate up a Frenchman, named Charleville, dwell at the distance of more than eight hundred leagues from the district of the Caribs, in huts between the shores of the Essequibo and the Oroonoko; and thence again it is necessary to make an immense journey into the continent to arrive at the Encavellados or long-haired blacks, who likewise roast their prisoners; so that this species of barbarism is common to such nations as cannot have borrowed their manners from one another, nor have been corrupted to such a degree by the force of example.

It is not surprizing that, in the immense quantity of particulars supplied by the accounts concerning the religious practices of the Americans, some falsehoods should have slipped in, whereof some are already perfectly known, and others will be so in proportion as travellers shall become more enlightened than the generality have hitherto been of those who have spoken of the different parts of the New World; monks and people who had no pretensions to philosophy, in any sense that this term can be understood, have taken upon them to write things that sensible persons have repented that

they ever read. We shall only illustrate this observation by one fact which will suffice for enabling the reader to form a judgment on many others. It has been affirmed that several savages of the southern provinces worshipped a gourd or pumpkin; now let us examine how this must be done. Just as the pretended forecers of England make use of a magical drum which they beat in order to drive away the devil whenever they think him lodged in the body of a sick person whom they have not been able to cure by means of their ordinary remedies; so some conjurers in America employ a gourd, which, after extracting the pulp, they fill with pebbles; so that on shaking it a noise is produced that may be heard to a considerable distance during the night. It is natural enough that the savages who are not initiated into the jugglery, should entertain various fancies concerning this mysterious instrument, not unmixed with some degree of dread; accordingly they do not venture to touch or even to approach it; and this is the whole of the affair about the adoration of the gourd. It is to no purpose to interrogate these barbarians on the subject of practices so gross, and many others infinitely more superstitious; the poverty of their language, of which the dictionary might be comprised in a single page, forbids all explanation. We know that even the Peruvians, though united in some sort of political society, had not yet invented terms for expressing either metaphysical beings, or the moral qualities which most distinguish mankind from brutes, as justice, gratitude, and mercy. These qualities were in the number of things that had no name; virtue itself had none in that country on which so many exaggerations have been bestowed. Now, among the petty wandering hordes, the paucity of words is still incomparably greater, to such a degree that every species of elucidation on matters of morality and metaphysics is utterly impossible.

They are certainly mistaken who imagine that among savages religion is extremely simple, extremely pure, and that its corruptions increase in proportion as the people make farther advances in civilization. The truth is, that both savages and civilized people equally plunge into horrid and cruel superstitions, when not under the restraints of sound reason; and, if even the profession of Christianity was unable to prevent the Spaniards from assassinating their brethren to the glory of God, in the grand square of Madrid, it is a plain proof how necessary it is that the reasonable service of Christianity should be well understood. Now, it would be flying in the face of our own judgment to imagine there is much philosophy among savages, who likewise celebrate *auto da fés* in their way, and indeed unhappily to a great excess among the Antis, where were found huge earthen vases filled with the dried carcases of children, who had been sacrificed to statues; and they were sacrificed in this manner, whenever the Antis celebrated an act of faith. As to those who among the savages of America are called *boyés*, *jametyes*, *piays*, *angelottes*, *javas*, *iharangui*, and *outmons*, they should more properly be denominated physicians than priests, as they are generally called; it is true, they are wont to accompany the medicines they administer to the sick, with fantastical practices, which they think adapted to calm or to expel the evil principle, to whom they seem to ascribe all the disorders that attack the human body. Instead of idly reasoning on the theology of these pretended priests, it would be acting far more wisely to engage them by presents and a generous treatment to communicate to us the characters of certain plants whereof they make great use in their medicaments; for we are not acquainted with the fiftieth part of the vegetables that some of these practitioners in

pharmacy carry always about them in little bags, and in which the whole of their medical knowledge consists. But the missionaries, who considered these American jugglers as their rivals, persecuted them with fury; and even whenever they have occasion to mention them in their relations, they still load them with abuse, which disgusts us as much as the barbarous dulness of the style in which these accounts are written, and the prodigies, manifestly false, which they affirm to be true. There has been no want of missionaries in America, but we have rarely seen among them enlightened and charitable men, taking a sincere concern in the miseries of the savages, and employing some means to relieve them. It may safely be advanced, that properly speaking, it is only the Quakers who have settled in the New World, without committing crying acts of injustice and shocking enormities. As to the Spaniards, had we no information from other quarters, we might be tempted to believe that Las Casas was striving to palliate their crimes, by rendering them absolutely incredible. He has the assurance to say, in a treatise entitled, *De la destrucción de las Indias Occidentales per los Castellanos*, and inserted in the collection of his works, printed at Barcelona, that in forty years his countrymen massacred fifty millions of Indians. This, however, is a gross exaggeration; and the reason of his committing it to paper was, that Las Casas wanted to establish in America an order half-military and half-ecclsiastical; his ambition afterwards led him to aspire at being grand master of this order, and so to raise a prodigious tribute in silver from the Americans. To convince the court of the utility of the project, which would have been useful only to himself, he swelled the number of murdered Indians to that extravagant amount.

Nevertheless, it is an undoubted fact, that the Spaniards caused a great number of savages to be torn to pieces by large hounds and a species of mastiffs or bull-dogs, brought into Europe about the time of the Alanes; they likewise occasioned the death of vast numbers more of these poor wretches in the mine, in the pearl-fisheries, and under the weight of burdens that could only be transported on men's shoulders, because throughout the whole extent of the eastern coast of the new continent to beart of burden or of draught was found; and it was only at Peru that any glamas were seen. In short, they exercised innumerable cruelties on the cacics and chiefs of hordes whom they suspected of having concealed any silver or gold; no discipline was observed in their small parties, composed of thieves, and commanded by men who deserved capital punishment for their crimes, and had mostly been taken from the drags of the people. It is an indisputable fact, that both Almagro and Pizarro could neither read nor write. These two adventurers were at the head of a hundred and seventy foot-soldiers, a number of bull-dogs, and a monk named La Valle Viridi, whom Almagro afterwards caused to be beat to death with the but end of muskets, in the island of Puna. Such was the army that marched against the Peruvians; as to that which went to the attack of the Mexicans, under the conduct of Cortez, it consisted of fifteen cavaliers and five hundred infantry at the utmost. Now we may form some idea of the horrors these seven hundred and thirty-nine murderers must have committed at Peru and at Mexico; we may likewise get a notion of the ravages committed in the island of St. Domingo. But it is an insult to common sense to assert that they slaughtered fifty millions of inhabitants. Those who give credit to such extravagant assertions, doubtless, have no proper conception of so great a number of mankind; all Germany, Holland, the Low Countries, with France and Spain taken together, do

do not at the present day contain fifty millions of people. Yet if we except the interior of Spain, the earth there is tolerably well cultivated, and that by the labour of animals, combined with that of the husbandman. In America nothing was cultivated by the labour of animals; accordingly we see from the journals of the Spaniards themselves, that it frequently happened that they marched for five or six days in Peru without coming to a single habitation. In the expedition to Canella, we are told by Juraba, that they made no use of their swords but in hewing the briars and brambles, to clear their passage across the most frightful desert that can be imagined. In the heart of Paraguay and Guiana, whither the little Spanish armies never penetrated, and of course committed none of the ravages that have been imputed to them, at first only forests were discovered, and afterwards forests again or petty tribes were found, often at the distance of a hundred leagues from one another. It is apparent from all that the Jesuits have published concerning the establishment of their missions, how difficult it was to bring together savages in countries more extensive than France, and where the land is better than in Peru, and not inferior to that of Mexico. If we would obtain an idea of the state of the New World at the time of its discovery, we must doubtless study the accounts, but at the same time we should employ a nice discernment and a critical severity for removing the falsehoods and prodigies with which they swarm; compilers without taste or judgment, pick up all they find in the journals of travellers, and thus form disgusting romances, which have but too much increased in our days, because it is much easier to write without reflecting, than with care and meditation.

The thinness of the population of America, and the want of courage in its inhabitants, are the true causes of the rapidity of the conquests made there; one half of the world fell, as it were, in an instant, under the yoke of the other. Those who pretend that fire-arms alone decided the victory, are greatly mistaken; since with those arms it has never yet been practicable to subdue the centre of Africa. The ancient Batavians and the Germans were for the most part naked; they had neither helmet nor cuirass; they had not even iron enough for barbing all their javelins; yet those men, supported by their valour, often fought with advantage against soldiers in coats of mail, helmets, and in short armed with instruments no less murderous than the pilum was of the Roman infantry. If, therefore, America had been peopled by natives as warlike as these Germans and Batavi, seven or eight hundred men would never have conquered from them two empires in a month. Nor can it be said that the band commanded by Pizarro was supported by auxiliary troops, since, at the battle of Caxamalca, the Spaniards alone engaged the army of the emperor Atahualpa, and the event proved that Pizarro had no need of auxiliary forces.

It is not to be denied that by a local disposition extremely remarkable, all the great rivers, namely, La Plata, the Maragnon, the Oroonoko, the river of the north, the Mississippi, the St. Lawrence, have their mouths at the eastern shore, where the Europeans must make their first landing; so that by going up these rivers they penetrated without difficulty into the heart of the continent; whereas the situation, as is well known, is quite different of Peru and Mexico, that is to say, on the western shore; and they cannot otherwise be attacked than by troops already fatigued by the long marches they have made in the interior of the country.

Whatever was the cause of it, the New World was such a desert, that the Europeans might have established themselves

there without destroying any tribe of the natives: and, as they would have given the Americans iron, arts, trades, horses, oxen, and breeds of all the other domestic animals of which they were destitute, that would have been in some sort a compensation for the soil of which they would have taken possession. Some civilians are known to maintain that the hunting tribes of America were not the right owners of the soil; because, according to Grotius and Lauterbach, the property of a country cannot be acquired by hunting in it, by cutting wood or drawing water there; nothing but the precise demarcation of limits, and the intention of cultivating, or culture already begun, can establish the possession. We take the liberty, however, to differ widely from this opinion, and think that the hunting nations of America were well authorized to assert that they were, as has been observed above, the absolute owners of the soil; because, in their method of living, the chase is equivalent to culture; and the construction of their huts is a title against which Grotius, Lauterbach, Titius, and all the civilians of Europe, cannot be appealed to without rendering the appellant ridiculous. It is allowed, that in places where there was already some sort of culture, the right was still more incontrovertibly founded; and it is exceedingly hard to conceive how it could ever come into the head of pope Alexander VI. to grant, by a bull of the year 1493, the whole of the continent, with all the islands of America, to the king of Spain. Yet he did not think he was disposing of uncultivated and uninhabited regions, since he specifies in his donation both towns and castles, *civitates & castra in perpetuum, tenore presentium, donamus*. It may be replied, that this act was only ridiculous: yes, it is precisely, because it was ridiculous that it ought not to have been made, to avoid giving room to weak minds to imagine that the sovereign pontiffs have contributed as much as lay in their power to all the depredations and to all the massacres that the Spaniards have committed in America, where they cited this bull of Alexander VI. whenever they poignarded a cacic and usurped a province. The court of Rome should have solemnly repealed this *act of donation*, at least after the death of Alexander VI.; but unfortunately we cannot find that it ever thought of taking this step in favour of religion.

Another remarkable circumstance is, that some divines maintained, in the 16th century, that the Americans were not men; and it was not merely the want of a beard, and the nudity of the savages, that led them to adopt the sentiment, but the accounts they received concerning the anthropophagi, or the cannibals. This is manifest by a letter still extant of Lullus: the western Indians, says he, have nothing of the reasonable animal except the mask; they scarcely know how to speak, and are not acquainted either with honour, or modesty, or probity; no ferocious animal is so ferocious as they; they devour one another, tear their enemies into morsels, suck their blood, and always have enemies; for wars are eternal among them, and their vengeance knows no bounds. The Spaniards who frequent them, continues he, become insensibly as perverse, as malicious, as atrocious as themselves, whether it be from the force of example, or whether it proceeds from the influence of the climate: *advo corrumpuntur illic mores, sive id accidat exempla incolarum, sive cæli natura*. There is no reason, however, to think that the climate has any influence in this matter; since we have already observed, that in the hottest countries, as under the equator, and in the coldest, as beyond the fiftieth degree, we have alike seen barbarians devour their prisoners, and celebrate in horrible songs the memory of their ancestors, who feasted in like manner at similar banquets.

Lullus,

Tullus, and the divines above mentioned, must have been totally ignorant that the eating of human flesh was likewise extremely common among the ancient savages of our continent: because, when man is not enlightened by the sciences, when neither his hand nor his heart is restrained by law, he every where falls into the same excesses. But, in closing this article, we shall repeat, that it will be for ever a matter of astonishment, that in one entire hemisphere of our globe there was not the least idea of the sciences in the year 1492, so that the human mind was there upwards of 3000 years behind hand. Even at this day there is not, throughout the whole extent of the New World, one American population that is free, and on the point of gaining instruction in literature; for the Indians of the missions have nothing to do with the subject; since all concurs to shew that they are rather converted into fanatical slaves than reduced to a state of humanity.

In regard to the first people of America, and whence they came to recite the various opinions that have been advanced would lead us greatly beyond our purpose. The subject has been copiously and elaborately investigated by the abbé Clavigero and Dr. Robertson, and we may reasonably content ourselves with the result of their inquiries. The latter, after recapitulating and discussing the most plausible opinions on the subject, comes to the following conclusions: 1. That America was not peopled by any nation from the ancient continent, which had made any considerable progress in civilization; because, when America was first discovered, its inhabitants were unacquainted with the necessary arts of life, which are the first essays of the human mind toward improvement; and if they had ever been acquainted with them, for instance, with the plough, the loom, and the forge, their utility would have been so great and obvious, that it is impossible they should have been lost. Therefore the ancestors of the first settlers in America were uncivilized, and unacquainted with the necessary arts of life.

2. America could not have been peopled by any colony from the more southern nations of the ancient continent; because none of the rude tribes of these parts possessed enterprise, ingenuity, or power, sufficient to undertake such a distant voyage; but more especially because that, in all America, there is not an animal, tame or wild, which properly belongs to the warm or temperate countries of the eastern continent.

In short, from these and several other arguments, he thinks it reasonable to conclude, that the progenitors of all the American nations, from Cape Horn to the southern limits of Labrador, from the similarity of their aspect, colour, &c. migrated from the north-east parts of Asia: and that the nations that inhabit Labrador, Esquimaux, and the parts adjacent, from their unlikeness to the American nations, and their resemblance to the northern Europeans, came over from the north-west parts of Europe. Hist. of America, vol. ii. p. 22, &c.

On the other hand, the abbé Clavigero, a native of America, and a later writer than Dr. Robertson, is of opinion, that there remains no other solution to this intricate question than by admitting an ancient union between the equinoctial countries of America and those of Africa, and a connection of the northern countries of America with Europe on the east and Asia on the west; so that there has probably been a period since the flood when there was but one continent. The beasts of cold climates passed over the northern isthmuses which perhaps connected Europe, America, and Asia; and the animals and reptiles peculiar to hot countries passed over the isthmus that connected South America with Africa; for, from various reasons, he is induced

to believe, that there was formerly a tract of land uniting the easternmost part of Brazil to the westernmost part of Africa; and that all the tract of land may be sunk by some violent agitation of nature, leaving only some traces of it in that chain of islands whereof Cape de Verd, Fernandez, De Norona, Ascension, and St. Matthew islands make a part; and also in those numerous sand-banks discovered by different navigators, and particularly by de Buache, who founded that sea with great accuracy. These islands and sand-banks may probably have been the most elevated parts of that immersed isthmus. In like manner it is probable that the north-western part of America was joined to the north-eastern part of Asia by a neck of land which has been sunk or washed away; and the north-eastern parts of America to the north-western parts of Europe, by Greenland, Iceland, &c.

On the whole, we cannot but believe that the quadrupeds and reptiles of the New World passed thither by land, and by different routes, from the old continent. All other suppositions are subject to enormous difficulties; and, though this be not without some, yet they are not altogether unformidable. The most formidable is the supposition of an earthquake, so violent as to submerge a tract of land of more than 1500 miles in length, which, according to our hypothesis, united Africa and South America. We do not, however, ascribe this stupendous revolution to a single shock; it may have been effected by a succession of earthquakes. It is well known that these convulsions are common in the climates where we suppose this isthmus to have been. Neither is it impossible, nor even improbable, that such an effect should be produced by earthquakes; nor is history by any means destitute of examples to our purpose. The earthquake that was felt in Canada, in 1663, overturned a chain of freestone mountains upwards of 300 miles in length, converting the whole of that immense tract into one entire plain. And how prodigious must have been the convulsion occasioned by those extraordinary earthquakes recorded in the histories of America, when the world was thought to be on the verge of dissolution!

It may farther be objected to this system, continues the abbé, that if beasts traversed by land from one continent to the other, it will be no easy matter to assign a cause why some species passed thither without leaving a single individual behind them on the old continent; and, on the contrary, that some entire species should remain in the old continent, and not a single individual of them emigrate to America. But this objection operates with equal force against every other opinion, excepting that which employs angels in transporting beasts. Supposing, however, that it did not, we have a satisfactory answer to it. All the quadrupeds of the earth are not yet known; we cannot, therefore, affirm how many are in the one which are not in the other continent. The knowledge of the best informed zoologists is very imperfect, and they differ among themselves. The count de Buffon enumerates only two hundred species of quadrupeds. Bomare, who wrote a short time after him, makes them amount to 265; but to say how many more there may be, and of what kinds, until we have explored the interior regions of Africa, a great part of Tartary, the country of the Amazons, the vast territory west of the Mississippi, and various other unexplored and extensive countries, which, together constitute a great proportion of the entire globe, would be mere conjecture. No argument, therefore, can be inferred from the difference of the animals in the two continents against our system, till the animals in these unexplored regions shall have been examined. Abbé Clavigero's Hist. of Mexico, vol. ii. diff. 1.

A M E R I C A.

We have dwelt the longer on this article, as it must be highly interesting to every inquisitive mind, and the discussion of it is blended with much useful information.

AMERICA, in *Geography*, or the New World, or the West Indies, is one of the four quarters of the globe, bordered by the ocean, discovered by Christopher Columbus, a Genoese, in 1492, and denominated America, from Americus Vesputius, a Florentine, who landed, in 1497, on that part of the continent, situated to the south of the equator; after which it fell principally under the dominion of the Spaniards, the English, the French, the Portuguese, and the Dutch. It is divided into north and south by the gulf of Mexico and the straits of Panama. North America, as far as it is known, extends from the 11th degree of latitude, or 7° 30', as marked in the map of Lacruz, to the 75th, or, as others state it, to the 72d. Its principal countries are Mexico, California, Louisiana, Virginia, Canada, Newfoundland, the islands of Cuba, St. Domingo, and the Antilles. South America reaches from the 12th degree of north to the 60th degree of south latitude, or, if the strait of Magalhaens be the limit, to the 54th: its countries are, Terra Firma, Peru, Paraguay, Chili, Terra Magellanica, the Brazils, and the country of the Amazons. America, in length from N. lat. 72° to S. lat. 54°, comprehends 126°, or 7560 geographical miles, or in British miles about 8800. The greatest breadth of South America from Cape Blanco west, to that of St. Roque east, is 48°, or 2880 geographical miles; but in the North, from the promontory of Alaska to the most eastern point of Labrador, or even of Greenland, a third part must be added. Supposing the breadth of North America to be 3840 geographical miles, the average breadth will be about 3360 geographical miles, or nearly 4000 British miles. This extensive continent lies between the Pacific ocean on the west, and the Atlantic on the east, and is said to contain upwards of fourteen million of square miles.

SOUTH AMERICA, the population of which is estimated at about 13,000,000, is an extensive peninsula, connected with North America by the isthmus of Darien, and divided between Spain, Portugal, France, Holland, and the Aborigines, as follows:

Spanish Dominions, computed at more than 5000 geographical miles, and containing about 9,000,000 inhabitants.

Chief Towns.

Terra Firma,	Panama and Carthagena.
Peru,	Lima.
Chili,	St. Jago.
Paraguay,	Buenos Ayres.

Portuguese, equal, probably in extent to the Spanish.

Brazil,	St. Salvador.
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French.

Cayenne,	Caen.
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Dutch.

Surinam,	Paramaribo.
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Aborigines.

Amazonia.	
Patagonia.	

The climate of TERRA FIRMA, especially in the northern parts, is extremely hot and sultry during the whole year. From the month of May to the end of November, the season, called Winter by the inhabitants, is almost a continual succession of thunder, rain, and tempests; the clouds precipitating the rain with such impetuosity, that the low lands exhibit the appearance of an ocean. Great part of the coun-

try is of consequence almost continually flooded; and this, together with the excessive heat, so impregnates the air with vapours, that in many provinces, particularly about Papayan and Portobello, it is extremely unwholesome. The soil of this country is very different; the inland parts being exceedingly rich and fertile, while the coasts are sandy and barren. It is impossible to view, without admiration, the perpetual verdure of the woods, the luxuriance of the plains, and the towering height of the mountains. This country produces corn, sugar, tobacco, and fruits of all kinds; the most remarkable is that of the manzanillo tree: it bears a fruit resembling an apple, but which, under this appearance, contains the most subtle poison. The bean of Carthagena is the fruit of a species of willow, about the bigness of a bean, and is an excellent remedy for the bite of the most venomous serpents, which are very frequent all over this country. Among the natural merchandize of Terra Firma, the pearls found on the coast, particularly in the bay of Panama, are not the least considerable. An immense number of Negro slaves are employed in fishing for these, and have arrived at a wonderful dexterity in the occupation. They are sometimes, however, devoured by sharks while they dive to the bottom, or are crushed against the shelves of the rocks. This country was called Terra Firma, on account of its being the first part of the continent which was discovered, all the lands found previous to this being islands.

From the situation of PERU, which is within the torrid zone, one would suppose it to be uninhabitable; but the Andes, those lofty mountains, being on one side, and the South sea on the other, it is not so prodigiously hot as tropical countries in general are; and in some parts it is disagreeably cold. In one part are mountains of a stupendous height and magnitude, having their summits covered with snow; on the other, volcanos flaming within, while their tops, chasms, and apertures are involved in ice. The plains are temperate, the beaches and vallies hot; and lastly, according to the disposition of the country, its high or low situation, we find all the various gradations of temperature between the extremes of heat and cold. It is remarkable, that in some places it never rains, a defect supplied by a dew that falls every night, and sufficiently refreshes the vegetable creation; but in Quito they have prodigious rains, attended by dreadful storms of thunder and lightning. In the inland parts of Peru, and by the banks of the rivers, the soil is usually very fertile; but along the sea-coast it is a barren sand.

The climate of CHILI is one of the most delightful in the world, being a medium between the intense heats of the torrid and the piercing colds of the frigid zones. Along the coast of the Pacific ocean, they enjoy a fine temperate air, and a clear, serene sky most part of the year; but sometimes the winds that blow from the mountains in Winter are exceedingly sharp. There are few places in this extensive country where the soil is not exuberantly rich; and were its natural advantages seconded by the industry of the inhabitants, Chili would be the most popular kingdom in America.

Some parts of PARAGUAY, situated as it is, must be extremely hot by reason of the almost vertical influence of the solar rays; while districts must be pleasant and delightful. The heat is in some measure, however, mitigated by the gentle breezes, which generally begin at about nine or ten in the morning, and continue the greatest part of the day. Some tracts of the country are very mountainous; but in many others are found extensive and beautiful plains, where the soil is very rich, producing cotton, tobacco, and the valuable herb called paragua, together with a variety of fruits. Here are also extremely rich pastures, in which are bred such

such herds of cattle, that it is said, the hides are the only part exported, while the flesh is left to be devoured by the ravenous beasts of the wilderness. Not long since a horse might be purchased here for one dollar, and an ox, chosen out of several hundreds, for a still more trifling sum.

The climate of *Brazil*, or **BRASIL**, has been described by two eminent naturalists, Piso and Maregrave, who made their observations with a philosophical accuracy, and describe it as temperate and mild, when compared with that of Africa; imputing this circumstance chiefly to the refreshing wind that blows continually from the sea. The air is not only cool, but chilly through the night, so that the natives kindle a fire every evening in their huts. As the rivers in this country annually overflow their banks, leaving a sort of slime upon the lands; the soil here is therefore amazingly rich. The vegetable productions are Indian corn, sugar-canes, tobacco, indigo, lides, ipecacuanha, balsam, Brazil-wood, which is of a red colour, hard and dry, and is chiefly used in dyeing, though not the red of the best kind. Here is also the fustic, of use in dyeing yellow, and a beautiful speckled wood employed in cabinet work. They have five different sorts of palm trees, some curious ebony, and a great variety of cotton trees. This country abounds in horned cattle, which are hunted for their hides alone, 20,000 being sent annually into Europe. Deer, hares, and other game are likewise in great plenty. Amongst the wild beasts found here, are tigers, porcupines, januvers, and a fierce animal somewhat resembling a greyhound; monkies, sloths, and the torpirassu, a creature between a bull and an ass, but without horns and entirely harmless; the flesh is very good, and has the flavour of beef. The country abounds with a numberless variety of fowl, both wild and tame; and among them turkies, fine white hens and ducks: also plenty of fish, insects, and serpents.

Of **CAYENNE**, the land along the coast is very low, and directly subject to inundations during the rainy season, from the multitude of rivers which rush down from the mountains with great impetuosity. Here the atmosphere is sultry, moist, and unwholesome, especially where the woods are not cleared away; but on the higher parts, where the trees are cut down, and the ground is laid out in plantations, the air is more healthy, and greatly tempered by the sea breezes. The soil in many parts is rich and fertile, producing sugar, tobacco, maize, fruits, and other necessaries of life.

In the months of September, October, and November, the climate of **SURINAM** is unhealthy, particularly to strangers. The common diseases are putrid and other fevers, the dry belly-ach and the dropsy. About a hundred miles within land from the sea, a quite different soil is seen, a hilly country, a pure, dry, wholesome air, where a fire sometimes would not be disagreeable. Along the coast the water is brackish and unwholesome, the air damp and sultry. The thermometer ranges from 75° to 90° throughout the year. A north-east breeze never fails to blow from about nine in the morning through the day, in the hottest seasons. As the days and nights throughout the year are very nearly of equal length, the air can never become extremely heated, nor the inhabitants so greatly incommoded by the heat, as those who live at a greater distance from the equator. The seasons formerly were divided regularly into rainy and dry; of late years, however, so much dependence cannot be placed upon them, owing, probably, to the country being more cleared, by which means a free passage is opened for the air and vapours.

The air in **AMAZONIA** is cooler than might be expected,

considering it as situated in the torrid zone. This is partly owing to the heavy rains which occasion the rivers to overflow for one half of the year, and partly to the haziness of the weather, which obscures the sun great part of the time he is above the horizon. During the rainy season the country is subject to dreadful storms of thunder and lightning. The soil is extremely fertile, producing cocoa-nuts, ananas, plantains, and a great variety of tropical fruits; cedar, redwood, pak, ebony, logwood, and many other sorts of dyeing wood, together with tobacco, sugar-canes, cotton, potatoes, balsam, honey, &c. The woods abound with tigers, wild boars, buffaloes, deer, and game of various kinds. The rivers and lakes teem with fish. Here are also sea-cows and turtles; but the crocodiles and water-serpents render fishing a dangerous employment.

The climate is said to be much colder in **PATAGONIA** than in the north under the same parallels of latitude; a circumstance ascribed to its being in the vicinity of the Andes, which cross it, and are covered with eternal snow. It is almost impossible to say what the soil would produce, it not being at all cultivated by the natives. The northern parts are covered with wood, among which is an inexhaustible fund of large timber: but towards the south it is said not to produce a single tree big enough to be of use to mechanics. There are, however, good pastures which give food to incredible numbers of horned-cattle and horses, first carried thither by the Spaniards, and since increased to an amazing degree.

NORTH AMERICA, bounded on the east by the Atlantic, and on the west by the Pacific ocean, extends on the south to the vicinity of Panama; the province of Veragua being universally considered as part of North America. According to the maps of Lopez, a chain of mountains runs north and south, called Sierras de Caratagua, and terminates in the point of Higuera; which, dividing the provinces of Panama and Veragua, forms a natural boundary between North and South America. Its northern limit is not precisely ascertained; but from 72° N. lat., assumed as the northern limit, to 7° 30', the southern boundary, there will be an interval of 64½°, or 3870 geographical miles, somewhat more than 4500 British. Its breadth is very different in different parts.—Those parts of North America not inhabited by Indians, belong (if we include Greenland) to Denmark, Great Britain, the American States, and Spain. Spain claims East and West Florida, with the whole tract west of the Mississippi, and south of the northern boundaries of Louisiana, New Mexico, and California. Great Britain claims all the country inhabited by Europeans, lying north and east of the United States, except Greenland, which belongs to Denmark. The remaining part forms the territory of the fifteen United States; the particular countries and provinces whereof are exhibited in the following view:

	<i>Inhabitants.</i>	<i>Chief Towns.</i>
To Denmark belongs Greenland, containing -	} 10,000	New Herrnhut.
<i>British Provinces.</i>		
New Britain, - not known.		
Upper Canada, - 20,000		Kingston, Detroit, Niagara.
Lower Canada, - 130,000		Quebec, Montreal.
Cape Breton island, - 1000		Sydney, Louisburg.
New Brunswick, } 35,000		Frederick-town.
Nova Scotia, }		Halifax.
St. John's island, }		
in 1783, }	} - 5000	Charlotte-town.
Newfoundland island,	} 7000	Placentia, St. John's.

A M E R I C A.

UNITED STATES OF AMERICA.

	<i>Inhabitants.</i>	<i>Chief Towns.</i>
Vermont, -	85,539	Windsor, Rutland.
New Hampshire	141,885	Portsmouth, Concord.
Massachusetts	387,787	Boston, Salem, Newbury-port
District of Maine } Rhode island, -	96,540 68,815	Portland, Hallowell. Newport, Providence.
Connecticut, -	257,946	Newhaven, Hartford.
New York, -	340,120	New York, Albany.
New Jersey, -	184,139	Trenton, Burlington, Brunswick.
Pennsylvania,	454,373	Philadelphia, Lancaster.
Delaware, -	59,994	Dover, Wilmington, Newcastle.
Maryland, -	319,728	Annapolis, Baltimore.
Virginia, -	747,610	Richmond, Petersburg, Norfolk.
Kentucky, -	73,677	Lexington.
North Carolina,	393,751	Newbern, Edenton, Halifax.
South Carolina,	249,073	Charleston, Columbia.
Georgia, -	82,548	Savannah, Augusta.
Territory S. of Ohio,	35,691	Abingdon.
Territory N.W. } of Ohio, }	—	Marietta.

Belonging to SPAIN.

East Florida,	Augustine.
West Florida,	Pensacola.
Louisiana, (ceded to the United States)	New Orleans.
New Mexico,	Santa Fé.
California,	St. Juan.
Mexico, or New Spain,	Mexico.

NORTH AMERICA. *History.* America was originally peopled by uncivilized nations, who lived mostly by hunting and fishing. The Europeans who first visited these shores, treating the natives as wild beasts of the forest, which have no property in the woods where they roam, planted the standard of their respective masters wherever they happened first to land, and in their names claimed the country by *right of discovery*. Prior to any settlement in North America, titles of this kind were set up by the English, French, Spanish, and Dutch navigators, who came hither for the purpose of fishing and trading with the natives. Slight as such titles were, they afterwards became causes of contention between the European nations. The subjects of different princes often laid claim to the same tract of country, because both had discovered the same river or promontory, or because the extent of their respective claims was undetermined.

While the settlements in this vast uncultivated country were inconsiderable and scattered, and the trade of it confined to the bartering of a few trinkets for furs, a trade carried on by a small number of adventurers, the interference of claims produced no important controversy, either among the settlers or the nations of Europe. But in proportion to the progress of population and the growth of the American trade, the jealousies of the nations which had made early discoveries and settlements on this coast were alarmed; ancient claims were revived; and each power took measures to extend and secure its own possessions at the expence of a rival.

By the treaty of Utrecht, in 1713, the English claimed a right of cutting logwood in the bay of Campeachy in South America. In the exercise of this right the English merchants had frequent opportunities of carrying on a contraband trade with the Spanish settlements on the continent. To remedy this evil the Spaniards resolved to annihilate a claim which, though often acknowledged, had never been clearly ascertained. To effect this design they captured the

English vessels which they found along the Spanish main; and many of the British subjects were doomed to work in the mines of Potosi.

Repeated severities of this kind at length, in 1739, occasioned a war between England and Spain, which terminated in 1748 by the treaty of peace signed at Aix-la-Chapelle, in which restitution was made on both sides of all places taken during the war.

Peace however, was of short duration. The French possessed Canada, and had made considerable settlements in Florida, claiming the country on both sides the Mississippi by right of discovery. To secure and extend their claims they constructed a line of forts from Canada to Florida. They had secured the important pass at Niagara, and erected a fort at the junction of Allegany and Monongahela rivers, called Fort du Quesne. They took pains to secure the friendship and assistance of the natives; encroachments were made upon the English possessions, and mutual injuries succeeded. The disputes among the settlers in America, and the measures taken by the French to command all the trade of the river St. Lawrence on the north, and of the Mississippi on the south, excited a jealousy in the English nation, which soon broke forth in open war. This war was carried on with various success, till a decisive blow, which proved fatal to the interests of the French in America, put an end to it in 1762. This was the defeat of the French army, and the capture of Quebec, by the brave general Wolfe. That hero was slain at the beginning of the action on the plains of Abram, and M. Montcalm, the French commander, likewise lost his life. The loss of Quebec was soon followed by the surrender of Montreal to general Amherst, and Canada has remained ever since in possession of the English.

In 1763, a definitive treaty of peace was concluded at Paris between Great Britain, France, and Spain, by which the English ceded to the French several islands which they had taken from them in the West Indies, but were confirmed in the possession of all North America on this side the Mississippi, except the island of Orleans.

No sooner was peace concluded than the British parliament adopted the plan of taxing the colonies; and, to justify their attempts, declared that the money to be raised was to be appropriated to defray the expence of defending them in the late war. The first attempt to raise a revenue in America appeared in the memorable *stamp act*, passed March 22, 1765, whereby it was enacted, that certain instruments in writing, as bills, bonds, &c. should not be valid in law, unless drawn on stamped paper, on which a duty was laid.

Immediately as this act was published in America it raised a general alarm. The people were filled with apprehensions at an act which they supposed to be an attack on their constitutional rights. The colonies therefore petitioned the king and parliament for a redress of the grievance, and at the same time entered into associations for the purpose of preventing the importation and use of British manufactures until the obnoxious act should be repealed. This spirited and unanimous opposition of the Americans produced the desired effect; and on the 18th of March, 1766, the stamp act was repealed. The news of the repeal was received in the colonies with universal joy, and the trade between them and Great Britain was renewed on the most liberal footing.

The parliament, however, by repealing this act, so odious to their American brethren, by no means intended to lay aside the scheme of raising a revenue in the colonies, but merely to alter the mode. Accordingly, the next year they passed an act, imposing a certain duty on glass, tea, paper, and painters' colours; articles which were much wanted, and not manufactured in America. This act, as might reasonably

have been opposed, first, at a bold stroke, to the repeal of the measure, and excited a general opposition to the measure, so that parliament thought it advisable, in 1770, to take off these duties, except three pence a pound on tea. Nevertheless this duty, however trifling, kept alive the jealousy of the colonists, and their opposition to parliamentary taxation continued increasing from day to day.

It will be easily conceived that the inconvenience of paying the duty was not the sole nor even principal cause of the opposition; it was the *principle*, which, once admitted, would have subjected the colonies to unlimited parliamentary taxation, without the privilege of being represented. The *right*, abstractedly considered, was denied; and the slightest attempt to justify the claim by precedent was uniformly resisted. Nor could the Americans be deceived as to the views of parliament; for the repeal of the stamp act had been accompanied with an unequivocal declaration, that "the parliament had a right to make laws of sufficient validity to bind the colonies in all cases whatsoever."

The colonies, therefore, entered into measures for encouraging their own manufactures and home productions, and for retrenching the use of foreign superfluities, while the importation of tea was prohibited. In the royal and proprietary governments, and in Massachusetts, the governors and people were in a state of continual warfare. Assemblies were repeatedly called and suddenly dissolved; employing the time while sitting in stating grievances and framing remonstrances. As if to inflame these discontents an act of parliament was passed, ordaining, that the governors and judges should receive their salaries of the crown; thus rendering them independent on the provincial assemblies, and removeable only at the pleasure of the king. These proceedings, with many others of a similar tendency, could not fail to produce a rupture.

In 1773, the spirit of the Americans broke out into open violence. The *Gaspee*, an armed schooner belonging to his Britannic Majesty, had been stationed at Providence, in Rhode Island, to prevent smuggling. The vigilance of the commander irritated the inhabitants to such a degree, that about 200 armed men boarded the vessel under favour of the night, compelled the officers and crew to go ashore, and set fire to the schooner. A reward of 500*l.* offered by government for apprehending any of the persons concerned in this daring act, produced no effectual discovery.

The resolution of the colonies not to import or consume any tea, having, in a great measure, deprived the English government of a revenue from this quarter, the parliament formed a scheme of introducing tea into America under cover of the East India Company. For this purpose an act was passed, empowering the company to export all sorts of teas, duty free, to any place whatever. The company departed from their usual mode of transacting business, and became their own exporters. Several ships were freighted with teas, and sent to the American colonies, and factors were appointed to receive and to dispose of their cargoes.

The Americans, determined to oppose the revenue system of the English parliament in every possible shape, considered the attempt of the East India Company to evade the resolutions of the colonies, and dispose of teas in America, as an indirect mode of taxation, sanctioned by the authority of parliament. The people assembled in various places, and, in the large commercial towns, took measures to prevent the landing of the teas. In Massachusetts they in like manner viewed the tea as a vehicle of an unconstitutional tax, and as inseparably associated with it. To avoid the one they resolved to destroy the other. About 17 persons, dressed as Indians, repaired to the tea ships, broke open 342 chests of

tea, and, without doing any other damage, discharged their contents into the water.

No sooner did the tidings of this destruction of the tea reach Great Britain than the parliament determined to punish that devoted town. A bill was brought in and passed, to "discontinue the landing and discharging, lading and shipping of goods, wares, and merchandizes at the town of Boston, or within the harbour." This act, passed March 25, 1774, and called the Boston port bill, threw the inhabitants into the greatest consternation. The town of Boston passed a resolution expressing their sense of this oppressive measure, and a desire that all the colonies would concur to stop all importations from Great Britain. Most of them entered into spirited resolutions on this occasion, to unite with Massachusetts in a firm opposition to the unconstitutional measures of parliament.

But the port bill was not the only act that alarmed the apprehensions of the Americans. Determined to compel the province of Massachusetts to submit to their laws, parliament passed an act for "the better regulating the government in the province of Massachusetts Bay." The object of this act was to alter the government as it stood on the charter of King William, and to make the sheriffs and judges dependent on the king, and removeable at his will and pleasure.

This act was soon followed by another, which ordained, that any person indicted for murder, or other capital offence, committed in aiding the magistrates in executing the laws, might be sent by the governor, either to any other colony, or to Great Britain, for his trial.

This was shortly after succeeded by the Quebec bill, which enlarged the bounds of that province, and granted many privileges to the Roman catholics. The view of this act was to secure the attachment of that province to the crown of England, and prevent its joining the colonies in their resistance to the laws of parliament.

All these steps, however, far from intimidating, rather exasperated the Americans, by confirming them in their former apprehensions of the evil designs of government, and served only to unite the colonies in a more determined opposition. A correspondence of opinion, in respect to these acts, produced an uniformity of proceedings in the colonies. The people generally concurred in the proposition for holding a congress, in order to concert measures for the preservation of their rights. Deputies were accordingly appointed, and met at Philadelphia on the 26th of October, 1774.

Preparations now began to be made to oppose by force the execution of these acts of parliament. The militia of the country were trained to the use of arms; great encouragement was given to the manufacture of gun-powder, and measures were taken to obtain all kinds of military stores. At Lexington the first blood was spilt in the war; a war which severed America from the British empire. Here was opened the first scene of the great drama, which, in its progress, exhibited the most illustrious characters and events, and closed with a revolution equally glorious for the actors, and important in its consequences to mankind.

In July, congress published their declaration of independence, which separated America from Great Britain. This grand event took place 284 years after the discovery of America by Columbus; 166 from the first effectual establishment in Virginia, and 156 from the first establishment of Plymouth in Massachusetts, which were the earliest English settlements in America.

On the 30th of November, 1782, the provisional articles of peace and reconciliation, between Great Britain and the American states, were signed at Paris; whereby the former acknowledged the independence and sovereignty of the United

United States of America. These articles were ratified by a definitive treaty, September 3, 1783. Thus ended a long and arduous conflict, in which Great Britain expended near a hundred millions of money, with a hundred thousand lives, and gained nothing. America endured every cruelty and distress from her enemies, lost many lives and much treasure, but delivered herself from a foreign dominion, and established a rank among the nations of the earth. Holland acknowledged the independence of the United States of America on the 19th of April, 1782; Sweden February 5, 1783; Denmark the 25th of February; Spain in March, and Russia in July, of the same year. On the 30th of April, 1789, George Washington was inaugurated president of the United States of America, in the city of New York.

Hitherto the deliberations of the Union have been marked with wisdom, and the measures they have adopted have been productive of great national prosperity.

To conclude, the United States, and indeed all parts of North America, seem to have been formed by nature for the most intimate union; as it may truly be affirmed, that no part of the world is so well watered with springs, rivulets, rivers, and lakes, as the territory of the United States. By means of these various streams and bodies of water, the whole country is chequered into islands and peninsulas. The facilities of navigation render the communication between the ports of Georgia and New Hampshire far more expeditious and practicable than between those of Provence and Picardy in France, Cornwall and Caithness in Great Britain, or Galicia and Catalonia in Spain. The canals opening between Susquehanna and Delaware, between Pasquetank and Elizabeth rivers, in Virginia, and between the Schuylkil and Susquehanna, will form a communication from the Carolinas to the western counties of Pennsylvania and New York. The improvement of the Patomak will give a passage from the southern states to the western parts of Virginia, Maryland, Pennsylvania, and even to the lakes. From Detroit to Alexandria, on the Patomak, 607 miles, are only two carrying places, which together do not exceed the distance of 40 miles. The canals of Delaware and Chesapeake will open the communication from South Carolina to New Jersey, Delaware, the most populous parts of Pennsylvania, and the midland counties of New York. Were these, and the canal between Ashley and Cooper rivers, in South Carolina, the canals in the northern parts of the state of New York, and those of Massachusetts and New Hampshire, all opened, and many of them are in great forwardness, North America would thereby be converted into a cluster of large and fertile islands, communicating easily with each other, at little expence, and in many instances without the uncertainty or danger of the seas.

From the numerous competitions in every branch of business in Europe, success in any pursuit may be looked upon in the same light as a prize in a lottery. But the case is widely different in America. Here is room enough for every human talent and virtue to expand and flourish. This is so invariably true that it is generally believed there is not an instance to be found of an industrious, frugal, prudent European, with sober manners, who has not been successful in business in that country.

AMERICAN Earib Nut, in *Botany*. See ARACHIS.

AMERICAN Grass. See AGROSTIS.

AMERICANA, in *Entomology*, a species of CHRYSOMELA that inhabits America; a variety of it is found in the south of France. The general colour is greenish gold, with five sanguineous red lines upon the wing cases. Fab. & Gmel. Feeds on the lavender. A red spot on the head is a secondary distinction of this species.

AMERICANORUM, a species of APIS, described by Fabricius as a native of North America. It is hairy and

black; anterior part of the thorax yellow; abdomen yellow, black at the end. Fab. Spec. Inf. Oms. Fabricius, in his last work, "Entomologia Systematica," gives the apis americanorum precisely the same specific character as he had previously assigned to apis africana, so that at present they are both described as "hirsuta nigra, thoracis dorso flavo, abdomine virecente: segmento primo flavo." To increase the confusion, the latest editor of the "Linnean Syst. Nat." Gmelin, adopts the same error; apis africana, p. 2780, and apis americanorum, p. 2784, and the description in the Spec. Inf. of Fab. is only added as a synonym to the latter. It is probable they are both the same species.

AMERICIMA, in *Zoology*, a name given by some early naturalists to a small kind of lizard found in Brasil. The precise species is uncertain; it is said to be very small; not above three fingers breadth long, and of the thickness of a swan's quill. Its body appears square; its whole back is covered by deep grey scales; its head, legs, and sides with brown ones; and its tail with blue. It is very glossy, the legs extremely slender, and it is generally esteemed poisonous.

AMERIGO, or AMERICUS VESPUCCIUS. See VESPUCCI.

AMERINNUM, or AMERINNON, in *Botany*, a genus of the *diadelphia decandria* class and order, of the natural order of *papilionaceæ* or *leguminosæ*; the characters of which are, that the *calyx* is a one-leaved perianthium, tube bell-shaped, five-toothed, the teeth sharp; the *corolla* papilionaceous, standard with an oblong claw, roundish heart-shaped, expanding and convex, wings lanceolate, shorter than the standard, and keel short; the stamens have 10 filaments conjoined, anthers roundish; the *pyllium* has a germ pedicelled, oblong, compressed leafy, varicose, with lateral veins, within woody, not gaping; cells disposed longitudinally within; the *seeds* solitary, kidney-shaped, thicker at the base, appendicled at the top. There are two species, viz. 1. A. BROWNEI, "unarmed, with leaves petioled, alternate, subcordate-ovate; racemes compound, axillary, and lateral." This shrub rises commonly to the height of ten feet, and supports itself on other shrubs. It is a native of Carthagen, Jamaica, and Domingo. 2. A. *Ebenus*, prickly A. or Jamaica ebony, *pterocarpus sessilifolius* of Lin. p. *buxifolius* of Murray and Aiton, *aspalathus ebenus* of Lin. Spec. and Reich. and *brya* of Browne Jamaic. *spartium arborescens* of Miller and Sloane; "spiny, with leaves subsessile, aggregate, obovate-oblong, and peduncles two-flowered." This is common in Jamaica and several other parts of the West Indies, where the wood is cut, and sent into England under the name of ebony, though the true ebony is a native of the eastern country, and of a different genus. This wood is of a fine greenish brown colour, and admits of polishing well, so that it is much valued by the instrument makers; and it is of a very hard durable nature. Dr. Browne says, that the trunk seldom exceeds three or four inches in diameter; that the slender branches being very tough and flexible are used for riding switches, and kept at all the wharfs about Kingston to scourge the refractory slaves.

This species may be propagated by seeds procured from its native country. The seeds should be sown in pots filled with light fresh earth early in the spring, and plunged into a hot bed of tanners' bark, or placed in tan under pots. In about six weeks the plants will appear, and being very tender should be carefully treated; air should be admitted to them in warm weather, and they should be often refreshed with water. In five or six weeks more they should be transplanted into separate pots filled with light rich earth, and plunged again into the hot-bed, shading them from the sun till they have taken root; they should then have air every day in warm weather, and water once in two or three days, and in cold nights covered with glass. In this hot-bed they may remain till autumn,

When they should be removed into the stove, and plunged into the bark bed. Those whose roots have filled the pot should be removed into those of a larger size. In winter the plant should be kept warm, and have but little water, especially in cold weather; and their leaves, when they contract tith, should be cleared by washing them with a sponge, otherwise the plants will not thrive. These tender plants will not live in the open air in this country, even in the warmest season; they must therefore be constantly kept in the stove or bark bed, and allowed much air in summer when the weather is warm; and when they have acquired strength, they may be exposed for three months in a warm situation in the summer. Martyn's Miller.

AMERINÆ, in *Entomology*, a species of CYNIPS, that forms unequal galls at the ends of the branches of the sweet willow (*Salix pentandria*). It is black except the legs, which are pale. Linnæus.

AMERIOLA, in *Ancient Geography*, a town of Latium, mentioned by Pliny; but not now existing.

AMERQUE, in *Geography*, a city of Mauritania, three leagues from the river Eguile, in the province of Habat, answering, according to Marmol, to the ancient Tocolosida.

AMERSBURY, in *Geography*. See AMBRESBURY.

AMERSFORT, a town of the Netherlands, in the province of Utrecht, situate in a fertile and pleasant country on the river Ems. The objects most worthy of notice in this town are the town-house, the triangular grand palace, the public walks planted with trees, and the great church dedicated to St. George. In its vicinity is the mountain called Amersfort berg, on which trees are planted in a kind of villa, which reaches to Utrecht. The Ems becomes navigable at this town; and all the goods formerly brought out of Germany by Hessian waggons, and consigned to Amsterdam, were shipped at this port. A manufacture of dimity and bombazine has been established in this place. Its trade in beer, rum, and tobacco is now decayed. It is 11 leagues east-south-east from Amsterdam, and $5\frac{1}{2}$ north-east from Utrecht. N. lat. $52^{\circ} 12'$. E. long. $5^{\circ} 4'$.

AMERSHAM. See AGMONDESHAM.

AMERUTHA, or AMERYTHA, in *Ancient Geography*, a village of Upper Galilee, mentioned by Josephus, who fortified it against the Romans, probably the same as Meroth, which terminates Upper Galilee westward.

AMES, JOSEPH, in *Biography*, an industrious antiquarian, was originally a ship-chandler in Wapping, and acquired reputation at an advanced period of life by his study of antiquities. His "Typographical Antiquities," or Historical Account of Printing in England, with Memoirs of our ancient Printers, and a Register of the Books printed by them from 1471 to 1600, with an Appendix concerning Printing in Scotland and Ireland to the year 1749, 4to. is a book well known and often cited. This work was considerably augmented, both in the memoirs and number of books, by Mr. William Herbert, and printed in three volumes, 4to. in 1785. Mr. Ames also published in 8vo. "A List of English Heads engraved and mezzotinto;" and he drew up the "Parentalia" from Mr. Wren's papers. He was secretary to the society of antiquarians, and died in 1759. Nichols's Anecdotes of Bowyer.

AMES, WILLIAM, an English divine, and a famous controversial writer, was descended from an ancient family in Norfolk, and was born in 1576. He was educated at Christ's college, Cambridge, under Mr. William Perkins, from whom he probably imbibed the calvinistical and puritanical sentiments that distinguished his writings. Whilst he was fellow of his college he preached a sermon about 1610-11, in which he inveighed with great vehemence against cards and dice, as the invention of the devil. By this mode of preaching he gave such

offence, that he withdrew from the university in order to avoid expulsion. In the same year he published his "Puritanismus Anglicanus," in which he contrasts the principles and conduct of the puritans against those of other persons with a spirit and language equally illiberal and offensive. No other alternative remained, according to his statement, but either "to suppress episcopacy, or to bring back the pope from hell." Mr. Ames, soon after leaving Cambridge, removed to Holland, and officiated as minister to the English church at the Hague. In 1613, he began his controversy with Grevinchovius, minister at Rotterdam, on the doctrines of election and reprobation, and it was continued from the press. The reputation he thus acquired induced the states of Friesland to invite him to the theological chair in the university of Franeker; and he continued in this respectable station for twelve years. In 1618, he attended the synod of Dort, and from time to time communicated information to the ambassador of king James of the debates of this assembly. From Franeker he removed to Rotterdam, where he preached to a congregation of his own countrymen; and where, after being for some time afflicted with an asthma, he died in 1633. In the last year of his life he wrote his "Fresh Suit against Ceremonies;" but it was not published till after his death.

He was esteemed a learned divine, an excellent casuist, a rigid Calvinist in doctrine, and a zealous advocate for the independent form of church discipline. His writings were numerous, both in Latin and English; most of them were printed abroad; and the principal of them, besides those already mentioned, are the following: "Disceptatio Scholastica inter N. Grevinchovium and G. Amelium," 8vo.; "Disputatio Altera," 8vo. "Coronis ad Collationem Hagensem," 12mo. written against the Arminians; "Medulla Theologica," 12mo.; "De Incarnatione Verbi," 8vo. against the Socinians; "Bellarmius enervatus," 8vo. against the Papists; "De Conscientia," 12mo. and in English under the title of "A Treatise on Conscience," 4to. "Antisynodalia," 12mo. against the Remonstrants; "Demonstratio Logicæ Veræ," 12mo.; "Disputatio Theologica," against Metaphysics; "Technometria," 8vo. on the purpose and bound of Arts; "Reply to Bishop Morton on Ceremonies," and other tracts in the same controversy; "Christianæ Catecheses Sciographia;" and "Lectiones in Psalmis Davidis," 8vo. a posthumous work, dedicated to the magistracy of Rotterdam by Hugh Peters, the colleague of Ames in the English church of Amsterdam. Neal's Hist. Purit. vol. i. p. 579. Biog. Brit.

AMESA, in *Ancient Geography*, a river of Africa in Numidia.

AMESTRATUS, a city of Sicily, called Mutistratus by Polybius, Mustraton by Diodorus Siculus, and Amastra by Silus Italicus; now Mistretta, in the Val di Demona, on the river Halefus. The inhabitants are called by Cicero (in Verren) Amestratini. It was a strong fort of the Carthaginians, besieged by the Romans for seven months with great loss, and, after another siege, taken and razed.

AMESTRIS, in *Entomology*, a species of PAPILIO, with angular indented wings, above black, with rufous and blue lunated marks; beneath obscure. Fab. & Gmel.—Inhabits India. The anterior wings are black; with two rufous spots, and two blue spots in the middle of each; behind these a streak of reddish lunules, which terminates in two white spots at the anterior margin, and along the exterior margin a streak of blue lunated marks. Under side entirely brown, waved with black streaks, and a row of cinereous points. Fabricius.

AMETHYST, in *Mineralogy*. This stone was well known to the Greeks and Romans, from whom it obtained the

the name *αμβύστος*, amethystus, from *α* and *μβύστος*, *non vinosus*, because, according to Pliny, its colour was similar to, but not so deep as that of wine; hence, by the absurd doctrine of sympathies, it came to be esteemed as an antidote against drunkenness.

There are two kinds of amethysts, the oriental and common.

The oriental amethyst is of a reddish or yellowish violet colour; and in hardness, in the form of its crystals, and in short in every physical and chemical property, except that of colour, is the same as the ruby, the sapphire, and oriental topaz, being a mere variety of CORUNDUM. It is a rare gem, and is very seldom brought to Europe. By being heated it loses its colour, and becomes perfectly transparent, and of great brilliancy, so as to be scarcely distinguished from the diamond; so nearly indeed does it resemble this precious stone, as to be occasionally substituted for it in jewellers work. De Boot, in his *Historia Gemmarum*, mentions an amethyst, thus rendered colourless, estimated at 200 rix-dollars, which being cut to the same pattern, and set in a similar manner as a diamond of the value of 18,000 gold crowns, so nearly equalled it in lustre that he could not tell the difference between them.

The common amethyst is crystallized QUARTZ, or rock crystal, tinged naturally of a full violet colour; its properties and characters will therefore be mentioned under the article QUARTZ. The common amethyst, like the oriental, loses its colour in the fire, but is at the same time spoiled by being rendered of an opaque white, owing to a multitude of minute cracks. The best European amethysts come from the vicinity of Carthage in Spain.

To imitate the amethyst in paste or glass, take ten pounds of clear glass or paste, made without manganese, and fuse it down with one ounce and a half of black manganese, and one dram of zaffer. The process recommended by Porta is one dram of Manganese to one pound of frit. Neri's receipt is totally erroneous as to the proportion of colouring matter. He recommends to each pound of glass an ounce of colour composed of eleven parts manganese and one part zaffer, which would produce a deep black glass. Weidenmann *Handbuch der Mineralogie*. De Boot. *Hist. Gemmarum*, lib. ii. c. 32. Pünii *Hist. Nat.* lib. xxxvii. c. 40. Neri, *Art de la Verrerie*, c. 48. *Handmaid to the Arts*, vol. ii. p. 308.

AMETHYST, in *Heraldry*, signifies the purple colour in the coat of a nobleman, which, in gentlemen's escutcheons below that degree, is called *purple*, and in those of sovereign princes, *Mercu-y*.

AMETHYSTEA, *amethyst*, so called from the amethystine colours of the flowers, in *Botany*, a genus of the *dianthria monogynia* class, of the natural order of *verticillate* and *labiate* of Jussieu; the characters are, that the *calyx* is a perianthium one-leaved, tube bell-shaped, angular, semiquinquesid, subequal, acuminate and permanent; the *corolla* is one-petalled, ringent, little longer than the calyx, border five-parted and subequal; upper lip erect, rounded, concave, two-parted, gaping, lower three-parted, the sides rounded, erect, shorter, the middle quite entire, concave, the length of the upper lip; the *stamina* have filaments filiform, approximating under the upper lip and longer than it, anthers simple and roundish; the *pisillum* is a quadrisid gem, style size of the stamens, stigmas two and acute; no *pericarpium*, but the calyx becomes more bell-shaped and spreading; the *seeds* are four, shorter than the calyx, obtuse, and angular within. There is one species, *viz.* *A. carulea*, mountain upright A, which is a native of the mountains in Siberia, from whence the seeds were sent to the Imperial garden at Petersburg, and in 1759 to Chelsea garden, where the plants annually produce seeds.

It is annual, and hath an upright stalk, which rises about a foot high, and towards the top puts out two or three small

lateral branches; these are garnished with small trifid leaves, sawed on their edges, and of a very dark green colour; at the extremity of the branches the flowers are produced in small umbels; these are of a fine blue colour, as are also the upper part of the branches, and the leaves immediately under the umbel; so that though the flowers are small, yet from their colour with that of the upper part of their stalks, the plants make a pretty appearance during their continuance in flower. If the seeds of this plant are sown in Autumn, or are permitted to scatter, the plants will come up early in the following Spring, and these will flower in the beginning of June; but those sown in the Spring will not flower until July. The best time for sowing is Autumn. The flowers have an agreeable smell.

When the plants come up they will require no other care than to keep them clean from weeds, and where they are too close to thin them, for they do not thrive when transplanted; the seeds, therefore, should be sown where they are to remain.

AMETHYSTINE is applied, in *Antiquity*, to a kind of purple garment dyed of the hue of *amethyst*.

In this sense *amethystine* differed from *Tyrian*, as well as from *hyacinthine* purple, being a kind of medium between both.

AMETHYSTINA, in *Entomology*, a species of CHRYSOMELA. Above blue-violet, beneath green and violet. Shells with scattered hollow dots.—Thorax large, antennæ short and black. Fabricius.

AMETHYSTINUS, in *Conchology*, a species of VENUS, described by Argenville; it is of an ovate shape, and violet colour, with perpendicular striæ: about two inches in length, and nearly the same in breadth.—Native place unknown. Gmelin.

AMETHYSTINUS, in *Entomology*, is likewise the specific name of an insect of the APIS genus: it is nearly naked, black: wings violet. A native of the East Indies. Fabricius.

AMETHYSTINUS, a species of CARABUS, that inhabits Cayenne; the wing-cases and abdomen are blue: the head and thorax shining, bronze.—The antennæ are hairy, ferruginous at the base: wing-cases streaked. Fabricius.

AMETHYSTINUS, in *Ornithology*, a species of TROCHILUS, or humming bird, found in Cayenne; its colours are chiefly green gold variegated beneath with grey and brown; throat amethystine blue: tail forked. Gmelin. Size of the red-throated humming-bird, T. Colubris. Linn.—Trochilus amethystinus is le petit oiseau-mouche à queue fourchue & l'amethyste, of Buffon, and amethystine humming-bird of Latham.

AMETZ, in *Geography*, a town of France, in the department of Moselle, and chief place of a canton in the district of Longwy, three leagues west-north-west of Thionville, and three fourth east of Longwy.

AMEVILLE, a town of Savoy, in the valley of Aosta, near the Doria, two miles west of Aosta.

AMEWELL, a populous town of America, in Hunterdown county, New Jersey, containing 5201 inhabitants, of whom 283 are slaves.

AMGAILA, or ANGAILAM, in the *Materia Medica of the Ancients*, a name given by Avicenna and others to a plant sometimes called ACANTHA Arabica, and Amicantha by the Greeks; the roots of which were called *bunkon*, and much used in medicine by the Arabian physicians.

The amgaila, called also *sucaba*, or *zucabai*, is described as a prickly herb, having roots like those of the cyprus, formed of several joints or knots. They were used in stomachic and cardiac compositions, and were chosen by their lightness and good smell.

AMGINSKAIA, in *Geography*, a town and fortress of Russia, situate on the river Amba, 100 miles south-east of Yakutsk.

AMHARA, a kingdom of Abyssinia, situate between the two rivers Babilo and Gelhen, occupying almost the central part of the country; and having Beg-mder to the north, to the west the Nile and the kingdom of Gojam, to the south Walaka, and to the eastward Angot, about N. lat. 11° and E. long. 39°. The length from east to west is about 120 miles, and its breadth somewhat more than 40. It is a very mountainous country, full of nobility: the men are reckoned the handsomest as well as the bravest in Abyssinia. With the ordinary arms, the lance and the shield, they are thought to be superior to double the number of any other soldiers in the kingdom. The dignity of this province derives accession from the high mountain of Gelhen, or the grassy mountain, on which the king's sons were formerly imprisoned, till they were surpris'd and murdered there in the Adelan war. Ludolf enumerates 36 provinces in this kingdom. The Amharic dialect was substituted for the ancient Ethiopic or Geez, in common use and conversation; after the restoration of the royal family from their long banishment in Shoa. This was denominated the king's or royal language, because it was introduced by the sovereigns of the country, when they were called to the government from their exile in the rocks of Amhara, and extended in the court and camp over the whole kingdom. With the sanction of this origin and authority it obtained an ascendancy over all other dialects, and even over the ancient Ethiopic language itself. It differs from the Ethiopic both in construction and grammar; and seven new characters were added to answer the pronunciation of this new language, which is very difficult both to be written and leared. But no book was ever yet written in any other language but the Geez. Although the Amharic dialect be the court language, the Ethiopic retains its original dignity, not only in their books, but in their worship, and also in the king's letters patent, and commissions which are dispatched in his council. Mr. Bruce says, there is an old law in the country, handed down by tradition only, that if any one should attempt to translate the holy Scripture into Amharic, or any other language, he should have his throat cut after the manner in which they kill sheep, his family should be sent into slavery, and his house razed to the ground: and the awe of this law was a great obstacle to his obtaining those translations of the Song of Solomon, which he propos'd as specimens of the different languages of those distinct nations. The dialects of the neighbouring kingdoms, though they differ from one another, approach the nearest to the Amharic.

Ludolf has written a short essay towards a dictionary and grammar of the Amharic. See Ludolf's *Hist. Æthiop.* p. 78. and Bruce's *Travels*, vol. i. p. 425.

AMHERST, one of the MAGDALEN isles in the gulf of St. Lawrence.

AMHERST, a county of Virginia in North America, lies between the blue ridge and the tide waters, on the north of James river, and contains 13,703 inhabitants, including 5296 slaves.

AMHERST, a township in Cumberland county, Nova Scotia, situate on Chignecto basin, on the south side of La Planche river, and on the rivers Napan and Macon. The town was settled by North Irish, Yorkshire, and New England people.

AMHERST, the shire town of Hillsborough county in New Hampshire, is a town of some note, formerly *Souhegan West*, and was originally granted from Massachusetts. It has 2369 inhabitants, and was incorporated in 1762. The Aurean academy was founded here in 1790. This township was formerly much infested by wolves, but they were driven away with dismal howlings by incessant firing of guns and beating of drums for a whole day, and they have never since

done any mischief in the town. Amherst lies on a northern branch of Souhegan river, which falls into Merrimack river, and is 60 miles west of Portsmouth, and 53 north-west of Boston. N. lat. 42° 54'. W. long. 71° 33'.

AMHURST, NICHOLAS, in *Biography*, an English poet and political writer of the eighteenth century, was born at Marden in Kent, received his grammatical education at Merchant Taylors' School, and removed to St. John's college, Oxford, whence he was expelled for misconduct. He attributes his expulsion to the liberality of his sentiments, and his attachment to the principles of the revolution and of the Hanoverian succession. Hence he took occasion to satirize the learning and discipline of the university of Oxford, and to expose the character of some of its most respectable members, in a poem, entitled "Oculus Britannicæ," and published in 1724; and in his "Terræ Filius," a work blending abuse and severity with a considerable portion of wit. It had been an ancient custom in the university, at public acts, for a person under the denomination of "terræ filius," to mount the rostrum, and divert a crowd of spectators with a merry oration in the *Fescennino* manner, interspersed with secret history, railery, and sarcasm, as the circumstances of the times supplied matter; and on this custom the title of this latter work was founded. It was originally written in 1721, came out twice a week in periodical papers, and contained fifty numbers. When Mr. Amhurst quitted Oxford he settled in London as a writer by profession. He first published a volume of *Miscellanies* on a variety of subjects, both sacred and profane. He afterwards published a poem, entitled, "The Convocation," in five cantos, which is a kind of satire against all the writers who had opposed Bishop Hoadly, in the famous Bangorian controversy. He also translated Mr. Addison's Resurrection, and some other of his Latin poems. But his principal literary undertaking was the political paper called "The Craftsman," which was written against Sir Robert Walpole's ministry, and was carried on for a number of years with great spirit and success. In the execution of this work, and in the effect which it produced, he was assisted by Lord Bolingbroke and Mr. Pulteney, and probably by other leaders of the opposition. In 1737 there appeared in this publication an ironical letter, ridiculing the act that had just passed for licensing plays, in consequence of which Mr. Amhurst was arrested and confined, but the prosecution was dropped. He was at length totally deserted by his party, when they made their terms with the crown: and his death happened soon after, viz. in April, 1742. We shall close this article with Mr. Ralph's reflection on the subject. "Poor Amhurst! after having been the leader of his party for the best part of twenty years together, was as much forgotten in the famous compromise of 1742 as if he had never been born! And when he died of what is called a broken heart, which happened a few months afterwards, became indebted to the charity of a bookseller for a grave, not to be traced now, because then no otherwise to be distinguished than by the freshness of the turf, borrowed from the next common to cover it." This anecdote furnishes an instructive lesson to men of literary talents, and teaches them to form, as the basis of their prospects of reputation and happiness, a character for integrity, discretion, and virtue. *Biog. Brit.*

AMIA, in *Ichthyology*, a species of SCOMBER, briefly characterized by Linnæus, as having the last ray of the dorsal fin longer than the rest, "pinnæ dorsalis posterioris radio ultimo longiore." Linn. — Country unknown.

AMIALE, or AMICABLE numbers, in *Arithmetic*, denote pairs of numbers which are mutually equal to the whole sum of each others aliquot parts. Such are the numbers 284, 220, the aliquot parts of which, with their sums, are as follows, viz.

Of 220, 1, 2, 4, 5, 10, 11, 20, 22, 44, 55, 110, — their sum is 284;

Of 284, 1, 2, 4, 71, 142, — and their sum is 220.

The second pair of amicable numbers are 17296, and 18416, which have the same property.

The third pair of such numbers are 9363584 and 9437056.

Schooten, § 9, of his "Exercitationes Mathematicæ." found out these three pairs, and called them *amicable* numbers; though the properties of such numbers had been before treated of by Rudolphus, Des Cartes, and others. Schooten, after Des Cartes, gives the following rule for investigating these numbers. Assume the number 2, or some power of 2, such that if 1 be subtracted from each of these three following quantities, viz. 3 times the assumed number, 6 times the said number, and 18 times the square of the same number, the three remainders may be all prime numbers; then the last prime number being multiplied by double the assumed number, the product will be one of the amicable numbers sought, and the sum of its aliquot parts will be the other. Thus, let $a=2$, and n be some integer number, such that $3a^n - 1$ and $6a^n - 1$ and $18a^{2n} - 1$ be all 3 prime numbers; then will $18a^{2n} - 1 \times 2a^n$ be one of the amicable numbers: and the sum of its aliquot parts is the other.

AMIANTHINITE of Kirwan, in *Mineralogy*. See STRAHLSTEIN.

AMIANTHUS, or MOUNTAIN FLAX, in *Mineralogy*, *Αμιαθος*, Gr. *Amiantus*. *Byffus montanus*. *Linum montan*. *Lana montan*. *Linum incombuftibile*. *Lapis Cyprinus*, Lat. *Amiantb*. *Bergflachs*. *Federweifs*, Germ. *Berglin*, Sweed. *Bierghor*, Dan. *Amiantb Kôlen*, Hung. *Amiant*, Russ. *Lin fossile*. *Amiantb*. Fr. *Amianto*. *Fior di pietra*. Ital. *Talcum asbestos amianthus*, Werner.

The colour of amianthus is generally greenish or silvery white, approaching to mountain green, more rarely yellowish white, olive, or leek green, ochre yellow, or pale flesh red.

It occurs usually amorphous, but sometimes in small separate bundles. Its lustre varies from glimmering to slightly shining, and is either weak-pearly or silken.

Its fracture is fine, and for the most part also strait, and even fibrous, rarely curved. It flies, when broken, into long splintery fragments.

It is found usually slightly transparent, but often opaque. Is soft enough to be scratched by the nail, and is considerably elastic. It has a soft, somewhat greasy feel.

The specific gravity of amianthus, according to Muschenbroeck, is 2.444. According to Brisson, before it has absorbed water, it varies from 0.9088 to 2.3134; after absorption it is from 1.5662 to 2.3803.

This mineral is principally met with in pot-stone or serpentine rocks, either dispersed through them as a constituent part, or accumulated in their clefts and crevices unmixed with any other substance. The Tarentaise, in Savoy, furnishes the purest and most beautiful. It is also met with in Corfica, the Isle of Elba, and Crete; near Zobnitz in Saxony, Salberg, and Swartwick in Sweden; in Cornwall and the Isle of Anglesea in England, and at Portfoy in Scotland.

A filament of the Tarentaise amianthus, when exposed to the flame of the blow-pipe, melts into an opaque globule, which becomes dark-coloured by the continued action of the flame. It dissolves quietly in borax and microcosmic salt, and effervesces with carbonated soda. If exposed in an earthen crucible to a high heat it melts into a dense scoria, strongly adherent to the bottom of the vessel, of a yellowish grey colour, but almost white where it is in contact with the crucible, which last is in some degree penetrated and corroded. The surface of this scoria is overspread with crystalline

needles crossing each other in all directions, or radiating from a common centre; similar acicular crystals are diffused through the substance of the mass. These needles are a little thicker than a hair, and when viewed by a magnifier, appear perfectly transparent, of a quadrangular, prismatic figure, whose angles and faces are remarkably brilliant and well defined; whereas, the filaments of the amianthus, in its natural state, are much too fine to allow of their form being determined even by a very powerful lens. This scoria, on exposure to a greater heat, changes into a green glass, incapable of crystallizing, and which, in a short time, passes through the crucible. A specimen of greyish white amianthus afforded Mr. Kirwan, at 162°.5 Wedgewood, a greenish black, perfectly compact glass. A specimen of amianthus from Greenland, according to Klaproth's experiments, being inclosed in a charcoal crucible, and exposed to the full heat of a porcelain furnace, fused into a scoria of a dirty pearl grey, covered externally with small grains of iron; its fracture shewed a dull, finely porous texture, inlaid with separate, glossy particles.

The action of the mineral acids on amianthus is very feeble; the nitric and sulphuric take up no more than three or four per cent.; the nitro-muriatic, in the proportion of ten parts to one of the fossil, dissolves about 12 per cent. consisting of lime, magnesia, and a little barytes.

Carbonated potash, even assited by ignition, is equally inefficacious with the acids in decomposing this substance. The Tarentaise amianthus, mixed with four parts of pure salt of tartar, and ignited for two hours, only afforded 12 per cent. of matter soluble in sulphuric acid.

The real solvent of this refractory mineral is caustic potash, as appears from Bergman, who, by mixing equal parts of amianthus, carbonated potash, and charcoal, and igniting them for two hours, obtained a mass perfectly soluble in nitro-muriatic acid. This eminent chemist was not, indeed, aware that the addition of charcoal rendered his alkali caustic, the reason of his using charcoal being to decompose the sulphat of barytes, to which he attributes the extraordinary refractiveness of this substance.

The Tarentaise amianthus, according to Bergman, is composed of

Sulphated barytes	-	6.
Carbonated Lime	-	6.9
Carbonated Magnesia	-	18.6
Alumine	-	3.3
Silex	-	64.
Oxyd of iron	-	1.2
		100.0

That of Swartwick contains—

Carbonated Lime	-	13.9
Carbonated Magnesia	-	17.2
Alumine	-	2.7
Silex	-	64.
Oxyd of iron	-	2.2
		100.0

That of Corias in Austria yields—

Carbonated Lime	-	10.5
Carbonated Magnesia	-	12.9
Alumine	-	3.3
Silex	-	72.
Oxyd of iron	-	1.3
		100.0

It is rather singular that sulphated barytes should have been found in the Tarentaise amianthus, as this earthy salt does not once occur among the analyses of the Swedish or Austrian

Austrian specimens, or among those of asbestos, steatite, and other minerals that have the nearest analogy to the amianthus; it is therefore greatly to be wished that some able chemist, in possession of the modern improved means of analysis, would undertake afresh the examination of this mineral.

Amianthus is often confounded with the more flexible kinds of ASBESTUS, to which it bears a near resemblance in external characters and chemical composition. Its fibres are, however, for the most part, more distinct and flexible than those of asbestos; it is more fusible *per se*, and is considerably less acted upon by acids.

The fibrous texture of amianthus, its incombustibility, and the little alteration that it undergoes even in a strong heat, were early noticed, especially among the eastern nations; and methods were found out of drawing the fibres into thread, and afterwards weaving it into cloth: this, when dirtied with grease or other inflammable matter, was cleaned by throwing it into a bright fire; the stains were burnt out, and the cloth was then removed, but little altered in its properties, and of a dazzling white; hence it obtained from the Greeks the name of *Αμιαθος* (undefiled.) In the rich and luxurious times of the Roman empire, this incombustible cloth was purchased at an enormous price, for the purpose of wrapping up the bodies of the dead previously to their being laid on the funeral pile, that the ashes of the corpse might not be scattered and mixed with those of the wood. This practice was indeed probably confined to a few of the richest families, but of its reality there can be no doubt, especially since a funeral urn was discovered in 1722 at Rome, near the Porta Navia, in which there was a skull and other calcined bones, together with a quantity of ashes inclosed in a cloth of amianthus nine Roman Palms long, and about seven palms wide. This interesting relic of antiquity was deposited, by order of pope Clement XI. in the Vatican library.

The dislike of burning the dead occasioned the manufacture of amianthine cloth to be neglected, and at length entirely forgotten in Europe; but though it has ceased to be an article of necessity or luxury, yet the method of its preparation has occasionally attracted the notice of travellers, and occupied the time of the curious. Marco Polo asserts, that in the east the mineral is gently bruised in a mortar to separate the fibres, and, being washed till the water comes off clear, is dried and then manufactured as flax or wool. Ciampini of Rome, in 1691, and then Mahudel, after many trials, published the following as the best way of preparing the incombustible cloth. Having previously steeped the amianthus in warm water, divide its fibres by gently rubbing them with the fingers, so as to loosen and separate all the extraneous matters, then pour on repeatedly very hot water, as long as it continues to be in the least discoloured. Nothing will now be left but the long fibres, which are to be carefully dried in the sun. The bundles of threads are to be carded by very fine cards, and the long filaments thus obtained are to be steeped in oil to render them more flexible. A small quantity of cotton or wool is to be mixed, and by means of a thin spindle the whole is to be drawn into thread, taking care that the amianthus may in every part be the principal material. The cloth being then woven in the usual manner, is to be placed in a clear charcoal fire to burn off the cotton and oil, when the whole remaining tissue will be pure white amianthus. The shorter fibres that are incapable of being woven have been sometimes made into paper; the process of which is the same as that employed for common paper, except that a greater proportion of paste or size is required: after having been once made red hot, however, the paper becomes bibulous and brittle. For written documents of great importance, it

might be worth while to be at extraordinary expence for incombustible paper and indelible ink; the former of these may be prepared from the longer fibres of amianthus, so as to be much less brittle than when the shorter ones are alone made use of; and for the ink the following receipt will be perfectly efficacious. Take one part of sulphat of iron (green vitriol) and two parts of alum, dissolve them together in warm water, and then add pearl-ash as long as any precipitate takes place; boil the mixture, and throw it on a filter, allow the precipitate to drain after being washed with warm water, and, while yet soft, dissolve it in distilled vinegar; use this moderately concentrated for ink, and the characters, after combustion, will be of a yellowish brown colour, and sufficiently legible.

Amianthus threads are also sometimes used as perpetual wicks for lamps; they, however, occasionally require cleaning from the soot that collects about them; and in the hottest part of the flame the fibres are apt to run together, in a state of sensu fusion, so as to prevent the due supply of oil. Weidenmann, *Handbuch der Mineral.* p. 465. Lenz, *Versuch, &c.* vol. i. p. 371. Ciampini, de *Incombustibili Lino*, Romæ, 1691. Mahudel de *Lino Incombust.* Mem. de l'Acad. des Inscriptions, vol. vi. Bruckmann, *Hil. Nat. curiosa Lapidis et asbestos*, Brunsvigæ, 1727. Kirwan's *Minerology*, vol. i. Klaproth's *Analytical Essays*. Bergmann, on *Asbestos Earth*, *Ess.* vol. iii. p. 181. Saussure, *Voyages dans les Alpes*, § 113. and following, § 1914. Bomare, *Dict. d'Hil. Nat.* article *Amiante*.

AMIATUS, in *Entomology*, a species of HESPERIA. Wings entire, black, posterior margin yellow: head and tail red. Inhabits America. The antennæ hooked, black: wings uniformly black, except the yellow margin, body black, head and tail red. Fabricius.

AMIAZ *Island*, in *Geography*, lies on the coast of Brazil, in which the city of Santos is situated, and hence it is called the gulf or bay of Santos. St. Vincent's is in another part of the same island, and before both there is good anchoring.

AMICABLE *benches*, *scamma amicabile*, in *Antiquity*, are generally supposed to denote the seats in the Roman courts, whereon the advocates were placed. Some think that these had but little title to the denomination of *amicable*, and therefore will have the word to be here used for the benches whereon the *assessors*, or those called *judices pedagæ*, were placed.

AMICABLE *compounder*, *amicabilis compositor*, is used by some ancient law-writers for an arbitrator.

AMICABLE, or *amicable compounder*, among the French, is a person who acts the part of a common friend, to reconcile two merchants or traders who have disputes, or are at law together. He differs from the *arbitrator*, in that, in order to make the two disputants agree, he often prevails upon both to give up some part of their right or claim, which an arbitrator, who performs the functions of a judge, is not, it seems, at liberty to do.

AMICABLE *Numbers*. See AMIALE.

AMICABLE *society*. See ASSURANCE.

AMICIA. See ALMUCIUM.

AMICITIA.—*Tenure in AMICITIA*, is applied in *Ancient Writers* to land granted freely, and of mere good will, to be enjoyed at the discretion of the donor.

AMICLÆ, or AD LANTULAS, now *Portella*, in *Ancient Geography*, a town of Italy between Terracina and Fofetti.

AMICONI, JACOPO, in *Biography*, a painter of history and grotesque, is supposed to have been born in the territory belonging to the republic of Venice, to have studied the art of painting for some years at Venice, and to have completed himself in his profession at Rome. The liveliness of his imagination,

imagination, the readines of his invention, and the freedom of his hand, soon recommended him to the public esteem, and he found encouragement and employment in most of the courts of Europe. He is said to have possessed many of the accomplishments of a good painter; but though his merit in many respects must be allowed, and his drawing is generally correct, yet his colouring is much too cold, too pale, and, as it is termed by the artists, too mealy. His compositions are well known in this kingdom, and many of his pictures are admitted into the collections of the first nobility; but nevertheless few particulars of his life have been ascertained. Pilkington.

AMICTUS, in our *Ancient Writers*, the uppermost of the six garments, worn by priests; the others are *alba*, *cingulum*, *stola*, *manipulus*, and *planeta*. It was tied round the neck, *Ne inde ad linguam transfret mendacium*; and covered the breast and heart, *Ne vanitates cogitet*.

This garment is otherwise called *anabologium*; sometimes *ambologium*, *anagologium*, and *humerales*. In ancient English writers it is called *mitte*.

The amict is also worn by deacons, sub-deacons, and *accoliti*, when they officiate at the altar.

The priests and deacons, in some dioceses, wear amicts on their heads from All-saints to Easter; though, by the canons, they be expressly forbid to wear the amict without some considerable occasion.

Mr. Thiers asserts, that the use of amicts was introduced into the Latin church before the twelfth century. Dom. de Vert maintains the contrary, chiefly from a figure of St. Firmin, first bishop of Amiens, supposed to have suffered martyrdom towards the beginning of the seventh century, whereon he is represented in his pontifical habit, with the amict on his head.

AMICTUS, in Roman *Antiquity*, denotes any upper garment worn over the tunica.

AMICU, in *Geography*, a lake in the province of Cumana, South America, whose waters run southerly through Parima river, into the Amazon.

AMICULATUS, in *Conchology*, a species of *CHITON*, that inhabits the Kurile islands. Shells of eight valves, kidney shaped, and very brittle. External covering a scabrous coriaceous membrane.—Length six inches. Gmelin.

AMICULUM, in *Antiquity*, denoted an upper garment worn by the women. The amiculum is said to have differed from the *palla*; but wherein the precise difference lay does not appear. An amiculum was also in use among the men. This seems to have been the same with the *chlamys*, or *paludamentum*.

AMICUS, or AMICONESOS, in *Ancient Geography*, an island of the Red Sea, according to Ptolemy. Amicus was the epithet of Hercules among the ancients, and hence it is said was derived the name of this island. This is probably the same with the *Amicusia* of Steph. Byz.

AMICUS *Curie*, in *Law*. If a judge is doubtful, or mistaken in matter of law, a slander-by may inform the court, as *amicus curiæ*. 2 Co. Init. 178. Any one as *amicus curiæ* may move to quash a vicious indictment; for if there were a trial and verdict, judgment must be arrested. Comberb. 13.

AMID AMID, in *Geography*, a ridge of mountains in Abyssinia, lying behind the two ridges of Litchambara and Aforinasha, commence behind Samseen, in the south-west part of the province of Maitsha, and become high only from the mountain of Adama; resembling in their shape the former ridges, and embracing them in a large curve, like a crescent. Between Amid Amid and the ridge of Litchambara is the deep valley known by the name of St. George,

through the middle of which runs the river Jemma, the sources of which are in the mountains of Amid Amid. This triple ridge of mountains, disposed behind one another in the form of three concentric circles, suggest an idea that they are the *MOUNTAINS of the moon*, or the *montes lunæ* of antiquity, at the foot of which the Nile was said to rise. Amid Amid may perhaps exceed half a mile in height; they certainly are not three quarters of a mile, and fall much short of the fabulous height ascribed to them by Kircher. These mountains have excellent soil, and are every where covered with fine pasture; but as this unfortunate country has been for ages the theatre of war, the inhabitants have only ploughed and sown the top of them, out of the reach of enemies or marching armies. On the middle of the mountain are villages built of a white sort of grass, which makes them conspicuous at a great distance; the bottom is altogether grass, where their cattle feed constantly under their view; and upon any alarm, they are driven up to the top of the mountains, so as to be out of danger. The hail lies often upon the top of Amid Amid for hours, but snow was never seen in this country; nor have they in the Amharic dialect any word by which to express it. The hail, nevertheless, which frequently occurred at Gondar, even when the sun was vertical, happened only when the wind blew directly from Amid Amid. Bruce's Travels, vol. iii. p. 583, &c.

AMID, or AMIDA, in *Ancient Geography*, a famous city of Mesopotamia, was situated in a fertile plain, watered by the natural and artificial channels of the Tigris, one stream of which bent in a semicircular form round the eastern part of the city. It was also called Constantia, in honour of the emperor Constantius, who fortified it with strong walls and lofty towers. It was provided with an arsenal of military engines, and the ordinary garrison had been reinforced to the amount of seven legions, when the place was invested by the arms of Sapor, king of Persia. The operations of this siege are minutely described by Ammianus Marcellinus (xix. 1—9.) who himself acted an honourable part in the defence of it, and escaped with difficulty when the place was stormed by the Persians. After a very obstinate combat between the assailants and the besieged, Amida was betrayed by the treachery of a deserter, who pointed out to the Barbarians a secret and neglected staircase, scooped out of the rock that hangs over the stream of the Tigris. But this stratagem failed, and Sapor was under the necessity of recurring to the slower but more certain operations of a regular siege, in the conduct of which he was instructed by the skill of the Roman deserters. His works, artfully and laboriously constructed, were more than once destroyed by the fire of the Romans; but at length the strength of the garrison, wasted by the sword and by disease, was exhausted and constrained to yield to the fury of the assault. The soldiers, the citizens and their wives, all of them who had not time to escape through the opposite gate, were involved by the conquerors in a promiscuous massacre. The siege, however, lasted 73 days, and 30,000 of the veterans of Sapor fell under the walls of Amida. Constantius, the emperor, is said to have wept over its ruins. When the inhabitants of Nisibis were reduced to the necessity of leaving their own city, in consequence of Jovian's treaty with the Persians, they retired to a new-built quarter of Amida; and this city, with the reinforcement of a very considerable colony, soon recovered its former splendour, and became the capital of Mesopotamia. In the year 501 it again sustained a long and destructive siege; and after three months it was taken by Cabades, Cavades, or Kobad, the Persian king. Most of the inhabitants were put to the sword, and the town was pillaged. It was again in 505, restored to the

Romans, on condition of their paying to the king of Persia 50 talents. Upon the decline of the Roman empire, it reverted to the Persians; from them it was transferred to the Saracens; and it is now possessed by the Turks. Amida assumes in modern times the provincial appellation of DIAR-BEKIR, and is also called by the Turks *Kara-amed*; the epithet *kara* being derived from the blackness of the stone which composes the itony and ancient wall of Amida.

AMIDA, in *Mythology*, a god worshipped by the Japanese, who has many temples erected to him in the island of Japan, of which the principal is at Jeddo. They suppose that he flourished many thousand years ago, and that after a life of voluntary mortification and austerities, and of signal miracles and exemplary virtue, extended to 1000 or 2000 years, he passed by a voluntary death to another state, where he was advanced to the dignity of a god. The Japanese have such a confidence in their idol Amida, that they hope to attain eternal felicity by the frequent invocation of his name. One of the figures of this idol is represented at Rome.

Cano, the son of Amida, is likewise held in great veneration, and has a stately temple near the city of Meaco, in which are 1000 images or statues of him, beautifully carved and regularly arranged.

AMID-SHIPS, a *nautical* term, denoting the middle of a ship, either with regard to her length or breadth.

AMIENS, in *Geography*, a city of France, and capital of the department of the Somme; before the revolution it was the capital of Picardy, and the see of a bishop, the suffragan of the archbishop of Rheims. It is situated in a plain, on the river Somme, which passes through it in three distinct channels, that afterwards unite; and may be seen at a great distance, decorated with a number of lofty towers, among which the cathedral commands peculiar notice. This is an elegant Gothic edifice, beautifully proportioned and delicately wrought; and the nave is particularly admired. It has many other collegiate, parochial, and public buildings, and an academy of arts and sciences founded in 1750. It is defended by a citadel and ramparts, on which are planted trees, which form a pleasant walk. The river Somme is navigable to the town. The houses are well built in the old taste; and the number of inhabitants has been reckoned between 40 and 50,000. Tinseau (Statistical view of France,) estimates them at 40,289. Its 4 cantons contain 45,157; its whole territory includes 100 kilometres and 12 communes. The commerce of Amiens has been very considerable, particularly in woollen stuffs, camlets, and shags. It has also been famous for its soap-manufacture.

AMIENS, in Latin *Ambianum* and *Samarobriua*, is a place of great antiquity. It appears from Cæsar's account in his Commentaries to have been one of the principal cities of Gaul; he held a general assembly of the Gauls in it, and committed it to the guard of a legion. Cicero refers to it in several parts of his epistles as a place of note; and Ammianus Marcellinus (lib. xv. c. 27.) mentions it as "a city eminent among others." It was enlarged by the emperors Antoninus and Marcus Aurelius; and it was the place in which Constantine, Constant, Julian, and other emperors frequently resided. The earldom of Amiens, comprehending a great part of the territory of the Ambiani, and since called Picardy, was formerly conferred by the kings on the bishops of this city. Philip Augustus, in 1193, annexed it to the crown. The states of France were summoned at Amiens by Lewis XI. in 1264, on the appeal made to him by Henry III. and the barons of England; and the appeal was decided in favour of Henry. Charles VII. granted it to Philip the Good, duke of Burgundy, in 1435; and Lewis XI. reunited it to the crown in 1477. Amiens was

taken by the Spaniards in 1597, by the following stratagem. Soldiers, disguised like pealants, conducted a cart, loaded with nuts, and let a bag of them fall jill as the gates were opened. Whilst the men in garrison were busily employed in gathering up the nuts, the Spaniards entered in a body, and made themselves masters of the city. Henry IV. however, retook it in the same year. Amiens is distinguished as the native place of Voiture, Rohault, Du Cange, and Gresset. It has lately, *viz.* in 1802, acquired celebrity by the negociation, which terminated the war between England and France, and other belligerent powers, and by the signature of the definitive treaty, by the plenipotentiaries of the four contracting parties, Spain, Holland, France, and Great Britain, on the 27th of March, which established peace. Amiens is situated in N. lat. 49° 53' 58"; and E. long. 2° 17' 56".

AMIESTES, in *Commerce*, cotton cloths which come from the East-Indies.

AMIGONI, OCTAVIO, in *Biography*, a painter of history and portrait, was born at Breiscia, in 1605, and was a disciple of Antonio Gandino. His expression, and taste of design, were very remarkable and very elegant; and his compositions, executed with a free, firm, and masterly touch, and with figures as large as life, were much applauded in several parts of Italy. Pilkington.

AMILICHUS, in *Ancient Geography*, a river of Greece, in Achaia, situate to the north-west.

AMILICTI, in the Chaldaic *Theology*, denote a kind of intellectual powers, or persons in the divine hierarchy. The amilicti are represented as three in number, and constitute one of the triads, in the third order of the hierarchy.

AMILO, in *Ancient Geography*, a river of Mauritania, mentioned by Pliny.

AMILOS, or AMILUS, a town of Arcadia, to the north-west of Orchomane.

AMILPAS, in *Geography*, two volcanoes in the province of Guatemala, in New Spain, near the mountains of Soconusco.

AMINEL, in *Ancient Geography*, a people of Thessaly, who, according to Aristotle, transported their vines into Italy, whence the expression *amineæ vites*.

AMINEL, in *Geography*, a small town of Africa, in Barbary, situate on the eastern side of the kingdom of Tripoli.

AMINIUS, in *Ancient Geography*, a river in the southern part of Arcadia, which runs from north-east to south-east into the Helissus.

AMIRANTE, a great officer in Spain, answering to the lord high-admiral in England.

AMIRANTE, or CARNIBACO BAY, in *Geography*, a large bay on the north coast of the isthmus of Darien, and near the limits of North and South America. It is in the province of Veragua, on the north-west of the Toro channel and bay of Conception, from which it is separated only by a congeries of rocks, which lie in the ocean, near the coast. N. lat. 9° 5'. W. long. 82° 30'.

AMIRANTE ISLANDS. See ALMIRANTE.

AMISENUS SINUS, *gulf of Amisenus*, in *Ancient Geography*, a gulf or bay of the Euxine sea, situate to the east of the mouth of the Halys, on the coast of the kingdom of Pontus; so called from the town of Amisus.

AMISIA. See EMS.

AMISS *Drawing*. See DRAWING.

AMISSA LEX. See LEX.

AMISSEN or MISSEREN, in *Geography*, a point on the gold coast of Africa, east of Cormantine, between it and Dajou or Tagu, near the rough point. N. lat. 5°. E. long. 1° 10'.

AMISTOWES, a town of Bohemia, in the circle of Koniggratz, 10 miles west-south-west of Biezow.

AMISUS,

AMISUS, in *Ancient Geography*, a considerable city of Asia Minor, in the kingdom of Pontus, was situated on the coast of the Euxine sea, near the mouth of the Halys and Iris, founded by the Milesians, and peopled also by a colony of Athenians. It was at first a free city, like the other Greek cities in Asia, but afterwards subdued by Pharnaces, king of Pontus, and made the metropolis of his kingdom. Pliny says, that it maintained its republican and popular form, till it was conquered by the Persians; but Alexander restored its liberty, of which it was deprived by the king of Pontus. It was in extent the largest city of the kingdom, except Sinope. Mithridates had a palace in this city, and it was adorned with temples and many magnificent buildings, when Lucullus took it. Its inhabitants were massacred by Pharnaces, the son of Mithridates; but it was retaken by Cæsar, and made a free city.

AMITERNUM, a town of Italy, north-east of Rome, in the country of the Sabines, situate, according to Strabo, on the declivity of a mountain, and having, in his time, the remains of a theatre and a temple. It was taken by Sp. Carvilius, in the year of Rome 460, and subsisted to the time of the contest between the Guelphs and Gibellines, when it sunk under the town of Aquila, newly erected by the emperor. It was famous as the native place of the historian Sallust. Some remains of it are still discernible near S. Vittorino and the Springs of the Aternus.

AMITHOSCUA, a country of Arabia Felix, according to Pliny.

AMITIENSES, a people of Etruria, according to Pliny.

AMITTERE *legem terræ*, a law-phrase, signifying the forfeiture of the right of swearing in any court or cause; or the becoming infamous.

This is the punishment of a champion overcome, or yielding in the combat: of jurors found guilty in a writ of attain; and of persons outlawed. Vide Glanvil. lib. ii. and see the stat. 5 Eliz. cap. 9. against *perjury*.

AMIXOCORES, in *Geography*, a people of America, in Brazil, near the country of Rio-Janeiro.

AM-KAS, in *History*, a name given to a spacious saloon in the palace of the great Mogul, where he gives audience to his subjects; and where he appears on solemn festivals with extraordinary magnificence. His throne is supported by six large steps of massy gold, set with rubies, emeralds, and diamonds; and estimated at 60,000,000l.

AMLAH, in *Geography*, one of the Fox islands, at the distance of about 15 versts from ATCHAK, and nearly of the same size. It has a harbour on its south side. It lies in about N. lat. 52° 30'. W. long. 173° 30'.

AMLAMGODE RIVER is on the southwest-coast of the island of Ceylon, between Barberin island on the north-west, and Regama point on the south-east, about eleven leagues distant. It is not navigable: it is known by a garden of cocoa trees.

AMLET. See OMELET.

AMLING, CARL GUSTAV. AB, in *Biography*, a painter and engraver, was born at Nuremberg, in 1651, and learned the art of engraving from Francis de Poilly, whose style he imitated but never equalled. He chiefly excelled in portraits, and failed in historical subjects. He was engraver to the duke of Bavaria, and died in 1702. Among his portraits are "Maximilian Emanuel," elector of Bavaria, a large upright plate, esteemed as one of his best; and among his historical subjects are "the history of the emperor Otho," from the tapestries at Munich, in 13 plates, and "the Four Seasons," from the same tapestries. Strutt.

AMLWCH, in *Geography*, a small village in the island of Anglesea, adjoining to the mines of the Paris mountain, and raised into eminence by the works and wealth which they occasion. The two great proprietors of these mines, Lord Uxbridge and Mr. Hughes, have adorned this village with two elegant houses for their occasional residence, one called the Mona, and the other the Paris Lodge. The little port of Amlwch is placed in a small cove, among the cliffs, about half a mile below the village, and is admirably formed for receiving and arranging the several vessels which are employed in the copper and brimstone trade. It often also affords a safe haven to those ships, which, in their passage from Ireland, are driven to the north-east, round the point of Holyhead, and cannot make that harbour.

AMMA, in *Ancient Geography*, *Lacme*, a river of Switzerland, which runs into the Aar, near Soleure.

AMMA, a town of Asia, in Palestine, belonging to the tribe of Aser; called, by Jerom, Amma.

AMMA, in *Middle Age Writers*, denotes a spiritual mother. In this sense, the word was chiefly understood of an abbess, or superior of a nunnery.

AMMA, or HAMMA, from *αμμα*, *vinculum*, in *Surgery*, a technical term, denoting the bandage employed to sustain RUPTURES OF HERNIÆ. This important instrument will be more properly described under the article HERNIA, which see.

AMMÆA, in *Ancient Geography*, a town of Mesopotamia, near the Euphrates, towards the Persian gulf, according to Ptolemy.

AMMÆDARA, a town of Africa Propria, in that part called by Ptolemy Numidia Nova.

AMMAENSIA JUGA, a name given by Pliny to the mountains of Lusitania.

AMMAITIA, a town of Asia, in Assyria.

AMMAN, or AMANA, a town of Asia, in Arabia; it was the principal town of the Ammonites, and called also Rabbath.

AMMAN, in the German and Belgic *Policy*, denotes a judge who has the cognizance of civil causes.

The word is also written *amant*. Thus it occurs in writers on the French officers, where it stands for a notary, or parochial officer, who draws acts or instruments.

AMMAN, JOHN CONRAD, in *Biography*, was born at Schaffhausen, in Switzerland, graduated at Basl in 1687, and practised physic at Amsterdam, towards the close of the 17th and beginning of the 18th centuries. He applied himself with particular attention to the discovery of a method of teaching persons born deaf and dumb to speak; and from observing the motions of the lips and mouths of persons addressing them, to understand their meaning. In this art he attained great perfection, and many persons born with those defects, were restored to society, through his skill and perseverance. In the year 1692, he published an account of the process by which this was effected, first in Dutch, under the title of "Surdus Loquens;" and in 1702, in Latin, adding to the title, "Seu Dissertatio de Loquela:" Opus, Haller says, *vere aureum*; no material addition having been made to his directions, which are now every where practised, by persons professing that art. The work has always been held in high estimation, has been translated into most of the European languages, and passed through numerous editions. Haller *Bibl. Med. pract. et Chirurg.*

AMMAN, JOHN, son of Conrad, also doctor in medicine, settled in Petersburg, where he gave lectures in botany. He published "Icones et descriptiones stirpium rariorum Ruthenicarum." Petropoli, 1739, 4to.

The figures were principally taken from a collection of dried specimens of plants, preserved at the Imperial academy, Peterburgh. Eloy Dictionaire Histor. de la Med.

AMMAN, PAUL, was born at Breslaw, Augull 1634. After finishing his school education, he travelled for improvement over various parts of Germany, Holland, and England. In October 1662, he was admitted doctor in medicine at Leipzig, and in succession, professor of medicine, botany and physiology in the same university, in which offices he acquired considerable reputation. He died, February 4th. 1691.

Haller gives a long list of dissertations published by him, but his principal works are, "Animauni parensis ad docentes occupata," 1673, 12mo.; "Praxis vulnerum lethaliu sex decadibus Historiarum rariorum, Franco," 1700, 8vo. For the titles of his other works, see Haller's Bib. Med. Pract.

AMMAN, or AMMON, JOST or JONOCUS, a designer and engraver, was born at Zurich, in Switzerland, A. D. 1539, resided at Nuremberg, and died there in 1591. He was an indefatigable artist, and possessed considerable merit as an engraver. The number of his designs and plates is very great. His engravings were chiefly on wood, and are much superior to those on copper. Although he does not manifest much invention, his figures are well proportioned; and his animals are touched with great spirit. His manner of engraving is said to have been neat and decided. Among his performances we may select his "*πανεπισταμια*, omnium liberalium mechanicarum et sedentarium artium genera continens, &c." Francof, 1564, amounting to 115 prints, and exhibiting the different artists and tradesmen in their respective employments. He also engraved in wood some detached pieces, and on copper "The Illustrious Women," beginning with Eve; a set of "Figures of Warriors," 1590; "The Four Seasons and the Four Elements," 1569. Strutt.

AMMAN JOHN, an artist and bookseller, lived at Hanau, in Germany, about the year 1640. A set of small wooden cuts, representing "the Passion of our blessed Saviour," executed very much in the style of the former artist, and published at Amsterdam, with Latin verses, in 1623, is reckoned to possess a considerable share of merit. Strutt.

AMMANATI, BARTHOLOMEO, a celebrated sculptor and architect, was born at Florence, in 1511, and studied sculpture in his native town under Bandinelli, and at Venice under Sanfovino. He designed the porticoes of the Pitti palace, and the bridge Della Trinita, at Florence, which is accounted one of the most beautiful works, since the revival of the arts. At Rome he built the palace Ruspoli, and the noble front of the Roman college. On his return to Florence he expended his wealth in building the church of San Giavanno, belonging to the Jesuits, in which he was interred. Ammanati's large work "La Citta," comprehends the designs of all the public buildings necessary in a capital city. He died either in 1586 or 1592. His wife, Laura Battiferi, was distinguished for her poetical productions, of which a collection was printed at Florence, in 1560. Nouv. Dict. Hist.

AMMANNIA, named by Houtson in honour of J. Amman, in *Botany*, a genus of the *tetrandria monogynia* class and order, of the natural order of *calyncathema* and *salicarie* of Jussieu; its characters are, that the *calyx* is a perianthium bell shaped, oblong, erect, with eight streaks and folds, quadrangular, eight-toothed, teeth alternate bent in, and permanent; *corolla* none, or four-petalled, petals vertically ovate, spreading, inserted into the calyx; the *stamina* have filaments, (four or eight) bristly, the length of the

calyx into which they are inserted, anthers two; the *pyllium* is a germ subovate, large and superior, style simple, very short, and stigma headed; the *pericarpium* is a roundish, four-celled capsule (berry) covered with the calyx; the *seeds* are numerous and small. There are seven species, viz. 1. *A. latifolia*, islandia of Brown. Jamaica. aparines of Sloane Jamaica. *A. purpurea* of La Marek, or broad-leaved *A.* "with leaves half-stem clasping, square stalk, and erect branches." This species grows about a foot and a half high, with leaves long, narrow and triangular, as long as the stem, of a pale green colour; and the flowers proceed in clusters from the joints where the leaves adhere. It is a native of moist places in Jamaica, whence the seeds were sent about 1731 by Dr. Houtson to England, and from Chelsea they have been distributed to most of the botanic gardens in Europe. 2. *A. ramosifera*, ludwigia of Clayt. Virg. branching *A.* "with leaves half-stem-clasping, stalk square, and spreading branches." This is an annual plant, and grows naturally in Virginia and Carolina; rises about a foot high, with red succulent stalks, putting out side branches, opposite, round, and simple, the flowers are produced single from the axils on the lower part of the branches, and toward the top in clusters; they have little beauty; cultivated in 1759, and preserved for variety. 3. *A. baccifera*. *A. verticillata* of La Marek, cornelia verticillata of Ard. Spec. "with leaves sub-petiolate, capsules larger than the calyx and coloured;" it has four-toothed calyxes. This is a native of China, and naturalized in Italy. It has little beauty, and is rarely preserved in gardens. 4. *A. octandra*, eight-stamened *A.* "with sessile linear-lanceolated leaves, and flowers petal-bearing, and eight-stamened;" the petals are blood red; found by Koenig in the East Indies. 5. *A. pinnatifida*, pinnatifid-leaved *A.* "with stalks procumbent, rooting, compressed, and leaves linear, pinnatifid." The flowers are small, corolla red, and capsules four-cornered; found by Sonnerat in the isle of Java. 6. *A. debilis*, cluster-flowered *A.* "with leaves lanceolate, attenuated at the base, stem branching, flowers in bundles from the axils, and capsules two-celled." This species is annual, the calyx angular, petals pale-purple, filaments shorter than the calyx, anthers ovate and yellow, capsule ovate and two celled; a native of the East Indies; introduced in 1778 by Sir Joseph Banks; and flowers in July and August. 7. *A. sanguinolenta*, "with leaves, half-stem-clasping, cordate at the base, flowers sub-peduncled, eight-stamened, petal-bearing;" a native of Jamaica and Domingo.

Culture. The three first species must be raised from seeds on a hot-bed in spring, and afterwards removed to another hot-bed in order to bring them forward. When the plants have acquired strength they should be transplanted into pots filled with rich light earth, and placed under a frame, shading them till they have taken fresh root; they should then be placed in a glass case or stove, to ripen their seeds, for the plants are too tender to thrive in the open air in this country, unless the summer be very warm. The second sort, raised in a hot-bed, in the spring, and planted in a warm border, will perfect its seeds in the open air. The other species are stove-plants. Martyn's Miller.

AMMANO, in *Geography*, a town of Japan, in the province of Fida.

AMMATA, or ΑΜΜΑΤΗΑ, in *Ancient Geography*, a town of Asia, in Palestine, belonging to the tribe of Juda.

AMMER, in *Geography*, a powerful but infamous tribe of Arabs, who inhabit the province of Constantina, in Africa, and who, contrary to the practice of their brethren, prostitute their wives and daughters. Shaw's Travels, p. 53.

AMMERCOT, a town of Hindoostan, situate in a sandy desert, 138 miles north-east of Nusserpour, and 256 south of Moultan. Feenhta reckons it about 100 cosses from Tatta. In the Ayin Acbaree it is classed as belonging to the Nusserpour division of the province of Sindy. N. lat. 25° 40'. E. long. 70°.

AMMEREN, a town of Germany, in the circle of Westphalia, and duchy of Juliers, six miles east-north-east from Ruremond.

AMMERSEE, a lake of Germany, in the circle of Bavaria, 12 miles long, and from two to three broad, 80 miles west of Salzburg.

AMMESPACH, a river of Germany, runs into the Erlebach, in the archduchy of Austria, on the borders of Stiria.

AMMI, formed from *αμμοι*: *fund*, in Botany, a genus of the *pentandria digynia* class and order; of the natural order of *umbellata* or *umbelliferae*; its characters are, that the *calyx* has its universal umbel manifold, frequently of 50 rays, the partial short and crowded, the universal involucre of many linear, pinnatifid, acute leaflets, scarcely the length of the umbel, the partial many-leaved, leaflets linear, acute, simple, shorter than its umbellet, the proper perianthium scarcely apparent; the *corolla* universal uniform, with all the floscules fertile, the proper of five inflex, heart-shaped petals, of unequal size in the ray, almost in the middle of the disk; the *filamina* have capillary filaments. anthers roundish; the *pistillum* has a germ inferior, styles reflex, and stigmas obtuse; no *pericarpium*, fruit roundish, smooth, small, streaked, and bipartite; the *seeds* two, convex and streaked on one side, and flat on the other. Martyn reckons three, and Gmelin four species. 1. *A. majus*, common bishop's weed, ammioselinon, "with lower leaves pinnate, lanceolate and serrate, upper ones multifid and linear." This species is annual, and grows in vineyards and fields, in the southern parts of Europe, and in the East. There is a variety reckoned by Bauhin a distinct species, under the title of *A. majus toliis plurimum incisus, et nonnihil crispis*; but Mr. Martyn has raised this variety from the beds of the former. 2. *A. copticum*, "with leaves super-decompound, linear, and seeds muricate." This is of the stature of Dill, green, stem smooth and streaked; leaves tripinnate oblong, smooth, and linear; umbels with ten rays; involucre five-leaved; partial involucre seven-leaved; corollas white, equal and five angled; fruit ovate and muricate on every side, seeds streaked with five swellings, aromatic; found by Forskahl in Egypt; annual, introduced in 1773 by John Earl of Bute. 3. *A. glaucifolium*, *daucus petraeus glaucifolius* of Bauhin, perennial bishop's weed, "with the subdivisions of all the leaves lanceolate." This has the appearance of a variety of the first species; is a native of the south of France; described by Miller as a perennial plant, preserved for variety, but having little beauty. 4. *A. laurifolium*, "with bipinnate leaves, the winged leaflets trifid, the fruit connected in whirls with the common rib." La Marek has referred to this genus, the *DAUCUS visnaga* of Linnaeus, and the *ammi anethifolium*, with oblong pinnated leaves, the leaflets multifid and capillary, and the petioles canaliculated; the *daucus meoides* of Hort. Reg. brought originally from the Levant, and flowering in the beginning of Autumn.

Culture. The 1st species is propagated by seeds sown in Autumn in the place where they are to remain; in the Spring the ground should be hoed and the plants thinned as in the management of carrots, leaving them four or five inches asunder, or in good ground at the distance of six inches; after which they will require no further care, besides being kept free from weeds. They will flower in

June, and the seeds will ripen in August, and should be gathered as they ripen, for they will soon scatter. The 3d species will grow in any open situation, is very hardy, and thrives best in a moist soil. Martyn's Miller's Dict.

AMMI, or *semen ammios veri*, in the *Materia Medica*, a kind of aromatic seed, the produce of the sison *ammi* of Linnaeus, sometimes though now rarely brought from the Levant, and formerly used in medicine. The seed is small, whence, according to Lemery, the name of the plant ammi, from *αμμοι*: *fund*, striated, of a greyish brown colour, somewhat bitterish taste, and fragrant smell, approaching to that of organum. This seems to have been the ammi of Dioscorides and Hippocrates. It is now very rarely prescribed. These seeds, distilled with water, yield a considerable quantity of a yellowish essential oil, containing their whole smell and flavour; the remaining decoction is unpleasantly bitterish. Spirit of wine carries off, in its exhalation, the odorous principle of the ammi. These seeds have been recommended as a stomachic, emmenagogue, diuretic, and an elegant aromatic carminative. Linnaeus gives the denomination of *semen ammios veterum* to that of the *LAGOECIA Caminoides*. The seeds of the *ammi majus* above described, or *ammi vulgare*, are substituted for the former in medical use. They are weaker both in smell and taste; nor does their flavour resemble that of organum. The essential oil and the spirituous extract are both less grateful and less pungent.—Lewis and Murray.

AMMI. See BUNIUM, CICUTA, SESELI, SISON and SIUM

AMMIANUS MARCELLINUS, in *Biography*, a Roman historian of the fourth century, was a native of Antioch, where his family made some figure, and in early life served several years in the army in quality of protector domesticus, which was then an honourable post. In 350 he accompanied Ursicinus, a general of the horse under the emperor Constantius, into the East; and followed him in several expeditions, from 350 to 359, in which he acquired military reputation. He attended Julian in his Persian expedition in 363, and was either at or near Antioch in 371, when the conspiracy of Theodorus was discovered in the reign of Valens, and was a witness of the torments of many persons whom Valens ordered to be put to death on that occasion. It is not certain whether he obtained any higher rank in the army than that of domestic protector. When he quitted the army, he resided at Rome, and employed himself in writing the history of the affairs of the empire, during a period of three centuries. Though he was a Greek, he chose to write in Latin: but his Latin, in the opinion of Vossius, indicates that he was a Greek and a soldier. His history was divided into 31 books, commenced with the reign of Nerva, where Tacitus ends, and terminated with the reign of Valens.—The first 13 books, ending with the reign of Constantius, and containing a superficial epitome of 257 years, are lost; the last 18 books, now extant, begin with the 17th year of Constantius, A. D. 353, and conclude with the year 375; though some particulars of a later date are mentioned, from which we may infer, that the historian lived at least to the year of Rome 1142, or A. D. 390. The style of his history is reckoned harsh and verbose; but this defect is amply compensated by the variety of information which he communicates from his own personal knowledge, and by the fidelity and impartiality of his relation. Mr. Gibbon (Hist. vol. iv. p. 426.) represents him as "an accurate and faithful guide, who has composed the history of his own times, without indulging the prejudices and passions, which usually affect the mind of a contemporary." Some have supposed that he was a Christian; but of this

there is no sufficient evidence. As he wrote under Christian emperors, he might not judge it proper to profess his religion unreasonably, and he might think it most prudent to be cautious in his reflections upon Christianity. Although he was a pagan, as is evident from the respect with which he speaks concerning the pagan divinities, and from his defence and recommendation of heathen auguries, and such methods of investigating futurities, he nevertheless manifests no animosity against the Christian religion; on the contrary, he bears honourable testimony to the plain and simple nature, and the equitable and gentle spirit of Christianity, to the moderation of some Christian bishops, whilst he condemns the severity with which some Christians treated one another, and to the firmness and fidelity of the Christian martyrs. Hence Mosheim concluded that Marcellinus and some other learned men about his time were not; alleging, that they neither rejected the Christian religion, nor forsook the religion of their ancestors. But the instances already cited merely prove, that he was a faithful and candid historian. The remaining works of Ammianus Marcellinus have passed through several editions; all of which have been superseded by that of Valæsius, printed in folio, at Paris, in 1681. This edition was reprinted by Gronovius at Leyden, in 1693, with valuable notes. Valæsi Præf. ad Amm. Marc. Fabric. Bib. Lat. cap. xii. tom. ii. p. 98, &c. Lardner's Works, vol. viii. p. 464, &c.

AMMINEA *uva*, in *Botany*, a name given by the old writers, to the grapes of a wild vine, common in the hedges of Italy, and some other places. They used to make wine of these grapes, which they mixed with other richer wines, and had in common use. Columella says, that this wine was first brought from the country of the Amineans in Thesaly, and that the wine produced from its grapes was the first and the most ancient known among the Romans. According to Macrobius, the Falernian wine was more anciently called Aminean. Some write the word *taminea*, instead of *aminea*.

AMMIRABEA or OMMIRABIH, corruptly Marbea, and Umarbea, in *Geography*, a river of Africa, which has its spring on mount Magrau, one of the heads of the Atlas near the confines of Fez, which runs through the plains of Adachson, where it has a beautiful bridge built by Abu'l Hasehen, the fourth monarch of the Benimerini, and thence winding southwards and watering the spacious plains between Dukala and Temesena, becomes wider in its approach to the ocean, into which it discharges itself, and forms a spacious bay, on the east side of Azamor. This river is fordable neither in Summer nor Winter, so that the inhabitants are forced to ferry their effects over it by the help of baskets, fastened to leathern pontoons, or over rafts. Its fish not only furnishes all that country; but is exported to Spain and Portugal.

AMMIRAGLIO, a small river of Sicily, anciently ORETHUS.

AMMIRALIS, in *Entomology*, a species of CERAMBYX found in Surinam. Thorax rather spinous; fourth joint of the antennæ bearded, second spinous. Gmelin. General colour black; base of the wing cases and sides of the thorax reddish.

AMMIRATO, SCIPIO, in *Biography*, an eminent historian of the 16th century, was born at Lecce in Naples, in 1531, and descended from a considerable family, which was expelled from Florence by the Gibelines. He was originally designed for the profession of the law, and with this view went to study at Naples in 1547; but his taste for polite literature diverted his attention from this kind of

study. His father was much offended, and withheld from him necessary supplies, whilst he visited Venice and Padua, so that he was obliged to return to Lecce, to take orders, and to accept a canonry which was conferred upon him by the bishop of this city. At Venice, whither he afterwards removed, his life was endangered by an intrigue; and at Rome he had a quarrel with the pope's filler, which obliged him to return to Lecce, where he founded the academy of the "Transformati." After many projects and wanderings in Italy, he at last settled at Florence, where in 1570, he was engaged by the Grand Duke Cosmo to write the Florentine history. Though he was of an inconstant and querulous temper, he continued in the possession of a canonry, and in the apartments provided for him by the duke for the remaining 30 years of his life. Here he died in 1601, and appointed the assistant of his studies, Christophoro del Bianco, for his heir, who, in conformity to his will, took the name of "Scipio Ammirato the younger." His "Florentine History," first published in 1600, contains the events of Florence from its foundation to 1574, and is much esteemed for its extent and accuracy. The second part was published by Ammirato the younger in 1641, who gave a new edition of the first part, with many additions.

Ammirato the elder wrote also genealogical accounts of the principal families of Florence and Naples, which were very favourably received; and he published "Discourses on Tacitus," with several essays, historical, moral, and political. He wrote arguments in verse, to all the cantos of "Orlando Furioso," and other pieces of poetry; but in this kind of composition he did not excel. Gen. Dict.

AMMITES, or HAMMITES, in *Minerology*, a species of lime-stone. See ROESTONE.

AMMOCÆTUS, in *Ichthyology*, an obsolete name given by Gesner and some others, to the AMMODYTES TOMIANUS of Linnæus.

AMMOCHOSIA, from *αμμος*, sand, and *χω*, I lay along, in the *Ancient Physic*, a kind of a remedy, or operation for drying the body, by lying along on warm sand, and having the body covered with it. Some prefer salt for this purpose to sand.

AMMOCHOSTOS, in *Ancient Geography*, a promontory of the island of Cyprus south of Salamis; whence, by corruption, is derived the modern name Famagouta.

AMMOCHRYSOS, the same as golden MICA, which see.

AMMOCHYSUS, in *Natural History*, a kind of gem, supposed to be the same with the *aventurine*.

AMMODES, in *Ancient Geography*, a promontory of Cilicia, between Pyramus and Cydnus.

AMMODYTES, in *Zoology*, a species of COLUBER, very nearly allied to the viper. It inhabits many places in the eastern regions, and the mountainous parts of Illyria; and hence it has been called *vipera illyrica*. The Linnæan specific character is taken, as in general throughout the genus, from the abdominal plates and subcaudal scales which are 142—32. Its general description is sometimes brown, sometimes pale bluish, with a black dentated dorsal band; the dentations being turned backwards. Nose terminated by an erect wart.

This species is said to be extremely poisonous, and, according to Matthioli, proves fatal in the space of three hours.

AMMODYTES, in *Ichthyology*, the name of a genus in the Linnæan system, of which only one species has been hitherto discovered. The generic character is, head compressed, narrower than the body; upper lip doubled, lower jaw narrow and pointed: teeth sharp pointed. Gill membrane

brane of seven rays. Body long, square. Tail-fin dilated. This species is *Tobianus*. Linnæus. This species inhabits the sandy shores of the Northern seas, and is known by the name of *tobian*, *tobis*, *faudaal*, *fandibz*, and *fand launce*. It is usually from nine to twelve inches in length, its general colour silvery white, greenish on the back.

The name is formed from *αμμος*, *sand*, and *δυνας*, *a diver*, expressing the quality of this creature, to dive into, or bury itself under the sand.

AMMON, or HAMMON, in *Antiquity*, an epithet given to Jupiter in Lybia, where was a celebrated temple of that deity under the denomination of Jupiter Ammon, which was visited by Alexander the Great.

There has been a great dispute about the origin of this name—Some derive it from *αμμος*, *sand*, because the temple was situated in the burning sands of Lybia; others borrow it from the Egyptian *anam*, *a ram*; as having been first discovered by that animal.—Others will have Ammon to signify the sun, and the horns wherewith he is represented the sun-beams. To this purpose Macrobius observes, (Saturn. i. c. 18.) that the inhabitants of Egypt worshipped the sun as the only divinity and soul of the universe; and they represented him under different forms, according to the various appearances of this luminary; in his infancy at the winter solstice, in his youth at the vernal equinox, or in spring, in his maturity at the summer solstice, and in his old age at the autumnal equinox.

The word Amoun, composed of Am ouein, shining, according to Jablonki (tom. i.) denoted the desired effects produced by the sun on attaining the equator, such as the increase of the days, a more splendid light; and, above all, the fortunate preface of the inundation and abundance.

Ammon is said to have been originally derived from Ham, the son of Noah, who first peopled Egypt and Lybia, after the flood; and when idolatry began to gain ground soon after this period, he was the chief deity of these two countries, in which his descendants continued. A temple, it is said, was built to his honour, in the midst of the sandy deserts of Lybia, upon a spot of good ground, about two leagues broad, which formed a kind of island or oasis in a sea of sand. He was esteemed the Zeus of Greece, and the Jupiter of Latium, as well as the Ammon of the Egyptians. In process of time these two names were joined, and he was called Jupiter Ammon. For this reason the city of Ammon, No-ammon, or the city of Ham, was called by the Greeks Diospolis, or the city of Jupiter. Plutarch says, that of all the Egyptian names which seemed to have any correspondence with the Zeus of Greece, Amon or Ammon was the most peculiar and appropriate. From Egypt his name and worship were brought into Greece; as indeed were almost all the names of all the deities that were there worshipped. Bryant's Mythol. vol. i. p. 5.

However this be, Jupiter Ammon, or the Egyptian Jupiter, was usually represented under the figure of a ram; though in some medals he appears of a human shape, having only two rams horns growing out beneath his ears.

The Egyptians, says Proclus, in Timæus of Plato, had a singular veneration for the ram, because the image of Ammon bore his head, and because this first sign of the zodiac was the preface of the fruits of the earth. Eusebius (Præp. Evang. lib. iii.) adds, that this symbol marked the conjunction of the sun and moon in the sign of the ram. Jupiter Ammon, the object of worship in every part of Egypt, was honoured in a peculiar manner at Thebes; and the Greeks, from this circumstance, denominated it Diospolis. Herodotus, Diodorus Siculus, and Pliny have

given particular descriptions of the magnificent temple of Ammon at Thebes; and although it was despoiled and ruined by Cambyses, there still remain vestiges of its ancient grandeur. In this temple there was a statue of Jupiter Ammon. The Ethiopians came down the Nile once a year to worship this deity at Thebes, and they had a small portable temple of this deity, which they carried with them to their habitations and to those of the Lybians, for the purpose of celebrating prosperous events by feasts and dances. This association for religious exercises of the Egyptians, Ethiopians, and Lybians, continued under the reign of Theodosius the younger. The Greek mythologists represent Bacchus, after his conquest of Asia, passing with his army through Africa, and reduced to distress for want of water; when his father Jupiter, assuming the shape of a ram, led him to a fountain where he and his exhausted troops were refreshed with water; and in gratitude for this seasonable relief they say, that he built a temple to Jupiter, under the name of Ammon, from *αμμος*, *sand*, alluding to the sandy desert where it was built.

AMMON, or BEN-AMMI, in *Scripture Biography*, the son of Lot, was the father of the AMMONITES, and lived about 1900 years before Christ.

AMMON, in *Entomology*, a species of FORMICA, with a double-spined thorax, petioled squama, and the two spines incurved. It is found in New Holland. Fabricius.

AMMON, a species of SCARABÆUS, found in America. Thorax, with three teeth; a recurved horn on the head; wing-cases striated. Linnæus.

AMMON, in *Ancient Geography*, a city of Marmarica, in Africa, which belonged to the Ammonii, according to Ptolemy; but Arrian says, that it was only a spot of ground in which the temple of Ammon was erected. It seems probable from Herodotus, (lib. iii. c. 25, 26.) that the Ammonii were a populous nation, and had a king of their own, though part of their territory could only be considered as a barren, sandy desert. From this ancient historian we learn, that Cambyses, having advanced to Thebes, in his way to Ethiopia, detached from thence a body of 50,000 men to lay waste the country of the Ammonii, and burn the temple of Jupiter Ammon; but that, after several days march over the deserts, a strong and impetuous wind blowing from the south, raised such a torrent of sand, as to overwhelm and destroy the whole army. Alexander the Great, about 200 years after this time, was more successful in his journey to that temple. Pliny places the temple of Ammon at the distance of about 12 days journey from Memphis, and mentions the Ammoniac nome of Egypt. Diodorus Siculus and Quintus Curtius (lib. iv. c. 7.) relate, that though this temple was surrounded by a sandy desert, yet its proper district abounded with trees bearing great plenty of fruit, and was ornamented with fountains. It had also several streets or villages in the neighbourhood of the temple, a castle fortified with a triple wall, and near it a holy fountain, called the Fountain of the Sun, because the qualities of the waters varied wonderfully every 24 hours; being warm in the morning, cool at noon, warm in the evening, and scalding hot at midnight. Strabo (lib. xvii.) informs us, that, under the reign of Augustus, the verses of the Sybils, and the Tuscan divinations, had depreciated the reputation of the oracle of Ammon; and in the 13th century it was forgotten; though the Arabs assert, that the district, in which it was situated, was still inhabited. The Fountain of the Sun, described by Quintus Curtius, was nothing more, according to their account, than a hot spring, which seemed to be warmer in the night than in the day.

AMMON, in *Zoology*, a species of OVIS, or sheep, in Gmelin's

Gmelin's Linnean system; the characters of which are, that the horns are large, unidirectionally arch'd backward, and divergent, wrinkled on their upper surface, and smooth on the under side; and the neck has two pendant hairy wattles. This is the capra ammon of the Syll. Nat. hircus, or capra orientalis of Brisson, muson et ophion of Pliny, muson, or muson of Gesner, muson et tragelaphus Bellonii of Ray, tragelaphus, or muson of Klein, rupicapra cornibus arietinis of J. G. Gmelin nov. com. petrop. ovis ferri Sibirica, vulgo argali dicta of Pallas, mouflon of Buffon, stepule baranni of J. G. Gmelin, It. Sibir. lamoni barani oder musmons of Steller, das wilde schaf, et der weisser der alten of Gesner, thierb. orientalisches schaf of S. G. Gmelin, wild sheep of Pennant, and Siberian chamois of Brisson. It inhabits, in small flocks, the rocky and desert tracts of the Alpine region in the centre of Asia, in Kamtschatka, the Kurde islands, probably on the west side of North America and California, and more certainly on the highest mountains of Parbary, Sardinia, Corsica, Greece, and the deserts of Tartary. It is very wild, swift, and active, and fights violently with its horns, acquires its full growth in two years, and seldom lives more than 14; the female produces one or two lambs in the month of March. The general colour in Summer is a brownish ash, mixed with grey on the upper parts of the body, and a whitish ash on the lower parts; in Winter the former changes to a rusty grey, and the latter to a whitish grey; the tail is very short, of a whitish colour, and brownish at the tip; the hair in Winter is about an inch and a half long, which falls off in Spring, and in Summer the coat is very short; the ears are erect and sharp pointed; the eyes are large, and generally of a brown or blue colour; the horns, which arrive at their full size in three years, are whitish, angular, wrinkled transversely, large, close at their bases, and placed on the top of the head, rising at first nearly upright, reflected backwards, divergent, and turned downwards and outwards at their ends: those of the female are smaller and more hooked, but are sometimes entirely wanting; the horns of the old rams are said to grow to such an enormous size, that each of them weighs between 30 and 40 Russian pounds, and measures, with its curvatures, two Russian ells in length; the hind-legs are rather longer than the fore-legs, by which the animal is better adapted for running up hill than on level ground; the flesh and fat are esteemed great delicacies in Siberia; the Kamtschatkans clothe themselves with the skins of these animals. Mr. Pennant distinguishes between the Corsican argali, or ovis ammon Europea, and that of Siberia; though the difference seems to consist chiefly in colour; the former being of a brown colour tinged with tawny on the upper parts, with a white mark on each side pointing to the belly. A specimen, brought from Corsica to England by Paoli, differed from the above in colour, having a large white spot on the front of the neck, and being black on the shoulders. In Corsica this animal is denominated Musro. It is probable that the argali once inhabited Britain, as Boethius mentions sheep in St. Kilda larger than a he goat, with horns as big as those of an ox. In confirmation of this account, the figure of a muson has been discovered in a piece of Roman sculpture, taken from Antoninus's wall, near Glasgow. Buffon says, that the mouflon seems to be the primitive stock of all the different varieties of sheep.

The Kamtschatkans have not attempted to domesticate the argali; but they spend the Summer in hunting them on the wild and precipitous mountains on which they feed. Sometimes they set bent cross-bows in the paths through which they expect the argali to pass, in such a position, that

when the animal treads on a string leading to the bow, the arrow is discharged and lodged in its bowels. Sometimes they employ dogs in the chase. The dog never overtakes the wild sheep; but while the sheep's attention is engaged by the dog, the hunter, without being observed, approaches near enough to load it with a ball or an arrow. The Mongol and Tungus attack them in a different manner. They take out a great number of houses and dogs, and endeavour to encompass the flocks by surprise; but this is not easily done, as they are so swift, and so cunning, that when they distinguish, either by sight or by smell, the approach of an enemy, they infallibly make their escape.

AMMONIA, in *Agriculture*, a term applied to volatile alkali, a substance which has lately been found useful in vegetation. It is formed from the decomposition of all animal and some vegetable matters during the process of putrefaction. It has been suggested by Dr. Darwin, in his treatise on agriculture and gardening, that in the decomposition of water, which partially takes place after being absorbed by the roots of vegetables, the hydrogen, by its union with azote, produces ammoniac, which may contribute to the nutriment of plants by its mixture with oils, and thus producing soaps which become dissoluble in water, and also by decomposing insoluble saline earths, as gypsum or metallic salts, as vitriol of iron, and by this means producing more soluble or innocuous saline matters in the soils.

AMMONIA, in *Antiquity*, seals celebrated at Athens, mentioned by Hefychius.

AMMONIA, or VOLATILE ALKALI. Alkali volatile, *Ammoniaque*, Fr.—*Alkali fluchtiges*; *Harnsalz*, *urinsalz*, *fluchtiges*, Germ.

Under the article ALKALI we noticed some of the peculiar properties of the volatile alkali whereby it is distinguished from the fixed. We shall, in this place, give a more particular account of ammonia, which requires considerable notice from its high importance as a chemical agent, and from the numerous researches which have been made into all its properties and combinations, with more success than perhaps has fallen to the share of any other substance of equal value to the chemist.

As ammonia is never found native in an uncombined state, and is, in most cases, a *product* of various natural or artificial processes, we shall refer the reader to the articles ANIMAL MATTER, CARBONAT of ammonia, MURIAT of ammonia, and salt of HARTSHORN, for every thing that relates to the natural history of this alkali and its production in the large way as a manufacture, and shall here confine ourselves to the purely chemical description.

The volatile alkali (like so many other chemical agents) when perfectly pure and uncombined, is only known to us in the form of a gas; and, as it is the only one of the alkalies which is capable of assuming this form in any common degree of heat, the term *alkaline air*, used by Dr. Priestley and many other chemists, is synonymous with ammoniacal gas. This gas has the following properties: It possesses a most pungent smell, which, when strongly snuffed up the nostrils, provokes to coughing, and gives a temporary sense of suffocation, owing to the contraction of the fauces which it produces. To the taste it is highly stimulating and acrid, and quickly corrodes the skin of the tongue and lips, so that it cannot be taken into the mouth in the undiluted form with safety. It is speedily fatal to animals that are immersed in it, and it extinguishes a taper; but the flame of this last is first enlarged, and becomes of a pale yellow colour. Ammoniacal gas is, next to hydrogen, the lightest of all the gaseous bodies. Its specific gravity,

gravity may be reckoned about 0.735 (distilled water being 1000.) whereas atmospheric air is 1.23, or nearly twice as heavy as alkaline air. The absolute weight of 100 cubic inches of this gas at 30° bar. and 61° therm. is reckoned by Kirwan to be 18.16 grains. It is highly dilatable by heat, and at a very high temperature is decomposed. It is also very rapidly and copiously absorbed by most liquids, especially by water, and hence it cannot be kept over water; but, for the purposes of experiment, it must be confined in well closed bottles or over mercury.

Ammoniacal gas is given out during the distillation of almost every animal, and some vegetable matters, but it cannot in this method be procured sufficiently pure for chemical experiments. For this purpose the muriate of ammonia (or common crude sal-ammoniac is the most convenient material for yielding the gas. This salt is readily decomposed by quicklime, which last unites with the muriatic acid of the salt, and expels the ammonia in its purest and most caustic form of gas. The decomposition is so speedy, that a very pungent smell of volatile alkali is perceived merely on rubbing together these two substances. If one part of dry sal-ammoniac is mixed with two parts of well burnt lime (or less if the lime is good), put into a dry phial or earthen tube, and heated gently, the ammoniacal gas rises in great abundance, and may be directed by means of a bent tube under a jar full of dry mercury, where it may be preserved in the gaseous form for any length of time. Many of the metallic oxyds, especially minium or litharge, will supply the place of the lime and expel the gas from the muriate of ammonia in very great purity. A still more simple method of obtaining the gas is to apply a gentle heat to the liquid or watery solution of ammonia, which expels from it the alkaline air that the water had previously been made to absorb at a lower temperature. It may be remarked that the discovery of ammonia in a gaseous form, as well as many of the most interesting properties of this alkali, is due to Dr. Priestley.

Ammonia, dissolved in water (forming the *liquid ammonia* of modern chemists, the *fluor volatile alkali* of former times, or the *aqua ammoniæ puræ* of the London Pharmacopœia) is the form in which the caustic ammonia is the most familiar to us, and in which many of the properties of the alkali can be most conveniently examined. This when pure should be perfectly transparent and colourless as water, should have the strong burning taste and pungent smell of ammonia, and should give no effervescence with acids. This latter test deserves attention on account of the variety of volatile alkaline liquors that are prepared, all of which, except the *aqua ammoniæ puræ*, contain more or less carbonic acid, and are much milder in all their sensible properties.

Ammoniacal gas is absorbed by water with great rapidity, and at the same time a considerable quantity of heat is given out from the gas, which is sufficient to raise the temperature of the water, and to be sensible to the hand. The same gas, when put in contact with ice, melts it with apparently as much rapidity as if the ice were put into a fire, and is greedily absorbed, at the same time that considerable cold is produced. At a moderate temperature water may be made to dissolve nearly one third of its weight, or many hundred times its bulk, of this gas. The bulk of the water is so much increased by this process that it becomes specifically lighter than distilled water. Mr. Davy, in his experiments on this subject, (Researches into nitrous Oxid, 1800.) found that at the temperature of 52°, 100 grains of liquid ammonia, holding in solution 9.502 grains of the alkali, gave a specific gravity of .9684. When

perfectly saturated, 100 grains of the liquid alkali contained 25.37 grains of ammonia, which is still one-third of the weight of the water employed, and had the specific gravity of .9054. Other writers, however, make the specific gravity of saturated liquid ammonia as little as .897. The gentle heat of a spirit lamp again expels the alkali in the form of gas, but the last portions require a strong ebullition before they can be made to quit the water. When liquid ammonia is exposed to a very intense cold, sufficient to freeze mercury, as Messrs. Foureroy and Vauquelin have observed, it becomes a grey semi-transparent mass, of the consistence of a very stiff jelly, and with scarcely any odour.

The liquid ammonia is prepared in two methods. That which is the oldest and the most usually practised, is to mix together quick-lime, muriate of ammonia, and water, and to distil the mixture with a gentle heat. The London Pharmacopœia orders for the preparation of the pure liquid ammonia, two pounds of lime slacked in two pints of water, and one pound of sal-ammoniac, which are to be mixed with six pints of hot water, and to be kept in a covered vessel till cold. The liquor is then to be distilled, and the first pint which comes over is the pure liquid ammonia. This liquor, however, is by no means saturated with the alkali, for during the heat, even of a gentle distillation, the solvent power of the water is much lessened. The most elegant and effectual way of preparing this liquor is to disengage the gas from the *dry* materials; and by using the beautiful APPARATUS of Woulfe, to cause the alkaline air to pass into cold water where the absorption is much more speedy; and if necessary, the increase of temperature produced by this absorption may be prevented by surrounding the bottles with ice. The proportions of the ingredients here used, may be two parts of lime slacked in as little water as possible, mixed with one part of dry muriate of ammonia and put into a retort for the production of the gas; and in the condensing bottles, about as much water as the weight of the sal-ammoniac employed. The liquid ammonia is known to be thoroughly saturated with the alkaline gas, when the bubbles pass through the water undiminished, and no further absorption takes place.

Many of the combinations of ammonia with different chemical agents are highly curious and important; but as most of them produce alterations which depend on the decomposition of this alkali, they will be better understood by the reader, if we first relate some of the multitude of facts by which the analysis of ammonia has been ascertained. The constituent parts of the volatile alkali are, hydrogen (or the basis of inflammable air), and azot (the basis of phlogificated air), the proportions of these two substances are, about 29, (in weight) of the former, and 121 of the latter; and it may be remarked that this is the only simple combination of these two substances with which we are certainly acquainted. The proofs of this analysis we shall relate nearly in the order of discovery by the various eminent chemists who have thrown light on the subject.

Dr. Priestley was the first who remarked a very interesting change produced on alkaline air by means of electricity. For this purpose he confined a known portion of this gas in a jar over mercury, and passed a number of successive electric explosions and sparks. He found after every shock that the bulk of the confined air increased, and continued to do so till it had expanded to nearly three times its original bulk. The air was now much altered in its properties, for on letting up some water into the jar, scarcely any of the gas was absorbed, whereas before electrization every particle

ticle of it would have rapidly united with this fluid. The gas was found to be highly inflammable, and exploded when mixed with common air, in the same manner as the inflammable air procured from iron by an acid. The gas likewise after being a short time in contact with water had entirely lost its alkaline smell. The colour of the electric spark taken in the alkaline air was red, but white in the centre, when any considerable explosion had been taken.

The same eminent chemist likewise found alkaline air to be decomposed by passing through a red hot tube, though not so completely as by the electric spark. In performing this experiment he found the tube, through which the alkaline vapour had passed, lined with a black matter, and the liquor collected after this distillation also obscured with the same substance. This is probably owing to some fissure in the tube which admitted carbonaceous matter from the hot coals, as we shall mention hereafter. Another property of alkaline air, highly illustrative of its composition, is the reduction of several metallic oxyds which it effects when they are heated in contact with it. Dr. Priestley confined some litharge, or oxyd of lead, in this gas, and by heating it with a burning lens (a method of applying heat of all others the most accurate), he revived the lead in its metallic form, and a quantity of phlogisticated air remained. The red mercurial oxyd, or *red precipitate*, was heated in the same manner, and the mercury was revived, and at the same time a considerable quantity of *water* was produced so as to run down in drops on the sides of the jar, which before appeared perfectly dry. The red precipitate, however, gave out during this reduction a large quantity of uncombined dephlogisticated air, which appeared in the residual air after the reduction was completed. This, in another experiment with the same materials, united with some of the inflammable air contained in the alkaline gas and caused a considerable explosion. The antiphlogistic theory will readily explain the production of *water* during the experiment from the union of the oxygen of the red precipitate, and the hydrogen of the ammoniacal gas; but this fact more properly belongs to the subjects of WATER and PHLOGISTON.

These experiments were soon repeated by various chemists, and with similar results. Landriani found, that in passing ammoniacal gas through a tube heated white hot, the alkaline properties were entirely lost, inflammable air was produced, and likewise a small portion of carbonic acid sufficient to give a precipitate with lime water.

Van Marum, in his experiments on the effect of electricity on the gases, found the same results with ammoniacal gas that we have just mentioned. Two cubic inches and seven eighths of the alkaline gas were enlarged to four inches, and the air was no longer absorbed by water, and was highly inflammable.

Whilst the properties and composition of the volatile alkali were made the subject of so much ingenious and successful research by Dr. Priestley, they received full elucidation by the labours of one of the most eminent of the French chemists, M. Berthollet.

This excellent experimentalist found, that when the oxygenated marine acid is added to liquid ammonia perfectly caustic, a considerable effervescence takes place, and a quantity of gas is collected from the two liquids, which, when examined by the usual chemical tests, proves to be pure azotic gas. At the same time the oxygenated acid loses its peculiar pungent smell, and becomes converted into simple marine acid. The explanation given of these phenomena is, that the ammonia is decomposed by the oxygenated acid; the hydrogen of the alkali unites with the excess of oxygen contained in the acid, and forms water, which unites with the acid; whilst the azot, the other constituent part of the ammonia, appears uncombined in the form of gas. The gas was found by Berthollet to be azotic, both by the common methods of examination, and by its forming nitrous acid when united with oxygen by means of the electric spark, in the method that Mr. Cavendish had discovered. The same decomposition takes place if the oxy-muriatic acid and the ammonia are used in form of gas. See OXY-MURIATIC ACID.

This theory of the decomposition of ammonia was also beautifully illustrated by the same ingenious chemist, in his accurate and original experiments on the nature and preparation of fulminating gold. These will be given more at length under the article GOLD; but it may be here mentioned that the fulminating compound is formed by precipitating a solution of gold in aqua regia by the volatile alkali. This precipitate consists of the metal, of oxygen which it acquires during solution in the acid, and of a part of the ammonia employed to separate it from its menstruum, which is retained by the metallic oxyd, and which gives it the property of exploding in a very gentle heat. M. Berthollet ventured to explode small and known quantities of this preparation in copper tubes, and found the products to be water and azotic gas, and the oxyd of gold completely reduced. The ammonia therefore is here decomposed, its hydrogen produces water with the oxygen of the gold, and its azot is set at liberty in the form of gas. Some other of the metals which have a weak affinity for oxygen are reduced to a reguline state by means of the volatile alkali, which is also decomposed in the process. M. Berthollet also repeated Dr. Priestley's experiment of the analysis of ammoniacal gas by electricity, taking every possible precaution in order to ensure an accurate result; and the calculations deduced from it have been very generally acquiesced in, and confirmed by subsequent enquirers. For this purpose he passed a succession of electric sparks through 1.7 cubic inches of ammoniacal gas till it acquired its utmost degree of expansion, when it occupied 3.3 cubic inches, a degree intermediate between the results of Dr. Priestley and M. Van Marum. A certain quantity of this enlarged gas was then detonated with a superabundance of oxygen gas in Volta's eudiometer, whereby water was produced and the azotic gas of the ammonia remained unaltered. Then (assuming the quantity of oxygen entering into the composition of water to be to the hydrogen, as 74 to 145, according to the calculations of M. Monge, given in the Memoirs of the French Academy) M. Berthollet estimates the proportions of the constituent parts of ammonia to be 2.9, in *bulk*, of hydrogen, to 1.1 of azot, or, in *weight*, (assuming the hydrogen to be eleven times lighter than the azot) 150 grains of ammoniacal gas will contain 121 grains of azot, and 29 grains of hydrogen.—Journal de Physique for 1786.

The above are the principal facts which have been brought to prove the *decomposition* of ammonia. A number of others, equally important and curious, will throw light on the mode of its *formation* from the union of its constituent parts.

An accidental production of ammonia in circumstances where it had not been expected had frequently been remarked by various chemists. Dr. Priestley, in his numerous experiments on nitrous air, found by accident that when iron filings had been long kept in a jar, and moistened with a diluted solution of copper in the nitrous acid, a thick saline

saline red incrustation was formed, mixed with a green matter, which, when broken, had a strong smell of volatile alkali. Repeating the experiment he found that the same effect would be produced, though more slowly, by simply allowing iron to rust in nitrous air, when, after some weeks, the smell of volatile alkali plainly appeared. The nitrous gas likewise underwent a considerable change, being diminished about one third, and then supporting combustion in a high degree, which last property was, however, lost by washing in water, and a large residuum of phlogisticated air was left.

A production of ammonia, in somewhat similar circumstances, is likewise particularly noticed by Mr. Hauffman of Colmar. (*Journal de Physique* for 1787.) He relates, that on mixing nitrous gas with phlogisticated precipitate of iron, a large quantity of the gas is absorbed, leaving only a small residuum of phlogisticated air; and on adding caustic fixed alkali to the iron precipitate, a smell of volatile alkali is very perceptible, and a straw moistened with nitrous acid and held over the mixture also indicates the presence of ammonia by forming dense white fumes. Mr. Hauffman distinguishes accurately between the phlogisticated and the dephlogisticated solutions of iron, the former being formed by dissolving the metal in acetic acid, or in the vitriolic without previous preparation; and the latter being a solution in vitriolic acid of iron which has been previously precipitated from a nitrous solution, and is therefore fully dephlogisticated, or, as is now said, in the highest state of oxygenation. The same chemist employed the solutions of iron in various states, and found, that wherever nitrous gas was absorbed by the iron, a certain quantity of ammonia is also produced, which, he also observes, probably remains in union with the vitriolic acid till it is displaced by caustic fixed alkali. The properties of this compound of nitrous gas and oxyd of iron will be examined more particularly under the article EUDIOMETRY, as it is intimately connected with this subject.

Still further light was thrown on the curious phenomenon of the production of ammonia, by some interesting experiments of Dr. Austin. (*Philosoph. Transact.* for 1788, vol. lxxviii.) The composition of ammonia having been fully ascertained by the experiments of Priestley, Berthollet, and others, Dr. Austin attempted to produce the alkali by a direct union of its constituent parts. For this purpose he mixed inflammable and phlogisticated airs in different proportions, and added to them some of the acid airs in order to favour their combination, tried the effects of cold, of heat, of electricity; and lastly, he decomposed alkaline air, and endeavoured to reunite the identical parts, but in no instance could he succeed in forming ammonia from the constituent parts of this alkali, *when both were employed in a gaseous form.*

Hydrogen and azot, however, are certainly the constituent parts of ammonia, and their refusal to unite when in the form of gas led Dr. Austin to vary his experiments by mixing these substances together in such a manner that the hydrogen should be involved in an atmosphere of azotic gas just at the time when it was itself beginning to assume the gaseous form. This has with great propriety been termed the *nascent state* of a gas, and this experiment was suggested to Dr. Austin by another very striking production of ammonia from nitrous acid and tin, which we shall presently mention. He therefore inclosed in a glass tube some azotic or phlogisticated air, and along with it some iron filings moistened with water, which last were known to yield inflammable air after standing together for some hours; and this air therefore in its nascent state, or at the

instant of its formation, was in full contact with the azotic gas. To detect the minutest quantity of ammonia he also inclosed in the tube some paper stained with the blue of the rind of the radish, which is turned to green by alkalies. In twenty-four hours he found the colour entirely green. Another test was also used to indicate the presence of ammonia, which was paper stained with a solution of nitrated copper; the green of which was, in a few days, converted to blue, the proper colour of a solution of copper in ammonia. Dr. Austin found nitrous air to effect a much more speedy production of ammonia when used instead of the azotic gas. Atmospheric air will also succeed, but requires a longer time than the azotic air, so that ammonia should always be formed whenever iron in contact with water-rusts in the open air. In this formation of ammonia by the direct combination of its principles, it is necessary, as Dr. Austin observes, that the hydrogen should be only in the nascent state when it comes in contact with the azot, for if it is already in the form of gas it cannot be made to unite with the azot in any form so as to produce ammonia.

We may here remark, that this mode of effecting chemical union between bodies which, when uncombined, are only known in the gaseous form, (such as oxygen, hydrogen, and azot) by presenting one to the other when in the nascent state, should always be kept in mind in experiments of research, as it may be the means of very important discoveries in this difficult part of experimental chemistry. Mr. Kirwan, in his valuable experiments on hepatic air, observed the formation of volatile alkali when this air was mixed with nitrous gas. At the same time sulphur is deposited.

Another very striking experiment on the formation of ammonia, which is easily made and seldom fails of success, is the following. Take some powder, or filings of tin or zinc, pour on them some moderately dilute nitrous acid, which will act on them with great vehemence, and the disengagement of copious red fumes. After a short time stir into the mixture some quicklime or caustic alkali, and a very strong pungent smell of ammonia will be produced. In this case the ammonia is formed by the decomposition of the nitrous acid and the water, this ammonia instantly unites with a portion of the acid, forming nitrated ammonia, and the lime again decomposes this ammoniacal salt by simple affinity, and by displacing the alkali from its union with the acid, causes it to assume the gaseous form and to become evident to the senses.

Before we quit the subject of the composition of ammonia, we shall make a few observations on the decomposition of nitrous gas and nitric acid in the experiments above related, whereby the volatile alkali is produced. In the simpler methods of forming ammonia, such as in Dr. Austin's experiments, the union of the nascent hydrogen with azotic gas, the affinities which operate in forming the alkali, may be supposed to be tolerably simple. But when the nitric acid, or nitrous gas are used, the affinities appear to be extremely complex, and perhaps hardly made out with much certainty. It should be noted, however, that, along with the production of ammonia, there appears constantly a proportionate quantity of that singular gas discovered by Dr. Priestley, and called by him dephlogisticated nitrous air; and of late denominated *nitrous oxyd* by Mr. Davy, to whose highly ingenious "*Researches*" we are indebted for much important addition to this curious and difficult part of chemistry. It is a striking property of the nitrous oxyd to support combustion in a very eminent manner, and very similar to oxygen gas, although it contains a less proportion of oxygen, and more azot than *nitrous gas*,
which

which is unfit for combustion. This resemblance to oxygen gas in the nitrous oxyd has misled some chemists in the nature of the air left after the formation of ammonia from nitrous gas and nascent hydrogen, who have supposed a production of oxygen, and have been obliged to account for it accordingly. To explain the changes that take place with moistened iron filings, confined in an atmosphere of nitrous gas, we must observe, that the new compounds, which we know are formed out of these materials, are ammonia, consisting of azot and hydrogen, and nitrous oxyd, composed of much azot and little oxygen. The iron likewise is rusted or oxygenated. The source of the hydrogen in the new products may be supposed to be some of the water decomposed, from which the metal, in rusting, has abstracted its other constituent part, the oxygen. The only source of the azot (allowed by the antiphlogistic theory) is the nitrous gas, which is composed merely of this principle, and of oxygen. But if merely a portion of the azot of the nitrous gas was abstracted from it, the remainder, by losing azot, would be a substance containing (proportionally) *more* oxygen than nitrous gas; whereas, the nitrous oxyd, which is this remainder, contains less. There must, therefore, be an additional method of getting rid of this excess of oxygen, in order to produce a satisfactory explanation; and the only substance that offers is the hydrogen of the water decomposed by the metal, which may be supposed to unite with enough of the oxygen of the nitrous gas to reduce it to the state of nitrous oxyd. Thus then, according to this hypothesis, the metal decomposes the water, the hydrogen set at liberty by this decomposition unites with a small part of the azot of the nitrous gas to form ammonia, and with a greater part of its oxygen, to form water, and the residue of the nitrous gas is in that proportion and mixture which constitutes nitrous oxyd.

We shall not pursue this subject farther at present, as it will apply to all the cases of the production of ammonia by nitrous acid, and it may, perhaps, be thought too hypothetical to be further insisted on, though there are many similar examples to be met with, of very extensive and complicated affinities being set in motion by a single disturbance of the quiescent attractions of the constituent parts of any of the substances contained in the mixture.

Having now enumerated some of the leading facts by which the composition of the volatile alkali has been established, we shall proceed to mention some of the mixtures of ammonia with various chemical agents. It may be observed that though the uncombined volatile alkali is in the form of gas when pure, all its combinations are either solid or liquid, and hence every substance added to the ammoniacal gas causes an absorption of it where any chemical action takes place. However, the tendency to the aeriform state is so far retained by ammonia in all its combinations as to render them volatile, and to weaken its adhesion for them, whenever the temperature is raised to a certain degree. The force of affinity which ammonia exercises is therefore remarkably weakened by heat, where the substance to which it is united is naturally fixed in the fire, and many of the ammoniacal compounds at a high temperature are totally decomposed, and entirely new products result from the operation.

No union takes place by any simple mixture of ammonia with oxygen, hydrogen, or azotic gases. Under particular circumstances, and by the agency of complicated affinities, these substances may however be mutually decomposed, and new compounds produced. Thus, ammoniacal gas passed over heated oxyd of manganese forms NITROUS ACID, as discovered by the ingenious experiments of Dr. Milner.

Ammonia unites with all the acids with very great ease

and rapidity, forming with them very easily soluble salts. These will be particularly mentioned under the respective acids, but some of their properties may here be mentioned. The union of alkaline air with the acid gases, as discovered by Dr. Prickley, forms some of the most striking and beautiful experiments which chemistry furnishes. If ammoniacal gas is passed up into a jar containing carbonic acid there is a thick white fume immediately produced, the two gases by uniting lose their gaseous form, so that there is a complete vacuum suddenly made in the jar, causing the mercury over which it is confined to rise and fill it entirely, a sensible quantity of heat is given out, and a number of minute crystals of carbonated ammonia lining the inside of the jar, is the product of the mixture.

With the muriatic acid gas the appearances are exactly similar, only the white fume is still more dense and copious, the heat greater, and the union more rapid. Crystalline feathers of MURIATED ammonia are the result, and this furnishes one of the most striking instances of alteration in form, and in sensible properties, which two bodies may undergo by chemical affinity; for each of the ingredients when separate are in the state of an invisible gas with a highly pungent smell, and, when united, a scentless solid salt is the product. In making this beautiful experiment both the gases should be confined over mercury; and, on account of the much superior specific gravity of the acid gas over the alkaline, if the former is thrown into a jar of the latter, the white cloud will form slowly, beginning from the point of contact of the gases; but if the alkali be added to the acid gas, it rises through it immediately, and the combination takes place with great rapidity.

The nitrous acid unites with ammonia with great ease, and with the production of white fumes when the two substances are gaseous. The resulting salt NITRAT of ammonia possesses very interesting properties, which will be mentioned under that article.

It may be of use to know that the presence of ammoniacal gas, where it cannot conveniently be detected by the smell, will be readily shewn by holding a piece of glass rod or any other substance wetted with nitrous or muriatic acid, over the part where ammonia is suspected, when thick white fumes will be seen to form around the acid.

Phosphorus will not unite with ammonia at a low temperature. In a red heat the alkali is decomposed, and phosphorated hydrogen, and azotic gas are produced.

With sulphur, ammonia unites with some difficulty, forming the SULPHURET of ammonia, or *Boyle's fuming liquor*.

Charcoal and the volatile alkali do not unite in a moderate heat, but at high temperatures the alkali is decomposed, and, by particular management, that singular substance, the PRUSSIC acid, may be formed.

The affinity of ammonia for the different acids is much weaker than that of the other alkalies, and several of the earths. In several solutions of earths or metals in acids, where the affinity of ammonia for the acid is only in a small degree greater than of the earth or metal, only a part of the substance dissolved is precipitated by the addition of this alkali, and the solution retains the remainder, united with the ammonia, forming together an ammoniacal triple salt. Thus if to a solution of magnesia ammonia is added, part only of the earth is precipitated, and the remaining solution is an ammoniaco magnesian salt. Also the affinities of ammonia are much weakened by heat, owing to the great tendency to volatilization which the alkali possesses.

Ammonia has a very striking property of reducing to the metallic state (either entirely or partially) the oxyds of the several metals. This is performed, as we have already men-

tioned in the instance of fulminating gold, by a decomposition of the alkali, its hydrogen uniting with the oxygen of the metallic oxyd to form water, and its azot appearing uncombined in the form of gas. Thus, as M. Fomcroy has observed, (*An. Chym. tom. 2 & 6.*) if the black oxyd of manganese is moistened with liquid ammonia, and gentle heat be applied, the oxyd passes to the state of the white oxyd, (which is nearer the metallic state) and an effervescence with disengagement of azotic gas takes place. The red oxyd of mercury, treated in a similar manner, gives the same results, and the metal is left in the state of a black powder, which simple exposure to light and air will convert to globules of running mercury. This affords a ready way of cleaning the surface of mercury that has been tarnished and oxydated by acid vapours.

Some of the most difficultly reducible metals, such as manganese or tungsten, are on this account best prepared for reduction by being previously united with ammonia.

The volatile alkali may be made to unite with oils, so as to form ammoniacal Soaps; but this combination is less perfect than the fixed alkaline soaps, on account of the impossibility of applying heat to promote union without driving off much of the alkali in the form of gas. The volatile oils are equally soluble in ammonia with the fixed, an example of which is that union of oil of amber with ammonia, which forms EAU DE LUCE.

A great variety of vegetable and animal substances are dissolved or decomposed by this alkali, which renders it of the highest importance in the ANALYSIS of animal and vegetable matters.

The uses of the volatile alkali are numerous and important. To the chemist, as a re-agent of very extensive utility, it is an indispensable requisite, as there is hardly a single analysis of mineral, vegetable, or animal matter performed (where at all complicated) in which ammonia is not largely employed.

In medicine this alkali is highly valuable, on account of its strong and diffusibly stimulant properties. When taken internally, its first effect is generally upon the throat and fauces, owing to its partial volatilization by the heat of the mouth. Every one is familiar with its use in relieving faintings and sickness when snuffed up the nostrils, though from the great acrimony of the caustic ammonia, the milder form of the carbonated ammonia, or *sal volatile* is generally preferred. The strong and sudden stimulus which it gives to the system, when applied to the nostrils, renders it also one of the most powerful applications in many of the more serious suspensions of the vital powers. The pure liquid ammonia is much too acrid to be used by itself, even as an external application, but when mixed with oil it forms a very useful liniment for strains, indolent swellings, and any case in which a powerful stimulant is required. Simple agitation with oil will unite the two liquors into an uniform milky saponaceous liquid, in which the sensible properties of the alkali are only blunted and not neutralized. A peculiar use of the liquid ammonia largely diluted with water, and taken internally, is in checking the sudden and dreadful effects produced by the bite of venomous serpents.

Priestley on Air.—*Journal de Physique* for 1785, 6, and 7. —*Philos. Transact.* for 1788.—*Anal. de Chimie, tom. ii. & vi.* —*Davy's Researches, &c. &c.*

AMMONIA, in *Mythology*, an appellation of Juno, to whom the Eleans sacrificed, alluding, perhaps, to Jupiter Ammon.

AMMONIAC, *Gum*, or, as it is sometimes, though improperly, called, ARMONIAC, is a concrete, gummy, resinous juice, which is said to ooze from a plant of the umbelliferous kind, as may be inferred from the seeds and pieces of such a plant with which it is intermixed. Ammoniacum

is very analogous to Galbanum, and the former, as well as the latter, is probably procured from a species of the Bubon. The seeds that are found among the tears resemble those of anethum or dill, except that they are larger.

Dioscorides says, it is the juice of a kind of *ferula*, growing in Barbary, and that the plant which produces it was called *agafyllis*. Pliny calls the plant whence it flows *metopion*, and says the gum took its name from the temple of Jupiter Ammon, in the western part of Egypt, now the kingdom of Barca, near which it grew. At present it is brought here from Turkey, and from the East Indies.

The good ammoniac ought to be in dry drops, white within, yellowish without, easily fusible, resinous, somewhat bitter and nauseous, and of a very sharp taste and smell, somewhat like garlic. The white drops or tears are observed to change to a yellowish or brownish colour, on being exposed for some time to the air. It should not be mixed with any scrapings of wood, stone, or sand; this, by the Greeks, was called *ερασμα*, *fragment*. The other, which is full of stone or sand, was called *ζερασμα*, that is, *mixture*. It is purified from the seeds, small stones, &c. commonly intermixed with it, by softening or dissolving it in a little boiling water, pressing it, while hot, through a strainer, and then inspissating it to its former consistence. For internal use the larger and finer tears, unpurified, are preferable to the common strained gum.

From an ounce of this gum-resin six drams may be dissolved by spirit of wine, or six drams two scruples and a half may be dissolved by water. Neumann.

This gum softens by the heat of the fingers, and adheres to them. It is brittle when cold; it is easily melted in an iron spoon; applied to a candle it burns and fumes. The more milky grains are contained in it, so much the more excellent is its quality. If these only be selected it will require no purification.

Some say it served the ancients for incense in their sacrifices. It enters several medicinal compositions, and its principal virtue is that of resolving obstructions, in which intention it is frequently used in asthmas and difficulty of expectoration, in menstrual suppressions, and cachectic indispositions. In obstructions of the breast it is reckoned the most effectual of the aperient gums. It is most commodiously taken in the form of pills; the dose is a scruple, or half a dram, every night or oftener; in larger doses, as a dram, it generally loosens the belly. In phtisical cases, where no injury is to be apprehended from a stimulus, this gum may be elegantly combined with oxymel of squills, distilled water, and syrup. Applied externally, it is supposed to disperse hard indolent tumours; and for this purpose it enters into the composition of many plasters. Plasters formed with vinegar of squills, and with wine vinegar, have been employed for curing the fungus of the joints or dropsy of the knee, and are said to have proved effectual. Plasters of this kind applied to the head, and allowed to remain for six or eight weeks, have removed the tinea capitis. Dr. Cullen (*Mat. Med. vol. ii. p. 369.*) affirms, that he has seldom found the expectorant power of this gum very remarkable, and that the mischief arising from its heating qualities has more than counterbalanced the benefit obtained by its expectorant powers. He adds, that its efficacy in resolving indurated tumours is very doubtful, and that he has had no clear proof from experience of its having any such power.

Ammoniacum, triturated with water, dissolves into an emulsion, or milky liquor, lac ammoniaci, and in this form acts rather more powerfully than in the solid one of a pill. Simple penny royal water is commonly

monly used for this purpose, in such proportion, that four spoonfuls, that is, two ounces, of the emulsion contain thirty grains of the gum. Some have dissolved it in vinegar of squills, and thus obtained a very powerful but unpalatable expectorant. When these milky solutions are kept for some time they deposit a considerable quantity of resinous matter, and become clear. Impurified they yield an extract of no smell, and of only a weak bitterish taste. In distillation no essential oil is obtained, and the distilled water is but slightly impregnated with the flavour of the ammoniacum. In this respect ammoniacum differs remarkably from most of the other deobstruent gums, as assafœtida, galbanum, and sagapenum, which afford not only a strong distilled water, but an actual oil, containing the concentrated flavour of the gums. Lewis. Murray.

AMMONIAC, *sal*, in *Gemistry* and the *Materia Medica*. SEE MURIATE of Ammonia.

AMMONIACAL *preparations*, in *Pharmacy*. There are several pharmaceutical preparations, into which the volatile alkali, under one form or another, enters as a principal ingredient. Of these the only one in which the alkali is employed in its caustic state is the *aqua ammoniæ puræ*, (Pharm. Lond.) also called *caustic spirit of ammonia*, or *spirit of ammonia with quicklime* (*Spiritus ammoniæ cum calce viva*), the methods of preparing which have been described under *liquid ammonia* in the preceding article. It may be observed, that though it is called a *spirit* it only consists of water, impregnated with pure ammonia through the medium of distillation. The appellation "with quick-lime" is added to distinguish it from the simple *spirit of sal ammoniac*, which is prepared (from the distillation of muriated ammonia in both cases, but) with chalk, and is therefore not caustic, but carbonated, and effervesces with acids.

The several preparations of the CARBONAT of Ammonia, employed in medicine, will be mentioned more particularly under that article and HARTSHORN. The principal are the *prepared ammonia*, *ammonia preparata*, (Pharm. Lond.) *Sal volatile*, *salt of hartshorn*, which is the solid carbonat of ammonia in its pure state, prepared for the most part by sublimation of some of the neutral ammoniacal salts with chalk.

Aqua ammoniæ, (Pharm. Lond.) or *spirit of sal ammoniac*, is prepared by distilling muriate of ammonia, chalk, and water; and is in fact nothing but a solution of carbonat of ammonia in water, effected by the medium of distillation, and perhaps containing a small portion of the caustic ammonia, where the chalk is not perfectly mild. Sometimes this liquor is prepared with pearl-ash, or carbonat of pot-ash instead of chalk. The effect will be the same upon the ammoniacal liquor, only when the pearl-ash is used, as it is always in a semi-caustic state, it will render the volatile alkali somewhat less carbonated.

Spiritus ammoniæ, (Pharm. Lond.) *Spiritus salis ammoniaci dulcis sive vinosus*. This differs from the preceding in being a real distilled spirit, as proof spirit of wine is the menstruum employed for the alkali instead of water. The term *spirit* is therefore, in the present London Pharmacopœia, very properly confined to the ammoniacal preparations where spirit of wine is employed; and the term *water* of ammonia is adopted where this liquid is the solvent for the alkali.

The true spirit of ammonia is made the basis of several powerful compound preparations, in which either an aromatic oil and water, or a fetid gum, is united with the alkaline spirit, according to the intention which it is to answer. Of the former kind is the *Spiritus ammoniæ compositus*, or *volatile aromatic spirit*, prepared by dissolving bergamotte essence and oil of cloves in the alkaline spirit (either with or without the help of distillation); of the latter is the *Spiritus ammoniæ*

fatidus, in which a certain quantity of assafœtida is dissolved in the spirit. The ammoniacal spirit is likewise made the basis of some unctures, instead of simple spirit of wine, where the operation of the volatile alkali properly combines with that of the gum or resin dissolved in the mixture.

For external applications, both the watery and the spirituous solution of ammonia, and both caustic and effervescent, are employed according to the strength of the remedy required. The caustic solution makes by much the most rapid and permanent union with oils, whence it is preferred in that delicate preparation, the *EAU DE LUCE*.

AMMONITE, or SNARESTONE.

Cornu Ammonis—*Ammonita*—*Ophiomorpha*, Lat.
Ammonshörner—*Widderhörner*—*Pöschhörner*—*Belschnecken*—*Drachenslein*—*Schlangen*, Germ.
Corne d'Ammon—*Pierre de serpent*—*Cornette de Peshillon*—*Cornette chambrée*, Fr.

The ammonite is a fossile univalve many chambered shell, of a flattened spiral figure, containing many circumvolutions, which decrease in bulk gradually from the circumference to the centre; all the circumvolutions may be divided by the same horizontal plane, and therefore the whole of the spiral is visible on each of the flattened sides. From its resemblance to a ram's horn, or rather to the compressed spiral horn with which the figures of Jupiter Ammon are generally represented, it has derived its common name. The vulgar consider it as a petrified snake; hence its appellation of *snakestone*, &c. The least reflection, however, ought long ago to have destroyed this error, if men in general were as capable of finding out differences as they are willing to see resemblances. A snake always coils himself up, so as to have his head in the centre of the spiral, and therefore the volume of the spires diminishes as they approach the circumference, whereas in the ammonite precisely the reverse takes place.

Ammonites are found of all intermediate sizes, between those which are scarcely visible to the naked eye, and a specimen in the British Museum, above three feet in diameter, and weighing about one cwt. The number of circumvolutions, however, is by no means according to the size of the shell: there are few perfect specimens which contain less than six, and hardly any that exhibit more than twelve. Of some the external surface is smooth, of others it is rugose, or striated, or tiled, or toothed. In fact there seems to be included, under the term ammonite, a very large natural family of shells, agreeing in certain essential characters, but remarkably differing in others; not fewer than thirty different kinds have been found in the neighbourhood of Bath. Scheuchzer, in his "Natur. historie des Schweizerlandes," enumerates 149 varieties, and Rosinus has swelled the catalogue to nearly 300.

There are three species of fossil shells, which have been occasionally confounded with the ammonite.

The first of these is the nautilus, or fossil nautilus; and although the extremes of the two species are readily discriminated from each other, yet the intermediate varieties of the ammonitiform nautilus, and the nautiliform ammonites may without much impropriety be classed under either species. In general, however, the nautilus has much fewer circumvolutions, and these do not gradually increase in capacity from the centre to the circumference, as is the case in the ammonites, but the exterior volute is rapidly and largely dilated, so as to be of much greater dimensions than that which immediately precedes it.

The spurious ammonite, or umbilicite, in external appearance, has a great resemblance to the real ammonite, but totally differs in its interior structure by not being divided into cells or chambers.

The lituite is another spiral many-chambered shell, but may, without much difficulty, be distinguished from the ammonite, as its volutes are fewer, do not touch each other, and the exterior one approaches nearly to a straight line.

Of all the fossil shells ammonites are perhaps the most numerous and most generally diffused: they are found principally in calcareous strata, and are the only organised remains that have been met with at very great heights: De Luc has discovered them on Mount Grenier, 7800 feet above the level of the sea: they also occur in marl, slate, indurated clay, and argillaceous iron ore. The internal cavities of the shell are usually filled with calcareous spar, at other times the whole substance is penetrated with pyrites, and occasionally is met with completely agatized.

The race of animals, of which these are the remains, has probably been long extinct, no naturalist having met with living ammonites more than a few lines in diameter, and even these have been, for the most part, proved to be only nautilus. In the account of the ill-fated voyage of La Perouse is a memoir by Lamanon, describing a living ammonite, four lines in diameter, found in the stomach of a bonetta, caught in the South Sea, between the tropics; but this supposed ammonite, from the figure and description, is probably a nautilus; the exterior volute is by much the largest, and the number of circumvolutions is only two and a half. It was, indeed, an opinion of Linnæus, that living ammonites, corresponding to all the fossil varieties, were still existing in the depth of the ocean; hence they have obtained the name of Pelagian shells: this, however, cannot be proved, and is rendered improbable for the following reasons: first, the shell of the ammonite is very thin, whereas those of animals that live at great depths is always thick. Secondly, ammonites are almost always found mixed with turbines, baccina, and other common shells, which, while alive, are now known to inhabit shallow seas, and are daily thrown up on every coast; the living ammonite, therefore, if still in existence, would probably be found in similar situations, and be occasionally thrown upon the shore, together with those shells by which, in a fossil state, it is commonly found to be accompanied.

Schroter, vollständige einleitung in die kenntnis der Steine, vol. iv.—Schröter, Lithologisches real, &c. vol. i.—Linn. Systema Naturæ.—De Luc, Lettres a la Reine.—La Perouse's Voyage, vol. iii.

AMMONITES, in *Ancient History*, the descendants of Ammon, took possession of the country called by their name, after having driven out the Zamzumims, who were its ancient inhabitants. The precise period at which this expulsion took place is not ascertained; nor does history inform us to any great degree concerning the manners and customs of these people. They had kings, and were uncircumcised, (Jer. ix. 25, 26.) and seem to have been principally addicted to husbandry. They, as well as the Moabites, were among the nations whose peace or prosperity the Israelites were forbidden to disturb, (Deut. ii. 19, &c.) However, neither the one nor the other were to be admitted into the congregation to the tenth generation, because they did not come out to relieve them in the Wilderness, and were concerned in hiring Balaam to curse them. Their chief and peculiar deity is, in Scripture, called MOLOCH; and CHEMOSH was also a god of the Ammonites. Before the Israelites entered Canaan, the Amorites conquered a great part of the country belonging to the Ammonites and Moabites; but it was retaken by Moses, and divided between the tribes of Gad and Reuben. Before the time of Jephthah, ante Christ. 1188, the Ammonites engaged as principals in a war, under an anonymous king, against the Israelites. This prince, determining to recover the ancient country of the Ammonites,

made a sudden irruption into it, reduced the land, and kept the inhabitants in subjection for 18 years. He afterwards crossed Jordan with a design of falling upon the tribes of Judah, Benjamin, and Ephraim. The Israelites resisted the invader: and assembling at Mizpeh, chose Jephthah for their general, and sent an expostulatory message to the king of the Ammonites (Judges x. and xi.) The king replied, that those lands belonged to the Ammonites, who had been unjustly dispossessed of them by the Israelites when they came out of Egypt, and exhorted Jephthah to restore them peaceably to the lawful owners. Jephthah remonstrated on the injustice of his claim; but finding a war inevitable, he fell upon the Ammonites near Aroer, and defeated them with great slaughter. On this occasion the Ammonites lost 20 cities; and thus an end was put, after 18 years bondage, to the tyranny of Ammon over the Israelites beyond Jordan. In the days of Saul (1 Sam. xi.) ante Christ. 1095, the old claim of the Ammonites was revived by Nahash their king, and they laid siege to the city of Jabelh. The inhabitants were inclined to acknowledge Nahash as their sovereign; but he would accept their submission only on condition that every one of them should consent to lose his right eye, and that thus he might fix a lasting reproach on Israel; but from this humiliating and severe requisition they were delivered by Saul, who vanquished and dispersed the army of Nahash. Upon the death of Nahash, David sent ambassadors to his son and successor Hanun, to congratulate him on his accession; but these ambassadors were treated as spies, and dismissed in a very reproachful manner. 2 Sam. x. This indignity was punished by David with signal rigour. Rabbah, the capital of Hanun, and the other cities of Ammon, which resisted the progress of the conqueror, were destroyed and razed to the ground; and the inhabitants were put to death with circumstances of extreme severity. In the reign of Jehoshaphat the Ammonites united with their brethren the Moabites, and the inhabitants of Mount Seir, against this king of Judah; but their hostile attempts were resisted, and they were completely routed. They were afterwards overthrown by Uzziah, king of Judah, and made tributary. 2 Chron. xxvi. 8. But rebelling in the reign of his son Jotham, they were reduced to the necessity of purchasing peace at a very dear rate. After the tribes of Reuben, Gad, and the half tribe of Manasseh were carried into captivity by Tiglath Pileser, ante Christ. 740, the Ammonites and Moabites took possession of the cities belonging to these tribes, and were reproached for it by Jeremiah. Ch. xlix. 1. Their ambassadors were exhorted to submit to Nebuchadnezzar, in the typical language of the prophet, and threatened, on their refusal, with captivity and slavery. Ch. xxvii. 2, 3, 4. The prophet Ezekiel, ch. xxv. 4.—10, denounces their entire destruction, and informs them, that God would deliver them up to the people of the east, and that the Ammonites should no more be mentioned among nations; and this punishment they were to suffer for insulting the Israelites on account of their calamities, and the destruction of their temple by the Chaldeans. This punishment is supposed to have been inflicted upon them in the fifth year after the taking of Jerusalem, when Nebuchadnezzar made war against all the people around Judea, A. M. 3420 or 3421, ante Christ. 583. It is probable that Cyrus granted to the Ammonites and Moabites liberty to return into their own country, whence they had been removed by Nebuchadnezzar; for they were exposed to the revolutions that were common to the people of Syria and Palestine, and subject, sometimes to the kings of Egypt, and sometimes to the kings of Syria. Polybius (lib. v.) informs us, that Antiochus the Great took Rabbath,

or Philadelphia, the capital of the Ammonites, demolished the walls, and put a garrison into it, A. M. 3166, ante Christ. 108. During the persecutions of Antiochus Epiphanes, the Ammonites manifested their hatred to the Jews, and exercised great cruelties against such of them as lived in their parts. At length their city Jaser, and the neighbouring town fell a prey to the Jews, who smote the men, carried their wives and children into captivity, and plundered and burnt the city. Thus ended their long conflict with the descendants of Israel. About the beginning of the second century of the christian era they were thought worthy of being called a numerous nation. Julia Martyr says (*Dial. cum Tryphone*, p. 272.) that in his time there were still many Ammonites remaining; but about this period their name vanished, and they were blended with the Arabians; for Origen assures us in (*Job lib. i.*), that in his days they were only known under the general name of Arabians. In this respect the prophecy of Ezekiel above cited was literally accomplished. Josephus *Ant. l. v. c. 9. l. vii. c. 6, 7. l. xii. c. 12.* Prideaux *Conn. P. ii. book 4.* Calmet.

AMMONITIS, in *Ancient Geography*, the country of the Ammonites. It was a district of Arabia Deserta, extending from south to north to the east of Palestine. The limits to the west and partly to the north were the river Jabbok, which ran, according to Josephus, between Rabbath-Ammon, or Philadelphia, the capital of Ammonitis, and Gerafa, and fell into the Jordan. They had also the river Arnon on the west, which divided them from the land of Gilead, or the tribe of Gad; on the south they had the Ishmaelites, on the east the deserts of Arabia, and on the north the hills of Gilead and Bashan. The territories of the Ammonites seem, according to the sacred historians, to have been anciently confined by the river Arnon and Jabbok; but their frequent conquests on their neighbours occasioned their boundaries to be in a state of constant fluctuation. *Reland. lib. i. p. 104--113.*

AMMONIUS, in *Biography and History*, was general of Alexander Balas's troops, and accused by Ptolemy Philometer of a design to poison him. In his attempt to escape from Antioch, in the disguise of a female dress, he was apprehended and put to death, A. M. 3859, ante Christ. 145.

AMMONIUS, a Peripatetic, was a native of Egypt, and flourished about 140 years before Christ. He was the preceptor of Plutarch, and is frequently mentioned by him, without either commendation or reproach. He attempted to extend the authority of Aristotle beyond the limits of his own sect, by blending the Platonic and Stoic doctrine with the Peripatetic. He taught and died at Athens. *Suidas. Fabricius. Brueker's Phil. by Enfield, vol. ii. p. 104.*

AMMONIUS, Saccas, so called, as it is supposed, from his early occupation as a porter in the harbour of Alexandria, was an eminent Alexandrian philosopher, and flourished about the beginning of the third century. He was born of Christian parents, and was betimes instructed in the catechetical school established at Alexandria. Under the Christian preceptors, Athenagoras, Pantænus, and Clemens Alexandrinus, by whom this school was conducted, and who united Gentile philosophy with the Christian doctrine, he acquired a strong propensity towards philosophical studies, and became exceedingly desirous of reconciling the different opinions which at that time subsisted among philosophers. To him we must refer the complete constitution of the sect of the ECLECTICS, which had been first projected by Potamo, a Platonist. Porphyry asserts, that Ammonius passed over to the legal establishment, that is, apostatized to the Pagan religion. Eusebius and Jerom, on the contrary, affirm, that Ammonius continued in the Christian faith to the end

of his life. But it is probable, that these Christian fathers refer to another Ammonius, who, in the 13th century, wrote a Harmony of the Gospels, or to some other person of this name; for they refer to the sacred books of Ammonius; whereas, Ammonius Saccas, as his pupil Longinus attests, wrote nothing. Porphyry's testimony is more worthy of reliance than that of Eusebius, because he was nearer Ammonius Saccas than this Christian father, and he must have derived his information from his master Plotinus, who spent 11 years with Ammonius. Besides, it is not easy to account for the particulars related of this philosopher, without supposing that he renounced the Christian faith. It seems improbable that a Christian would have accepted the chair in a Pagan school, or would have been followed by disciples who waged perpetual war against Christianity. However, it sufficiently appears, that he was well acquainted with the Christian doctrine, and endeavoured to incorporate it into his system. According to Hierocles, Ammonius was induced to execute the plan of an Eclectic school, by a desire of terminating the contentions which had long distracted the philosophical world; and he bestows great praise on the institution of philosophy, which he established for this purpose; or with a view of evincing the harmony that subsisted between the doctrines of Plato and Aristotle in all the great and essential points, and introducing a system free from dispute.

Ammonius had many eminent followers, both Pagan and Christian. He taught his select disciples certain sublime doctrines and mystical practices, and was called *ἑρμῆσιος*, the heaven-taught philosopher. These mysteries were communicated to them under a solemn injunction of secrecy. Porphyry relates, that Plotinus, with the rest of the disciples of Ammonius, promised not to divulge certain dogmas which they learned in his school, but to lodge them safely in their pure minds. This circumstance accounts for the fact mentioned by Longinus, that he had left nothing in writing. Ammonius probably died about the year 243. Amongst those disciples who were admitted to the knowledge of his mysteries were Herennius, Origines, Longinus, and Plotinus. The two former violated their promise by divulging the secrets of the school of Ammonius; in consequence of which Plotinus thought himself no longer bound by his promise, and became a public preceptor in Philosophy upon Eclectic principles. *Porphyr. Vit. Plotini. Suidas. Fabric. Bib. Græc. tom. iv. c. 26. p. 154, &c. Lardner's Works, vol. ii. p. 414. Brueker by Enfield, vol. ii. p. 62, &c.*

AMMONIUS, a Christian writer of Alexandria, lived about the year 220, according to Cave, and though his time is uncertain, has been confounded by him and many other learned men with Ammonius Saccas. Eusebius mentions a person of this name, who was a presbyter of Alexandria, and suffered martyrdom in the Diocletian persecution; and we might be apt to think this to have been the writer, if Eusebius had not been of a different mind. St. Jerom speaks of Ammonius as an eloquent and very learned man, who, among many excellent monuments of his genius, composed an elegant work of the consent of Moses and Jesus, and invented the evangelical canons, which Eusebius of Cæsarea afterwards followed. The former is quite lost; of the latter we are informed by Eusebius, that Ammonius of Alexandria has left us a gospel composed out of the four with great labour, subjoining to Matthew's gospel the consonant passages of the other evangelists; and that he had composed, in another method, ten canons, which are there subjoined. The evangelic canons, though they are reckoned among the works of Ammonius, may have been probably Eusebius's invention, whilst the harmony of Ammonius might have suggested the design. Whether this harmony be still extant is a subject

a subject in dispute. Cave and Mill agree in supposing, that it is the larger of the two which we now have in Latin. Mr. Jo. James Wetstein will not allow this work to have been composed by Ammonius, but thinks it the production of some writer since Eusebius. Dr. Lardner supposes this work to have been interpolated since it was first composed, and even the form of it to have been altered.

AMMONIUS, the Grammarian, lived in the fourth century, and, according to Socrates, the ecclesiastical historian, was a pupil of the grammarian Helladius of Egypt. He fled from Alexandria in 389, when the heathen temples were destroyed by order of the emperor Theodosius. Photius speaks of him as a great admirer of the Greek poets, and an industrious critic in the Greek language; and to him we owe a treatise on Greek synonyms, entitled "*περί ομοίων και διαφορών λέξεων*," "On words of similar and different significations," in the form of a dictionary. It was first published in Venice in 1497, and afterwards at the press of Aldus, as an appendix to a Greek and Latin lexicon, published in folio, at Venice in 1524, at Paris in 1521, at Basil in 1532, and annexed to Stephens's Thesaurus in 1572, and to Scapula's Lexicon. Fabricius Bib. Græc. lib. iv. c. 26. tom. iv. p. 173.

AMMONIUS, a Peripatetic philosopher, was the son of Hermeas, flourished at the beginning of the sixth century, and taught at Alexandria under the reign of Anastasius. He was the disciple of Proclus, and the preceptor of Simplicius, Asclepius the Trallian, John Philoponus, and Damascius, by the latter of whom he is represented as superior to the other philosophers of his age, and particularly excelling in mathematical learning. His commentaries upon Aristotle and Porphyry are still extant. His commentary upon Aristotle's book, "De Interpretatione," together with a Commentary on the Categories, was printed by Aldus in folio, at Venice, in 1503. An extract from this work on Providence and the fore-knowledge of God, and free will of man, was published by Grotius, at Paris, in 1648, and at Amsterdam, in the third volume of his theological works, in 1679. His Commentary "In Isagogen Porphyrii de quinque Prædicabilibus," was printed by Aldus, at Venice, in 1500, and has passed through several editions. Fabric. Bib. Græc. vol. iv. lib. iv. cap. 26. p. 161.

AMMONIUS, ALEXANDRINUS, an ancient surgeon of Alexandria, called also Lithotomus, from having invented an instrument, a kind of file or saw, for breaking or dividing stones generated in the bladder, and which are too large to pass through the natural passages in their entire state. With what success this art, (which is obscurely hinted at by Celsus) was practised, we are not acquainted. It has long since been lost, and the title Lithotomist, given to persons cutting into the bladder, and extracting the stones through the wound. But those, Le Clerc observes, should rather be called Cystotomists. Haller, Bib. Chirurg.

AMMONIUS, ANDREW, a native of Lucca, who settled in England in the beginning of the 16th century, and lived for some time in the house of Sir Thomas More, and afterwards in St. Thomas's college, not being in circumstances that allowed his having a house of his own. At length he was appointed secretary to Henry VIII. and honoured by Pope Leo X. with a public character at the court of this prince; but his views of higher and more lucrative advancement were disappointed in middle age by his death, occasioned by the sweating sickness in 1517. He was distinguished by the intimate friendship and frequent correspondence that subsisted between him and Erasmus. Erasmus, in the humorous advice which he gives him as to the most effectual method of advancing his fortune, designed to satirize the usual methods that are adopted for this purpose. "In

the first place," says he, "throw off all sense of shame; thrust yourself into every one's business, and elbow out whomsoever you can; neither love nor hate any one; measure every thing by your own advantage; let this be the scope and drift of all your actions. Give nothing but what is to be returned with usury, and be complaisant to every body. Have always two strings to your bow. Feign that you are solicited by many from abroad, and get every thing ready for your departure. Shew letters inviting you elsewhere, with great promises." Erasmus Epist. xiii. lib. 8. p. 414. Erasmus (Epist. v. lib. 23.) thus laments his death. "How many of my companions have I lost! in the first place, Andriæ Ammonius of Lucca: Good God! what a sprightly genius! of what a faithful memory! how noble was his soul! how free from envy and every meanness! when his own qualifications, and the applause of princes had opened him a way to the greatest affairs, he was suddenly snatched off before he was forty years of age, the loss of whom I cannot but lament, as often as I reflect how delighted I was with his acquaintance!" What he writes to Erasmus in one of his letters, viz. that the burning of so many heretics had raised the price of wood, must be regarded as an hyperbole. Ammonius wrote some Latin poetical pieces. Gen. Dict.

AMMOSCHISTA, in *Natural History*, a genus of stones of a laminated structure, and splitting only horizontally, or into flat plates.

The *ammoschista* are coarse, harsh, and rough stones, of a very loose texture, and appearing something porous. They are considerably heavy, and composed of a large, coarse, and obtusely angular GRIT, surrounded, and in part held together, by a loose earthy spar. They are very soft, and friable in the mass, but much more so when reduced to small pieces. They make a violent effervescence with aqua fortis, and will not easily strike fire with steel.

The species of *ammoschista* are six.

AMMUNITION, in general, signifies all sorts of warlike stores and provisions, more especially powder and ball.

The word is *amentio*, which, according to Du-Cange, was used in the corrupt state of that language for *substance*.

Ammunition for small arms, in the British service, is generally packed in half barrels or kegs, each containing 1000 musket or 1500 carbine cartridges. An ammunition waggon will carry 20 of these kegs or barrels, and an ammunition cart 12 of them. The cartouch boxes of the infantry are made of so many different shapes and sizes, that it is impossible to say exactly what ammunition they will contain; but most of them can carry 60 rounds. See CARTRIDGE. The French pack all their ammunition in waggons without either boxes or barrels, by means of partitions of wood. Their 12-pr. waggons will contain 14000 musket cartridges, and their 4 pr. waggons only 12,000 each.

Ammunition, or gun-powder, may be prohibited to be exported at the king's pleasure, by 12 Car. II. cap. 4. sect. 13.

By 1 Jac. II. cap. 8. sect. 2. *ammunition*, arms, utensils of war, or gun-powder, imported without licence from his Majesty, are to be forfeited with treble the value. Such licence obtained, except for the furnishing of his Majesty's public stores, is to be void, and the offender to incur a prebend, and be disabled to hold any office from the crown.

Whoever is curious to know the quantity of ammunition necessary for the siege of a place, may consult the chevalier de St. Julian's treatise, *De la Forge de Vulcain*; and the quantity requisite for the defence of a place, will be found in Suiresg. de St. Remy's *Memoires d'Artillerie*. See ARTILLERY.

AMMUNITION-bread, shoes, &c. what is provided for, and distributed to, the soldiers of an army or garrison.

Such an officer has so many rations of ammunition-bread, &c.

AMMUNITION Cart, a two-wheel carriage with shafts, the sides of which, as well as the fore and hind parts, are inclosed with boards.

AMMUNITION Waggon, is generally a four wheel-carriage with shafts; the sides are railed in with staves and raves, and lined with wicker work, so as to carry bread, and all sorts of tools.

AMNA, in *Physical Writers*, denotes the water found in limy soils, and which is consequently tinged with a whitish colour, as in many places of England.

In this sense Paracelsus speaks of the medical virtues and uses of *amna*.

AMNESIA, in *Medicine*, loss of memory. It is sometimes a consequence of febrile diseases, generally receding as the patient gains his strength.

When it is the consequence of old age it can hardly be expected to be cured.

AMNESTY, or **AMNISTY**, from *α, not*, and *μνησις, I remember*; a kind of general pardon, which a prince grants to his subjects, by a treaty or edict, wherein he declares, that he forgets and annuls all that is past, and promises not to make any farther enquiry into the same.

The word is *αμνηστια, amnesia*; which was the name of an ancient law of this kind, passed by Thrasybulus upon the expulsion of the thirty tyrants out of Athens. Andocides, an Athenian orator, whose life is written by Plutarch, and of whom we have an edition of the year 1575, gives us, in his Oration upon Mysteries, a *formula* of the amnesty, and the oaths taken thereupon.

Amnesties are usually practised upon reconciliations of the sovereign with his people, after rebellions, general defections, &c.

Amnesty is either general and unlimited, or particular and restrained, though most commonly universal, without condition or exceptions; such as that which passed in Germany, at the peace of Osnaburgh, in the year 1648.

Amnesty, in a more limited sense, denotes a pardon granted by a prince to his rebellious subjects, usually with some exceptions; such was that granted by king Charles II. at his restoration.

Amnesty also, in a military sense, signifies the pardon granted by a sovereign to deserters, on condition of their rejoining their regiments.

AMNIAS, in *Ancient Geography*, a river of Paphlagonia, that rose in the country called Domanitis, north west of Germanicopolis, and discharged itself into the gulf of Amisus.

AMNICA, in *Conchology*, a species of **TELLINA**. Shell somewhat heart-shaped and transversely grooved with an obtuse protuberance. Linnæus. This is an European shell, and inhabits pools and ditches; it is less globose than tellina cornea, but about the same size. Inside blue, shining; out side whitish or yellow brown, with one or two blackish ribs. Young ones entirely white and pellucid.

AMNIMODAR, in *Astrology*, the planet that rectifies a geniture, or rather a method of rectifying a nativity, and finding the precise degree in the horoscope at the time of an infant's birth, from the condition of the planet, which had the rule in the last preceding conjunction, or opposition of the luminaries. *Vital. Lex. Math.*

AMNIOS, or **AMNION**, in *Anatomy*, the innermost membrane of the ovum, which contains the fœtus and the waters.—The word seems to be derived from *αμνος, a lamb*; *q. d. pellis agnina, lamb's skin*. See **GENERATION**.]

AMNIOS, liquor of the, chemical properties of. **Al-**

though the analysis of vegetable and animal substances is as yet less satisfactory than that of inorganic matter, a multitude of improvements have, nevertheless, been introduced of late years into this branch of the science for which we are principally indebted to the French philosophers. Vauquelin, Berthollet, and Fourcroy, by abolishing the old method of analysis by fire, according to which all animal substances afforded the same results, and introducing in its stead the use of the simpler menstrua, have been enabled to discover many peculiar products of animalization. According to the ancient mode, in which Neumann was so long and so fruitlessly employed, of destructive distillation, any animal matter was made to yield first an insipid, faint-smelling phlegm, then an impure ammoniacal oil, after which a portion of concrete salt was sublimed, and there remained in the retort a spongy coal of difficult incineration, which, by burning in an open fire, was reduced into a white ash or caput mortuum. If this had continued to be the way of analysis, we should have contented ourselves with giving an instance of one as a specimen of the whole; but since a better method has been found out, it will be right to particularize, in their proper places, most of the modern analyses and experiments on animal substances, as, if not quite satisfactory, they are at least well deserving of mention, in a work like the present, and have already been applied to explain the *rationale*, and improve the practice of some of the most difficult and important among the arts and manufactures.

The liquor of the amnios is a fluid in which all the young of the mammalia are inclosed previously to their birth; and chemistry is indebted to Vauquelin and Buiva for an examination of this secretion, as afforded by the human female and the cow.

The first of these liquors presented the following properties. It has a mild faint odour, like that of all the white or colourless animal fluids. To the taste it is slightly saline. Its colour is a dilute white, owing to its containing some particles of a caseous matter; by filtration, however, it becomes perfectly transparent. Its specific gravity is = 1.005. By agitation it froths considerably. On being heated it acquires a femiopacity like that of milk with a large proportion of water, at the same time a smell is developed like that of boiled white of egg. It decidedly changes the colour of tincture of violets to green, and yet slightly reddens that of tournesol. Potash occasions a flocculent precipitate, resolvable by a weak acid. The acids appear to have no other effect than that of clarifying it. Alcohol throws down a light precipitate, which, when dry, becomes brittle and transparent like glue. With infusion of gall-nut it yields a very copious brown precipitate. Nitrat of silver causes a white precipitate insoluble in nitric acid.

Hence this fluid appears to contain albuminous matter, similar to that of the blood; a muriatic salt, probably muriated soda; and a small quantity of free or carbonated alkali.

When evaporated to dryness it leaves a residue no greater than 0,012 of the mass. This, by lixiviation and evaporation, affords crystals of common salt and carbonated soda, and the remaining animal matter, on being burnt, exhales a fetid ammoniacal odour like horn, and leaves a few white ashes, composed of carbonated soda, and phosphat, and carbonat of lime.

The amniotic liquor of the cow remarkably differs from the preceding.

It is of a brownish red colour; an acid bitterish taste; an odour approaching to that of vegetable extract; its specific gravity is = 1.028, and it has a viscous consistence, like a solution of gum.

It reddens very decidedly the tincture of tournesol. It gives an abundant precipitate with muriat of barytes; and cep fits a large quantity of reddish matter, by the action of alcohol.

When submitted to evaporation a thick scum rises to the surface, and after being reduced to a quarter of its bulk, a number of long acid needleform crystals are produced as the liquor cools; these being all deposited, and the matter further brought by evaporation to the consistence of honey, a fresh production of crystals takes place; these, however, differ in form from the preceding, and are sulphat of soda.

The extractive matter being separated from the acid crystals, and from the water which held them both in solution, by means of alcohol, assumes the appearance of a compact adhesive cement; in colour reddish brown, and of a peculiar indescribable flavour. It is readily soluble in water, to which it gives a viscosity, and the property of frothing by agitation; in this respect it resembles animal mucilage, but differs from this substance in not forming a jelly, nor combining with TANNIN. When exposed to the fire it swells greatly, and gives out at first an odour of burnt mucilage, then of an empyreumatic ammoniacal oil, and finishes with the disengagement of prussic acid. The coaly matter which it yields is bulky, easily incinerated, and affords a light white ash, composed of phosphated magnesia, with a slight trace of phosphat of lime.

The concrete needle-shaped crystals are brilliant, transparent, slightly acid, reddening the tincture of tournesol. They are scarcely soluble in cold water, but readily so in boiling water, from which by cooling they are deposited in long slender needles. This acid combines without difficulty with the caustic alkalies, forming a very soluble salt, but will not decompose the carbonated alkalies, except assisted by heat. It is separated from its alkaline combinations by the mineral acids, in form of a white crystalline powder. It produces no change in the aqueous solution of the alkaline earths, nor does it alter the nitrats of silver, lead, or mercury. By heat it is destroyed, exhaling an ammoniacal odour, mixed with that of prussic acid, and leaves a spongy coal. It is different in its properties from all the known acids, and may be received into the modern nomenclature by the name of the amniotic acid. *Annales de Chimie*, vol. xxxiii. p. 269.

AMNISUS, in *Ancient Geography*, a small river in the island of Crete, mentioned by Callimachus, Apollonius, and Suidas.

AMNISUS, a port in Crete, probably at the mouth of the above-mentioned river, in which the Cretans pretended, according to Pausanias, that Lucina was born, and where this goddess had a temple and was worshipped. Strabo says, that Amnisus was the port of the town of Cnossus.

AMNITÆ, an ancient people, who seem to have been the same with the SAMNITÆ of Strabo, whom he places in a small island to the west of Gaul, and near the mouth of the river Loire. According to him, the women were a sort of Amazons, who allowed intercourse with men only once a year, and who offered sacrifices to Bacchus.

AMNON, a river of Arabia Felix, according to Ptolemy.

AMODOCI, one of the mountains which encompassed the European Sarmatia, according to Ptolemy.

AMOENUS, in *Entomology*, a species of CURCULIO, described by Fabricius as a native of New Holland; it is black with two snowy-white spots on the thorax, and five on the wing-cases.

AMOEBEUM, in the *Ancient Poetry*, denotes a kind of poem, or composition, wherein two parties speak alternately in the same number of verses, but so as that he who answers, either goes beyond or contradicts the other.

The word is ἀμοιβῶν, signifying *mutual* or *alternate*. Hence also we meet with *epistola amabæa*. Such, e. g. are those of Pliny and Trajan.

AMOGABARI, a kind of ancient Spanish soldiery, in great repute for their bravery.—These are otherwise denominated by some writers, *almugaveiri*.

AMOGLOSSUS, in *Ichthyology*, a name of a peculiar kind of flat fish, somewhat resembling the sole, and called in some parts of England, the *lantern*. It is of a very slender, pellucid, and white body, never exceeds three inches in length, and is very smooth to the touch, being covered only with a number of very thin scales, which fall off on touching it. Its flesh is very finely tasted, and requires very little dressing.

AMOK, a term signifying slaughter, and used as the exclamation of the Bokanese slaves in the island of Batavia. These slaves, who are brought from the island of Celebes, when irritated by ill usage, are exceedingly dangerous; as in this case they intoxicate themselves with opium, sally into the street, and murder every person whom they happen to meet. This is called *running amok*, this word being the cry of these desperate wretches. Some have supposed, that from this practice Steele borrowed the idea of the mohock club, mentioned in the Spectator.

AMOL, or AMU, in *Geography*, a town of Asia, in the country of the Usbecks, in Independent Tartary, seated on the Gilon, 115 miles west of Samarcand. N. lat. 39° 30'. E. long. 64° 35'.

AMOMI, is used, by the Dutch traders, for what we otherwise call Jamaica pepper.

AMOMUM, in *Botany*, a genus of the *monandria monogynia* class and order, of the natural order of *scitominæ* and *cannæ* of Jussieu, the characters of which are that the *calyx* is a perianthium one-leaved, cylindraceous and unequally trifid; the *corolla* is monopetalous and funnel-shaped, tube cylindraceous, border three-parted, parts oblong and spreading; the nectary two-leaved or two-lipped, lower lip inserted under the upper segment of the corolla, spreading, almost erect, entire or three-lobed; the *stamina* have no filament, except the upper lip of the nectary, smaller than the lower, and opposite to it, acuminate or three-lobed the tip; along the middle or at the end of which grows longitudinally a large oblong anther, geminate, or divided by a longitudinal furrow into two which are one-valved; the *pisillum* has an inferior, oblong germ, style filiform, drawn through the future of the anther, stigma turbinate, obtuse and ciliate; the *pericarpium* a fleshy capsule, ovate, three-cornered three-celled, and three-valved; the *seeds* are several, covered with a sort of berried aril. Obs. The inflorescence is in a spike, on a distinct scape. Willdenow enumerates 11, Martyn 12, and Gmelin, in his edition of Linnæus, 20 species. 1. *A. zinziber* or *zingiber*, zingiber majus of Rumph. zingiber of Bauhin, inschi of Rheed, achter ingwer of Willd. narrow-leaved ginger, with a middle-sized (naked, G. and W.) scape, ovate spike, (ovate scales, W.) and leaves linear-lanceolate, (ciliate at the tip, W.) The root is creeping by palmate, compressed, fleshy tubers, which become fibrous with age; the culm annual, two feet high, single, solid, and upright; leaves half a foot long, smooth, alternate, on short, embracing petioles; the scape separate, eight inches high, thick, round, scaly, usually without leaves; the spike composed of large ovate, subacuminate, coloured scales, half closing the flowers; calyx a small double spathe; corolla yellowish green with a long slender tube, the segments of the body conical, and nearly equal; nectary reddish brown, ovate, petal-shaped, winged on each side at the base, and somewhat shorter than the corolla; filament, or upper lip of the nectary

tary filiform, placed on the corolla and shorter; anther ovate, cloven longitudinally, embracing the filiform style; stigma cylindrical, ciliate at the tip; capsule smooth, containing many oblong seeds. This species, cultivated here by Miller, in 1731, and flowering in September, is a native of the East Indies, and other countries of Asia, and is much cultivated there and in the West Indies. The dried roots furnish a considerable article of commerce from our West India islands; they are of great use in the kitchen and in medicine, and preserved green as a sweet-meat, are preferable to every other sort. For the dietetical and medical use of ginger, see GINGER. 2. *A. zerumbet*, zingiber latifolium sylvestre of Herm. lampujum of Rumph. katouinseli-kua of Rheed, block ingwer of W. broad leaved G. or zerumbet, with a naked scape, oblong, obtuse spike, subrotund scales, and leaves ovate and smooth at the margin. According to Murray, the *A. zingiber* is more aptly distinguished from the *A. zerumbet*, by its narrow leaves, called ensiform by Jacquin, than by the ovated spike, and the latter is more jolly distinguished from the former by its broad leaves than by its oblong obtuse spike, for the *A. zerumbet* has equally an ovate spike. This species has the tubers of the root much larger, round, twisted, thick, branched, horizontal, pale-coloured, with little smell and a bitterish taste, but not an ardent flavour like true ginger; culm four feet high, perennial, straight, round and solid like the preceding species; leaves lanceolate, large, smooth, petioled, embracing and ascending obliquely; the scape a foot high, distinct, thick, scaly and red; spike large, with rounded, close, one-flowered, red scales; calyx a single acute spathe; corolla pale, with a long tube; nectary of the same colour, petal-shaped, very blunt, bifid, fastened to the throat of the corolla; filament flat, subulate, bent in, adhering to the hinder segment of the corolla, and nearly equal to it; another oblong, fastened to the middle of the filament; cultivated at Hampton Court, in 1690, and flowering with us from September to November, when the stalks perish like those of the true ginger; a native of the East Indies, Cochinchina, &c. and also in Otaheite, and the other Society isles. This is used externally in the East in cataplasms and fomentations, but not internally, as spice or medicine; though Garcias says, that it makes a better preserve with sugar than the other. 3. *A. zedoaria*, with a naked scape, loose cylindrical truncated spike, and ovated acuminate leaves. This is the *A. latihumile*, with larger ovated acuminate leaves, and scape terminated by an oblong spike of La Marck, zedoaria longa of Bauhin, zedoaria officinarum of Petiv. zedoaria seu Indorum tamog of Cam. luz. kua of Rheed, zerumbet common of Rumph. and zittwer ingwer of W. This species grows in Malabar, and other parts of the East Indies. The flowers have an agreeable smell; the root has an acrid pungent, aromatic, and somewhat bitterish taste; its smell is strong, but pleasant; dried and reduced to powder it loses its acrid taste, and it is formed into bread by the Indians in a time of scarcity. See ZEDOARY. 4. *A. sylvestre*, paco ceroca of Piso, Braz. zingiber sylvestre majus, &c. of Sloane, wald ingwer of W. great wild ginger, with a naked scape, spike elongated, with oblong ventricose bractes, and leaves broad-lanceolate. This does not differ from the second species, except that the stalk rises eight or nine feet high, that it has much larger leaves, and that, instead of the flowers and fruits being on the end of the same stalk, they are on another about three feet high, immediately springing from the root. It is a native of the wood of Jamaica; the root is warm and stimulates gently, and may be properly administered as a stomachic and alexipharmic. 5. *A. mioga*, dsjooka vulgo mioga of Kämpfer, Japanischer ingwer of W. Japanese ginger, with a very short

scape, ovate capsule, and ensiform acute leaves. This approaches very near to the *A. cardamomum* of Java, in having the spike of flowers distinct from the leaves, and ovate capsules, but differs from it in having the scape more fasciated and shorter, not oblong and imbricate, the leaves ensiform, and merely acute, whereas in the other they are obovate-elliptic, with a long bristle at the tip; they are also much shorter, only about a span in length, but in the other they are often four feet long. In the leaves it much resembles *A. zinziber* and *A. zerumbet*; but the spike of flowers is radical, with scarcely any scape. It is a native of Japan, where it flowers in September. 6. *A. angustifolium* of Sonnerat, *A. Madagascariense* major, &c. of La Marck, schmalblattriger ingwer of W. narrow-leaved ginger, with a naked, very short scape, capitated spike, and linear-lanceolate leaves. The stem is eight or ten feet high, the pedal leaves are very narrow and linear-lanceolate, the scape very short, the spike globose, and few-flowered, and the capsules ovate. It is a native of the marshes of the island of Madagascar. The seeds have a pleasant aromatic taste; and their smell is agreeable; and hence, says Geoffroy, some have called them grains of paradise; a denomination that more properly belongs to another species. 7. *A. cardamomum*, cardamom, with a very simple and short scape, and alternate, loose bractes, or with the spike radical, sessile and obovate, and leaves obovate-elliptic and cuspidated, W. This species has thick fleshy roots, resembling those of the large flag iris, which in the Spring send forth many green reed-like stalks, that rise to the height of seven or eight feet, garnished with very long narrow leaves, alternate and embracing; the stalks decay in Autumn, and new ones arise from the roots in Spring; the roots thrive and increase, but it has not yet produced flowers in England. In Malabar cardamom is an object of considerable commerce. The Indians also themselves make great use of it, mixing the seeds with their bread, under a notion that it facilitates digestion. See CARDAMOM. 8. *A. villosum* of Loureiro, globba crispa rubra of Rumphius, rauher ingwer of W. with short reclining scape, linear bractes and villose fruit, or with very short, vaginated scape, roundish spike, and bractes lanceolate and longer than the flower. The smell of the whole plant is aromatic, mild, with a small degree of sharpness, the taste of the fruit, when fresh, sweetish and pleasant. It is a native of the mountains of Cochinchina; the seeds are much valued by the Chinese, and used medicinally in China. 9. *A. medium* of Loureiro, with spike cauline, branched; and fruit oblong, and streaked, without a valve. In Gmelin's Linnæus, *A. medium* is characterized as having an oblong three-cornered pyramidal coriaceous capsule and three valves. This species is a native of China, in the province of Yunan, to the west of Canton. The seeds are used in agues, for culinary purposes, and for increasing the strength of odours in general. 10. *A. minus*, with a subglobose, three-furrowed, coriaceous, valveless capsule. Gmelin. 11. *A. globosum* of Loureiro, with spike cauline, branched, and fruit globose, with an even surface; a native of the mountains of China and Cochinchina, and used in both countries medicinally, in disorders of the bowels, &c. 12. *A. hirsutum* of Loureiro, tsjane-kua of Rheed, paco-coatinga of Margrave and Piso, with spike cauline, simple, reclining, and fruit roundish and hirsute; or with stalks foliose and spiked, under-side of the leaves slightly hirsute, and large flowers of a yellowish white colour; a native of Cochinchina, Malabar, and of Brazil, in woods. La Marck suggests that this species is the *costus arabicus* of Linnæus. 13. *A. echinatum*, amomum 2. of Koenig, globba crispa viridis of Rumphius, flachlicher ingwer of W. with spike radical, sessile and subglobose, and capsules furrowed, echinated and globose;

globose; a native of the thick woods of India. 14. *A. repens* of Sunnerat, elettari 1, of Rheed, enfel of Herrn. kriechender Ingwer of W. with ramose decumbent scape, and lanceolate leaves, W. or procumbent scapes, racemose flowers in the base of the spathe, and leaves lanceolate and acuminate on both sides; a native of the mountains of Malabar. 15. *A. granum paradisi*, grains of paradise, elettari 2. of Rheed. paradis Ingwer of W. with scape branching and very short. This species is little known. It is a native of Guinea, and of the Islands of Ceylon and Madagascar, and was introduced into Kew Garden, in 1783, by Lee and Kennedy. See GRAINS of paradise. 16. *A. galanga*, MARANTA galanga of Linnæus, galanga of Rumphius, galangale, with cauline, erect spike, subtriflorous spathes, and capsule three-cornered-ovate, and smooth. The galangale has an horizontal, creeping root, composed of roundish, twisted, knotty tubers; culm perennial, upright, smooth and six feet high, leaves ovate, lanceolate, nerveless, smooth, upright, large, on embracing petioles; spike oblong; perianthium inferior tubulose, and bluntly trifid; corolla superior, yellowish white, segments oblong-ovate, concave, and nearly equal; nectary petal-shaped, roundish, emarginate, nearly equal to the segments of the corolla; filament linear, thick, grooved longitudinally, longer than the corolla; anther oblong, bifid, embracing a style longer than itself; stigma thickish, emarginate; seeds roundish; the smell of the whole plant is aromatic, and it has a biting taste. Linnæus has made the galangale a species of maranta, but Professor Martyn observes, that the corolla is not ringent, nor five-cleft, nor has two segments spreading, but all the segments, which are three in number, are nearly the same in size and figure. It is properly a species of amomum, as Bergius has made it. It is a native of China and Cochinchina, and is cultivated in both countries. The root and seeds are used there medicinally. See GALANGALE. 17. *A. arboreum* of Loureiro, with stem arboreous and calycine fruit. This is a tree about 10 feet in height, with many twisted, spreading branches. It has scarcely any taste or smell, and its use is unknown; the wood is very light, and not even fit for the fire; a native of the island of Sumatra, in a wood, on the eastern coast. 18. *A. curcuma* of Jacquin, with a scape, having loose spathes from the centre of the leaves. The limb of the corolla is sixfid. Gmelin. See CURCUMA. 19. *A. globba* of Koenig, and Rumphius, with stalks solitary, very short scapes, ovated spathes, and leaves alternate, petiolated, bifary, oblong and acuminate. Gmelin. 20. *A. littorale* of Koenig, with very short squamose scapes, ovated spathes, very numerous stalks, and leaves nodding at the apices. Gmelin. 21. *A. Koenigii*, with short scapes, cordated spathes, and leaves elongated at the apex and twisted. Gmelin. 22. *A. uliginosum* of Koenig, with scapes erect-curved, ovated spathes, single flowers, with double bractes, and sessile leaves. Gmelin. 23. *A. spurium* of Koenig, with solitary scaly scapes, ovated spikes, imbricated bractes, and leaves subpetiolated and oblong. Gmelin. 24. *A. scyphiferum* of Koenig, with spikes sessile, erect and oblong, imbricated bractes and sessile leaves. Gmelin. 25. *A. leonurus* of Koenig, with short scapes, erect and oblong spikes, adpressed bractes, and petiolated leaves. 26. *A. nigrum* of Gaertner, with a berry ovate-globose and single-celled, the base of the corolla funnel-shaped and coronated. Gmelin. Of the several species above-enumerated, the 11th, 2^d, 4th, 7th, 8th, 9th, 11th, 12th, 15th, 16th, 17th, are mentioned and described by Professor Martyn.

As to their propagation and culture, he observes, that they are tender, and require a warm stove to preserve them in this country. They are easily propagated by parting their roots, which should be done in the Spring, before they put

out new shoots. In parting the roots, they must not be divided into small pieces, especially if they are designed to have flowers, nor should they be planted in very large pots. They thrive best in a light rich earth, such as that of the kitchen garden; and with this the pots should be filled within two inches of the top, and the roots should be placed in the middle of the pots, with their crowns upwards, and the pots should then be filled with the same earth; they should then be plunged into a hot-bed of tanner's bark, and sparingly watered, till their stalks appear above ground, when they will admit of more moisture, especially in the Summer months; but in Autumn the waterings must not be frequent nor plentiful, and during Winter very sparing. The pots must constantly remain plunged in the tan-bed; for if they are taken out and placed on shelves in the stove, their fibres often shrink, and thus their roots decay. By this management these plants have greatly multiplied, and the common ginger has produced roots, weighing five or six ounces; but the others have been near a pound weight.

In the West Indies the ginger thrives best in a rich cool soil; in a more clayey soil the root shrinks less in scalding. The land laid out for the culture of it is first well cleared and hoed, and then slightly trenched, and planted in March or April; it flowers about September; and when the stalks are wholly withered, the roots are fit to be taken up, which is generally done in January and February. Browne cited by Martyn.

AMOMUM. See ALPINIA, COSTUS, MYRTUS, and SISON.

AMOMUM *Curcuma*. See CURCUMA.

AMOMUM *Plinii*. See SOLANUM.

AMOMUM, in the *Materia Medica*, a small and rich aromatic fruit, growing in bunches like grapes, valued highly for its medicinal virtues. It is commonly classed among the *seeds*.

The commentators on Pliny and Dioscorides, have never been able to agree upon the ancient amomum; the generality of them seek it in fruits different from our's. Some will have the rose of Jericho pass for it.—F. Camelli is positive he has discovered the real amomum of Dioscorides, and that it is the *tugus* or *birao*, or *caropi*, growing in the Philippine islands; the grains or berries whereof are worn by the natives about their necks; both on account of their agreeable odour, and of their supposed virtue in preserving from infection, curing the sting of the scolopendra, &c. Phil. Trans. N^o 248.

Scaliger is confident, that the amomum of the ancients was not a fruit, but the wood itself, which bore some resemblance to a bunch of grapes, and was particularly used in embalming of bodies, and hence, says he, the term MUMMY was given to the bodies of Egyptians, embalmed with it. On this account, likewise, all medicines and unguents used in the embalming and preserving of dead bodies, were called *amonia*.

The ancient amomum was of divers kinds; but the Armenian was most esteemed. It was a heater, drier, and astringent; used as a narcotic to appease pain, cure poisonous bites, inflammation of the eyes, &c.

The true amomum of the ancients resembles the muscat grape, and grows like it, in clusters; it is about the bigness of a large chich-pea, or middling grape, round, membranous, and divided into three cells, which contain several brown angular seeds; the fruit, on being opened, appears to contain three of them. Ten or 12 of these capsules stand together, without pedicles, upon a woody stalk, about an inch long; each single capsule is surrounded with six leaves, set in form of a star; and the part of the stalk, void of fruit, is clothed with leafy scales; of a very strong aromatic taste and smell; the taste is warm and pungent, approaching to that of camphor, and the smell is quick, penetrating,

and fragrant, resembling that of lavender, but more agreeable. In distillation they yield a large portion of a subtile essential oil; the hulks gave the same kind of flavours in a lower degree. These seeds have long been a stranger to this country.

This fruit was brought from the East Indies; and makes part of the composition of Venice treacle: but the seeds of the *amomum vulgare* have been used instead of it; and cloves have been also employed as a succedaneum to it.

The modern *amomum*, used in the shops, under the denomination of *amomum vulgare*, or *amomum officinarum*, appears to be the seed of the *sison* or *sumum* of the ancients, answering to what in English we call bastard-stone parsley.

It is esteemed a powerful diuretic, and good in nephritic cases. It is also commended as an aperient in general, and prescribed in obstructions of the liver and spleen, and in suppressions of the menses. The people in some parts of England bruise the seeds, and give them in warm ale, in colics; but those of caraway, or anise, are better. Lewis. See *Sison*.

AMONA, in *Geography*, a river on the coast of Guiana, west of Arwacas bay, is deep and navigable far into the country, and capable of containing a large fleet. It falls into the ocean about N. lat. 6°, and W. long. 55° 50'.

AMONA, a river of Italy, which runs into the Adriatic, about three miles south of the Po.

AMONOOSUCK, the Indian name of two rivers of America, in New Hampshire; the one called Upper Amonoosuck, rises near the north end of the White hills, runs northerly about 15 miles to a carrying place of about three miles to Amarisoggin river, thence it pursues the direction of south-west and west nearly 18 miles, and discharges itself into the Connecticut at Northumberland, near the Upper Coos; the other, called Great or Lower Amonoosuck, rises on the west side of the White Mountains, and falls into the Connecticut just above the town of Haverhill, in Lower Coos, by a mouth 100 yards wide. About two miles from its mouth it receives Wild Amonoosuck, 40 yards wide, from Franconia and Lincoln mountains. This last river is subject to very sudden and impetuous floods.

AMONTONS, WILLIAM, in *Biography*, an ingenious experimental philosopher, was the son of a lawyer, who removed from Normandy to Paris, and born in 1663. In very early life he was seized with a deafness, which deprived him in a great degree of the pleasures of social intercourse, and led him, for his relief and amusement, to apply with peculiar attention to the study of geometry and mechanics. From these studies he derived so much satisfaction, that he ceased to regret his defect of hearing as an evil, and declined, it is said, seeking any remedy. He also acquired the arts of designing, land-surveying, and building; and extended his researches to the sublime laws by which the universe is governed. He likewise directed particular attention to the nature and construction of barometers, thermometers, and hygrometers; and in 1687 he presented a new hygroscope to the royal academy of sciences, which was very much approved. In 1695 he published a book, in French, entitled, "Observations and Experiments concerning the Construction of a new Hour-glass, and concerning Barometers, Thermometers, and Hygrometers." To the royal academy, of which he was chosen a member in 1699, he read his "New Theory of Friction," by which he has admirably elucidated an important part of mechanics. He also discovered a method of conveying intelligence to a great distance, in a short interval of time, by means of signals, from one person to another, placed at the greatest intervals from which they could be seen with telescopes; somewhat in the manner of our modern telegraphs. He had

a happy talent in devising and executing experiments; and he communicated a great number of dissertations on the various subjects of air, action of fire, barometers, thermometers, hygrometers, friction, machines, heat, cold, rarefaction, pumps, &c. to the royal academy, which are contained in the volumes of its memoirs, for 1696, 1699, 1702, 1703, 1704, and 1705. His character for integrity, modesty and candour, was no less distinguished than his philosophical genius. His elogy, by M. Fontenelle, is printed in the volume of the Memoirs of the Academy for 1705. In October 1705, an inflammation of the bowels occasioned his death at the age of only 42 years. Gen. Dict.

AMOOD, in *Geography*, a town of Hindoostan, in the country of Guzerat, 51 miles north of Sæurat, and 58 south of Ahmedabad.

AMoor. See AMUR.

AMOPHILA, in *Entomology*, a name proposed by the Rev. Mr. Kirby for a new genus of hymenopterous insects, in the Transactions of the Linnæan Society, vol. iv. The species of this genus are *vulgaris*, *hirsuta*, *affinis*, and *argentea*; the two first are described insects, *vulgaris* being *sphex fabulosa* of Linn. and *Donov. Brit. Inf. and hirsuta*, *sphex arenaria* of Linn. and *Fabr.* The two others belong to the genus *sphexes* in the Linnæan arrangement by Gmelin also. See *Sphex*.

The essential character of Mr. Kirby's new genus *AMOPHILA* is, beak conic, inflexed, concealing a bifid, retractile, tubular tongue. Jaws forcipated, three teeth at the tip; antennæ filiform: either sex, with about fourteen articulations; eyes oval; wings flat; sting pungent, and concealed within the abdomen. The Linnæan character of the *sphex* genus is not strictly applicable to those insects Mr. Kirby has selected for his new genus, nor to many other exotic species; for the mouth of the Linnæan *sphexes* has no tongue. Gmelin has corrected this error by dividing the genus into families, the first has no tongue, and the second is furnished with one.

AMOR, in *Entomology*, a species of *HESPERIA* in the Fabrician system. Wings three-tailed, brown; beneath the disk variegated with white, black and yellow, and a golden marginal streak on the posterior wings. Fabricius. This is truly a *PAPILIO* of the *plebeii rurales* family in the Linnæan arrangement. It is the *papilio triopus* of Cramer, and inhabits the East Indies.

AMORA, in *Geography*, a town of Asia, in the Arabian Irac, situate on the Tigris, 120 miles south-east of Bagdad.

AMORÆANS, from אַמְרַי, *disit*, in *Literary History*, a sect or order of *gemaric* doctors, or commentators on the Jerusalem Talmud.

The word is otherwise written *amorai*, and *amoraitæ*, *amoraim*. The amoræans are also called, by Scaliger, *sophista*; by Alting, *γυμολογοι*, or *speakers of sentences*; by Bartoloccius, *dicentes*, or *disceptantes*, because they conferred and disputed together in a scholastic manner.

The amoræans succeeded the *miscenic* doctors. They subsisted 250 years; and were succeeded by the *seburæans*.

AMORBACH, in *Geography*, a town of Germany, in the circle of the Lower Rhine, 12 miles north-east of Heidelberg.

AMORDI, AMARDI, or AMARBI, in *Ancient Geography*, a people of Scythia, according to Pliny.

AMORE, in *Ichthyology*, the name of a tribe of fishes in Marcgrave's Hist. of Brazil, of which he describes three species. 1. The *amore pizuma*. 2. The *amore guacu*. And, 3. The *amore tinga*.

The *amore pizuma*, or *Gobijs pisonis*, in Gmelin's Linnæan system, has a very broad head, and a very large mouth, but has no teeth. Its body is oblong, and its back and sides are of a dusky iron colour. Its belly,

belly, which is protuberant, is white. Its skin is soft; and it has seven fins, besides the tail, which is rounded, at the end. Its flesh is firm and well-tasted.

The *amore guacu* is like the former, of an oblong figure; but it grows to six inches in length. Its head is thick, its gills large, and its mouth is furnished with small teeth. Its eyes are small, their pupil black, and the iris yellow. It has seven fins, besides the tail, which is long, and rounded at the end. This species is covered with somewhat larger scales, and is of a rusty iron colour, but somewhat paler on the belly than on any other parts.

The *amore tinga* is of the same shape with the former, but is much smaller, and is covered with whitish scales all over, but spotted with brown spots. Its tail is brown, and waved with different degrees of that colour. All the three species are eaten, but the first is esteemed the best. They are caught about the American shores.

AMOREVOLI, ANGELO, in *Biography*, a celebrated tenor singer in the serious opera, was a native of Venice. In 1740 he was the principal tenor in the king of Poland's famous opera at Dresden under the direction of his then maestro di Capella, Haffe. In 1742 he arrived in England with Monticella at the beginning of lord Middlesex's regency, and remained here 2 or 3 seasons. He surpassed in taste and expression all the tenor-singers of his time. He died in 1782.

AMORGO, in *Geography*, an island of the Archipelago north-west of Stampalia, which, in the time of Pliny (see H. N. lib. iv. c. 12.), bore the same name of Amorgos, or Amorgus: more anciently it was called Hypera, and Patage, or Plataga; and, according to Steph. Byz. Paucala, Pŷchia, and Carceŷia, containing three principal towns, viz. Arceŷinos, Minoë, and Ægiale. This island is not quite so large as Stampalia; its shores are less winding, and it has fewer capes and points, and of course fewer retreats to navigators. There are none along its eastern coast, which is very steep, and on its western shore there are not more than two tolerably commodious harbours or havens; the one to the north, is called *Porto Sant' Anna*, and the other to the south, which is the best, is denominated *Porto Vathi*. The inhabitants of Amorgo were formerly friends to the sciences and fine arts; but they are now devoted to ignorance and superstition. In the country, which gave birth to Simonides, the famous Greek poet, are now to be found no others than papas and caloyers, without genius and without knowledge, and distinguished merely by their credulity. They show, in a small chapel, a vase, which they affirm to be a certain oracle, and which the ignorant consult, in order to ascertain the issue of a voyage or enterprise: the vase full of water is a sign of success, but if it be almost empty, it announces ill fortune. The three ancient towns, Arceŷinos, Minoë, and Ægiale, are so completely destroyed, that their site is doubtful; and there remains only a little town, or village, built on an eminence, and monasteries, where miracles are the occupation and the principal revenue of the monks or caloyers, who inhabit them. High mountains, and naked and steep rocks, occupy some parts of the island, and in other parts it presents fertile plains and vallies. The abundance of its wines, oil, corn, and fruits, was renowned; and though it still subsists, in a less considerable degree, it has to surmount the obstacles and difficulties of a bad administration. A few districts are still well cultivated, and yield rich harvests; olive trees furnish a tolerably large quantity of oil, in proportion to the extent of the territory; figs are good and common; and the corn is of an excellent quality. That species of large grape with oval seeds, and a succulent and perfumed pulp, called by the Greeks *ox-eye*, and in France *raisin d' Alexandrie*, here becomes of a considerable size and

very delicious. Agriculture retains, in some degree, its ancient prosperity; but the arts, as well as the sciences that direct them, are extinct. At Amorgos are no longer fabricated those rich silks, which, under the name of *amorgis*, were in great request, both on account of the fineness of their tissue, and of the beauty of the colour with which they were dyed. The inhabitants, nevertheless, still apply themselves to dyeing; and they know how to give to their linen cloths a red colour with archil, a species of lichen which not only clothes the rocks of Amorgos, but also grows on those of several other islands of the Archipelago. Amorgos is distinguished by the mildness and affability of its inhabitants, and by the beauty of its women, who, attached to ancient habits, disguise themselves by the peculiarity of their dresses. In this respect they resemble those of NILO, and ARGENTIERA; with this difference, that the women of Amorgos pass a shawl, or large yellow handkerchief, made of fine wool, over the forehead and the lower part of the face, twill it round the head in the form of a turban, tie it behind, and suffer a long end of it to hang down the back. To this island criminals were formerly banished; and hither Tiberius exiled Vibius Senecus.

South of the island of Amorgos, and at the distance of about three leagues, is seen an uninhabited islet, which is called *Amorgo Poulo*, or *little Amorgo*. Between the same island and that of NAXIA, or to the west of the former, are other islets equally uncultivated and uninhabited, some of which, covered with lentisks (*lentiscus vulgaris* of Tournefort) small cypress-leaved cedars (*cedrus baccifera*, folio cupressi, &c. of Tournefort) and other wild plants, serve for the feeding of the flocks which are kept on them; while the others, which consist of steep masses of rocks, delitute of all verdure, are the abode of a multitude of birds of prey. Sonnini's Travels in Greece, &c. c. xiv. p. 173—180.

AMORIS POMUM, in *Botany*. See SOLANUM.

AMORITES, in *Ancient Geography and History*, were a people descended from Amorrhæus (according to the Septuagint) Hamori (אֲמֹרִי, according to the Hebrew) or the Emorite (in our version), the fourth son of Canaan, (Gen. x. 16.) who first occupied the mountains lying west of the Dead Sea. They also extend themselves to the east of the same sea, between the brooks Jabbok and Arnon, from whence they expelled the Ammonites and Moabites. This conquest of Sihon, king of the Amorites, is celebrated by the most ancient poem extant. Numb. xxi. 27—30. Numb. xiii. 29, 30. Joshua, v. 1. Judges xi. 19, &c.

When Moses sent messengers to Sihon, entreating a free passage through his country, he rejected his request; and marched out against him; but sustained a total overthrow at Jaazer, and lost his whole dominion. Og likewise, king of Bashan, who espoused the cause of Sihon, and attempted to stop the progress of Moses and his people, was vanquished, and fell in battle; and his whole kingdom was transferred to the Israelites. This conquest of the Amorites happened, A. D. 2553, ante Christ. 1451. The prophet Amos (ch. ii. 9.) representing their gigantic stature and valour, compares their height to the cedar, and their strength to the oak. The lands possessed by the Amorites on this side Jordan were given to the tribe of Judah, and those which they had enjoyed beyond Jordan to the tribes of Reuben and Gad. In Scripture, the name Amorite is often used for the Canaanites in general.

AMORIUM, a city of Asia Minor, which some authors place in Phrygia, but it was afterwards comprised in Galatia. It was in the territory of the Tolitobii, on the river Sangarius. After the 6th century it became an episcopal see, and at length the metropolis of the new Galatia. Michael,

Amorium, the father of Theophilus, the emperor of Constantinople, was a native of Amorium; and this original seat of the imperial life was adorned with many privileges and immunities; nor was Constantinople itself of much greater value in the estimation of the sovereign and his court. Amorium gives denomination to a war which subsisted between the emperor Theophilus and the Caliph Motassem, A. D. 838; when the emperor penetrated into Syria, besieged the obscure town of Sozopetra, the birth-place of the Caliph, took it, levelled it with the ground, and marked or mutilated the Syrian prisoners with ignominious cruelty. In revenge of this injury, Motassem prepared to attack Amorium. The name of Amorium was inscribed on the shields of the Saracens, and their three armies were united under the walls of the city. Although the wisest counsellors on this occasion proposed to evacuate the city, to remove the inhabitants, and to abandon the deserted buildings to the resentment of the barbarians, Theophilus determined to defend, in a siege and battle, the country of his ancestors. The Greeks, in a previous engagement, were repulsed and vanquished; and the emperor vainly hoped, after this defeat, to deprecate the fate of Amorium. But the inexorable Caliph rejected with contempt his prayers and promises, and detained the Roman ambassadors to be the witnesses of his great revenge. The vigorous assaults of fifty-five days were encountered by a faithful governor, a veteran garrison, and a desperate people; and the Saracens must have raised the siege, if a domestic traitor had not pointed out the weakest part of the wall, which was decorated with the statues of a lion and a bull. The vow of Motassem was accomplished with unrelenting rigour; nevertheless in the siege of Amorium above 70,000 Moslems had perished, and their loss had been revenged by the slaughter of 30,000 Christians, and the sufferings of an equal number of captives, who were treated as the most atrocious criminals. The Caliph's forces being distressed for want of water, in their return to his new palace of Samaria, in the vicinity of Bagdad, the Christian prisoners rose upon some of them and murdered them; by which action the Caliph was so much exasperated, that he put to death 6000 of the Greeks who had been principally concerned in that commotion. On the bridge of the river Lamus in Cilicia, one day's journey westward of Tarsus, 4460 Moslems, 800 women and children, and 100 confederates, were exchanged for an equal number of Greeks. They passed each other in the middle of the bridge, and when they reached their respective friends, they shouted *Allah acbar* and *Kyrie eleison*. Many of the prisoners of Amorium were probably among them; but in the same year (A. Heg. 231.) the most illustrious of them, the 42 martyrs, were beheaded by the Caliph's orders. Gibbon's Hist. vol. x. p. 67, &c.

The medals of Amorium were bronze, gold, and silver; and Greek medals were struck in this city in honour of Trajan, Caracalla, Geta, and Vespasian.

AMOROSO. in Ital. Mus. implies tenderly; with affection and supplication.

AMORPHA, formed of *a priv.* and *μορφη form*, in Botany, a genus of the *diadelphia decandria* class and order, and of the natural order of *papilionaceæ* or *leguminosæ*; its characters are, that the *calyx* is a perianthium one-leaved, tubulous, cylindrical and turbinate, mouth erect, five-toothed, obtuse, the two upper teeth larger than the others; permanent; the *corolla* composed of one ovate, concave petal, scarcely larger than the calyx, erect, inserted into the calyx, between the two larger and upper teeth, and placed at the upper side of it; the *filamina* have filaments very slightly united at the base, erect, unequal in length, longer than the corolla, anthers simple; the *pisillum*

has a roundish germ, subulate style, of the length of the filament, and simple stigma; the *pericarpium* is a legume, lunulate, reflex, larger than the calyx, compressed, more reflex at the tip, one-celled, and tubercled; the *seeds* are two, oblong kidney-shaped. There is one species, *viz.* *A. frutescens*, bastard indigo. La Murel mentions a variety, *β.* *A. foliis pellucido-punctatis leguminibus glabriscaulis*, which he supposes may be a constant species.

This shrub grows naturally in Carolina, where formerly the inhabitants made a coarse sort of indigo from the young shoots, which occasioned their giving it the title of *bastard indigo*. It rises with many irregular stems to the height of twelve or fourteen feet, with very long winged leaves, in shape like those of the common ACACIA. At the extremity of the same year's shoots, the flowers are produced in long slender spikes, which are very small, and of a deep purple colour; appearing in the beginning of July. After the flowers are past, the germen turns to a sharp pod, having two kidney-shaped seeds; but these do not ripen in England. They were sent to England by Mark Catesby in 1724.

This shrub, which Thunberg observed in the great island of Nipon belonging to Japan, is become very common in all the gardens and nurseries near London, where it is propagated as a flowering shrub, for the ornament of the shrubbery. It is generally propagated by seed, sent annually to England from different parts of America, which arrive in February, and are sown in a light soil; they may be also cultivated by laying down the young branches, which in one year will make good roots, and may then be taken off and planted, either in the nursery, or the places where they are designed to remain.

AMORTIZATION, or AMORTISEMENT, in Law, the act of turning lands into mortmain, *i. e.* of alienating or transferring them to some corporation, guild, or fraternity, and their successors.

The word is formed of the French *amortir*, to *extinguish*. See EXTINGUISHMENT.

The term is also used for the licence or privilege which the king or superior lord grants, to enable such a corporation, &c. thus to receive lands in MORTMAIN; which otherwise they cannot do.—There is always supposed to be some fine or acknowledgment paid to the king, or the lord, in consideration hereof; to make them satisfaction for several incidental dues and profits, which would have fallen to them in the common way, which are hereby cut off.

This practice was borrowed from the ancient *Lex Papiria*, whereby it was forbidden to consecrate any land to religious uses without the consent of the people. Cic. pro Dom. 49.

AMORY, THOMAS, in Biography, a presbyterian divine, was born at Taunton in Somersetshire, A. D. 1700. Having finished his preparatory classical education under Mr. Chadwick, he commenced his academical studies at a respectable seminary for the education of dissenting ministers, under the tuition of Mr. Stephen James and Mr. Henry Grove. In 1722 he began to officiate as an occasional preacher; and removed to London to pursue a course of philosophy under Mr. John Eames, an eminent tutor among the dissenters. In 1725 he became the colleague of his uncle Mr. Grove, in the department of classics and natural philosophy; and at the same time he preached occasionally at Hull Bishops, and some other places in the neighbourhood of Taunton. From the year 1730 to the year 1759 he was pastor of a congregation at Taunton; and in 1738 he succeeded Mr. Grove, and became sole tutor of the academy under his care. As a minister and a tutor he was much respected and esteemed, on account of his

his comprehensive knowledge, unimpeachable integrity, and exemplary moderation. In 1759 he removed to London, to the great regret of his friends at Taunton, but principally with a view of more advantageously settling his family; and accepted an invitation to become colleague with Dr. Chandler, and afternoon preacher to the congregation at the Old Jewry; and at the death of Dr. Chandler in 1766, he was chosen to succeed him as joint-pastor with Mr. White. His real merit entitled him to a greater degree of popularity than he experienced in the metropolis; but though his talents were not of such a nature as to command a numerous audience, he was distinguished by the respectful and cordial attachment of many judicious and liberal friends. In 1768 he received the honour of the degree of doctor in divinity from the university of Edinburgh; an honour to which his talents, learning, and character justly entitled him. He was morning preacher to the congregation at Newington Green, in connection with the celebrated Dr. Price, of whom a particular account will be given in the course of this work; and he was also appointed one of the six preachers at the Merchants' Lecture at Salter's Hall, and a trustee of the charities of the late Dr. Daniel Williams, whose library contains a valuable collection of books, and is, under its present regulations, daily improving both in extent and utility. He retained his faculties, and his capacity of usefulness, to his death, which happened in the year 1774. His funeral sermon was preached by his intimate friend Dr. Flexman; who, after an intercourse of more than 40 years, declared, "that their friendship had never once been interrupted by distaste, or darkened by a frown." Dr. Amory left a widow and six children, one of whom was for many years an eminent banker of the city of London. The subject of this brief memoir, as the writer of it can testify from personal acquaintance, was distinguished by a sound judgment and amiable disposition. His piety and benevolence were eminent features of his character, and were so intimately blended as to command respect and esteem from all who knew him. In the more advanced period of his life, his studies were chiefly directed to subjects of theology and ethics. His sentiments, with respect to some of the principal disputed points, coincided very nearly with those of Dr. Samuel Clarke; his mode of preaching was judicious, practical, and devotional: and though he did not attract the multitude, he approved himself to the sensible and candid. His sermons have been collected in two volumes, *viz.* first, "Eighteen sermons on various Subjects," printed in 1758, 8vo.; the second, "Twenty-two sermons on several Subjects," in 1765, 8vo. Dr. Amory also published "A Dialogue on Devotion, after the manner of Xenophon," with "A Translation of the Conversation of Socrates on the Being and Providence of God," 8vo. 1733 and 1746; "A Family Prayer-Book," 1763; "An Account of the Life and Writings of Mr. Grove," prefixed to his posthumous works, 1740; "Mr. Grove's System of Moral Philosophy, revised and enlarged," 1749; "Memoirs of the Life of Dr. Benson," prefixed to his history of the life of Christ, and "Memoirs of Dr. Samuel Chandler," prefixed to his four volumes of Sermons. He was also the author of "A letter to a Friend," on the study of religion, published in the memoirs of literature, 1731: of "Some poetical pieces, sacred and moral;" and of a volume of posthumous sermons, published after his death. Flexman's funeral Sermon. Biog. Brit.

AMOS, in *Scripture Biography*, the third of the twelve minor prophets, in the order of the Hebrew Scriptures, but the second in the order of time, was the son of a shepherd, and, though probably born in the territories of Israel, re-

tired to Tekoah, a village of the tribe of Judah, about five miles from Jerusalem. Under Uzziah, and Azariah, king of Judah, whose reign commenced in the 27th year of Jeroboam II. king of Israel, B. C. 804, Amos began to prophesy; but the precise year is not ascertained. Archbishop Newcome dates the commencement of his prophetic office in the year 823, B. C.; but Falconer in his "Chronological Tables," assigns it to the year 805, B. C. His first predictions were delivered at Bethel, whence he was driven back to his own country by Amaziah, the high priest of Bethel, who accused him before Jeroboam. These occur in the seventh chapter; and the others were pronounced in Tekoah, whither he retired after his banishment from Bethel. His two first chapters contain his prophecies against Damascus, the Philistines, Tyrians, Edomites, Ammonites, Moabites, Judah, and Israel; and the evils he threatened refer to the invasions of Salmanazer, Tiglath-pileser, Sennacherib, and Nebuchadnezzar. Amos also foretold the calamities that would befall the kingdom of Israel, after the death of Jeroboam II. who was then living; the death of king Zechariah; the invasion of Israel by Phul and Tiglath-pileser, kings of Assyria; the captivity of the ten tribes, and their subsequent restoration. He remonstrates against the prevalent iniquities of Israel, their effeminacy, avarice, and obduracy with regard to the poor, the splendor of their buildings and the delicacy of their tables. He reproves the children of Israel for their pilgrimages to Bethel, Dan, Gilgal, and Beerseba, which were the most famous at that period, and for swearing by the gods of these places. The style of Amos is characterized by its simplicity, and by frequent allusions to pastoral life. Jerom (*Proem. Comment. in Amos.*) referring to the words of St. Paul, calls him rude in speech, but not in knowledge. Succeeding writers, on the authority of this ancient father, have represented him, as if he were quite rude, and destitute of all the beauties of composition. But a very competent judge has given a very different opinion. Let any one, says bishop Lowth, (*Prælectiones de Sacra Poesi. præl. xxi. p. 286.*) who has sufficient discernment and candour for forming a just judgment, from the writings of this prophet and not from the man, turn over the volume of his predictions, and he will pronounce, that our shepherd is "not a whit behind the chief of the prophets." 2 Cor. xi. 5. He will think, that as in sublimity and magnificence he is almost equal to the greatest, so in splendor of diction and elegance of expression, he is scarcely inferior to any. The same celestial spirit indeed, as this excellent prelate adds, actuated Isaiah and Daniel in the court, and Amos in the sheep-folds; selecting always such interpreters of the divine will, as were best adapted to the occasion, and sometimes "from the mouths of babes and sucklings perfecting praise;" occasionally displaying the natural eloquence of some, and occasionally making others eloquent.

The time and manner of the death of Amos are unknown. It appears (2 Chron. xxvi. 22. Is. i. 1.) that Amos was the father of the prophet Isaiah, and of the family of Ashur, (1 Chron. ii. 24.) from whose son Tekoah derived its name. Calmet and many others, however, have thought that Amos the father of Isaiah, was a different person, and of royal rank; but there seems to be no sufficient reason for this opinion.

AMOS, or AMUS, in *Ancient Geography*, a city of Asia Minor, in Caria. Steph. Byz.

AMOTAPE, in *Geography*, a town of South America in Peru, situated near Tumbes, on the coast of the South Sea. The adjacent country, watered by a fine river, is highly improved,

AMOU, a town of France in the department of Landes, and chief place of a canton in the district of St. Sever, five leagues south of Tartas, and four leagues and an half south-west of S. Sever. The town contains 1731 and the canton 11,245 inhabitants; the territory includes 182½ kilometres and 17 communes.

AMOVING, in *Law*, the act of removing or expelling another from his place, office, or the like. We have statutes for removing papists out of London and Westminster, and ten miles round the same. 1 W. and M. cap. 9.

AMOVING a *guardian, a sereno castelo*. See *CUSTODE*.

AMOUR, WILLIAM DE ST. in *Biography*, a French ecclesiastic of the 13th century, was born at St. Amour, in Franche Comte, and became canon of Beauvais, and doctor of the Sorbonne. He distinguished himself in the controversy of 1228 between the Dominicans and the university of Paris. The Dominicans claimed two professorships in the university: but the secular doctors resisted their claim, and passed a law, restricting persons of the regular order to one. The dispute was referred to the court of Rome, and Amour was an able and zealous advocate in favour of the university. In a book "Concerning the perils of the last Times," he attacked the whole mendicant tribe, and attempted to prove, that the prophecy of St. Paul relating to the perilous times (2 Tim. iii. 1.) was fulfilled in the establishment of the friars of this order. The book was condemned by pope Alexander IV. and the author was sentenced to perpetual exile from France. Upon the accession of Clement IV. Amour returned to Paris, and in a collection and enlargement of his works, renewed his attack on the character and conduct of the mendicants. By favour of this pope, who respected his talents and merit, he remained unmolested till his death in 1272. The mendicants reproached him as a heretic; but by the doctors of the Sorbonne he was highly respected. His spirited remonstrances against idleness and hypocrisy, masked by humility and sanctity, justify the panegyric of Mosheim, who represents him as "a man of true genius worthy to have lived in better times, and to have adorned a more enlightened age." His works were published at Paris, in 4to. by Cordeus in 1632; but the editor concealed his name, and the place of publication under the enigmatical inscription, "Constantiæ ad insignem bonæ fidei apud alitophilos." Cave, H. L. tom. ii. p. 302. Mosheim. Eccl. Hist. vol. iii. p. 202.

AMOUSHE, RASEL, in *Geography*, the Battal of Edrisi, a large cape formed by the mountains of the Shenooah, on that part of the sea-coast of Africa, called the Western Province or the province of Tlemsan. At a small distance is the Mers 'el Amoushe, or port of Amoushe, which is very safe in westerly winds. Shaw's Travels, p. 20.

AMOY, an island on the south-west coast of China, where the English East India Company had once a factory, since removed to Canton. It lies west from the nearest part of Formosa island, somewhat more than 3° of longitude, and from the south-east point of China, which is east from Macao, about north north-east. The port of Amoy has been described as one of the most convenient and safe harbours in India, on account of the road which is formed by that island between it and the continent, and it is so deep and large as to be capable of receiving 1000 ships of the greatest size, and of protecting them from every wind. N. lat. 24° 30'. E. long. 118° 45'.

AMPARES, a jurisdiction under the archbishop of Plata, eastward of that city, in the empire of Peru; abounding in grain and cattle.

AMPANA, in *Botany*, a name given in the Hortus Malabaricus to a genus of plants, since described by Linnæus, under the name of BORASSUS.

AMPASA, in *Geography*, a small country and kingdom

of Africa, on the coast of Zanguebar, between the line and Melinda. It has a capital of the same name; the king is a vassal of the Portuguese. S. lat. 1° 30'. E. long. 60° 20'.

AMPATRES, a people of Madagascar, on the southern coast between Carembouli and Careanelli, who live in the middle of forests and subsist by plunder.

AMPELIS, in *Botany*, the *vine*. See *VINE*.

AMPELLIS, in *Ornithology*, a genus of birds in the Linnæan system, belonging to the order *passeres*. The characters of this genus are, bill straight, convex; upper mandible longell, and somewhat incurvated; each mandible notched. Nostrils covered with bristles. Tongue acute, cartilaginous, bifid. Linn. & Gmel. Dr. Latham's generic character of ampelis is somewhat different, viz. bill straight, convex, bending towards the point; near the end of the upper mandible a small notch. Nostrils hid in the bristles. Middle toe connected to the outer at the base.

Gmelin describes eleven species of this genus, *carnifex, carunculata, cyana, coccinea, coinga, cristata, garulus, maynana, pompadora, terfa, and variegata*, which see.

AMPELITES, or candle-coal. See *COAL*.

AMPELLA, or AMPULIA, in *Geography*, a city and seaport in Guatimalagulf, in that of Mexico, 350 miles south-east of the city of Guatimala, which carries on a brisk trade in cochineal, cocoa, hides, indigo, &c.

AMPELONA, in *Ancient Geography*, a colony of Milesians, in Arabia Felix, transported thither by the Persians.

AMPELOS, or AMPELUS, a promontory of the island of Samos, to the west of that island, and opposite to that of Icaria. *Ampelos* was also a promontory of Macedonia, according to Ptolemy, in the country called Parania; probably near the mouth of the Axios. *Ampelos* was also a town of Italy, in Liguria.

AMPELUSIA, called also *Cape Cottes*, is a promontory of Mauritania Tingitana, not far from Tingis, mentioned by Strabo, Ptolemy, and Mela. It is denominated by the moderns *Cape Spartel*. From Mela and Bochart it appears that Cottes and Ampelusia were, in the Phenician and Greek languages, terms of the same meaning, and that they were deduced from the grapes with which that country abounded. *Ampelusia* was also a town and promontory of Crete, now called *Capo Sagro*. It was also a town and promontory of Macedonia, near the gulf of St. Anne, and now called *Capo Canifiro*.

AMPERES, from *αμπερι*, on both sides, in *Antiquity*, a kind of vessels, wherein each mariner wrought two oars at the same time, one with the right hand, and the other with his left, answering to our *scullers*. This is also called *amphericum*.

AMPEZO, in *Geography*, a town of Germany, in the country of Tyrol, ceded to Austria by the Venetians in 1505, 12 miles south of Bruneck.

AMPHANÆ, in *Ancient Geography*, a town of Greece in the Doride. Stephan. Byz.

AMPHANÆ is also a strong place of Thessaly, probably the same as that called by Scylax *Amphineum*.

AMPHAXITIS, a district of Macedonia, in which was situated the city of Thessalonica.

AMPHIA, or AMPHEA, a town of Messenia, mentioned by Steph. Byz. and also by Pausanias, who places it in the vicinity of Laconia.

AMPHIARAUS, in *Mythology*, a famous prophet among the Pagans, was the son of Oicleus, and great grandson of Melampus, to whom part of the kingdom of Argos was assigned, as a recompence for some public service. In consequence of this division of Argos, Adrastus, its king, was overpowered by the party of Amphiarus, and obliged to abandon the kingdom. Amphiarus afterwards married Eriphyle, the filler of Adrastus, and he was restored to the throne. During the preparations for the expedition against Thebes,

Thebes, Amphiarus, who possessed the faculty of divination, was forewarned that he should lose his life in this war, and therefore he concealed himself, in order to avoid engaging in it; but his wife, being prevailed upon by a present of a gold chain, discovered the place where he was hidden, so that he was obliged to accompany the other princes, who marched against Thebes. The expedition was fatal to him; for the chariot being split asunder by a thunder-bolt, both he and his chariot were swallowed up in the gulf. Pindar and Apollodorus mention this circumstance; and they ascribe the event to the kind interposition of Jupiter, who thus prevented the dishonour of his being killed by Periclymenes, by whom he was pursued. After his death he was ranked among the gods, temples were dedicated to him, and his oracle, as well as the sports that were instituted in honour of him, were very famous. He was believed to excel chiefly in divining by dreams, and is said to have been the first who divined by fire. He left in charge with his children to put his wife to death, as soon as they were able to do it. Apollodorus reckons him among the Argonauts.

AMPHIARTHROSIS, in *Anatomy*, a neutral or dubious kind of articulation; distinguished from the *diarthrosis*, in that it has no conspicuous motion; and from the *synarthrosis*, in its not being without sensible motion.

The word is derived from *αμφι*, both, and *αρθρωσις*, articulation, the *amphiarthrosis* being compounded of both the other sorts.

Mr. Winslow cites, as specimens of this kind of articulation, the conjunction of the first rib and sternum by a single cartilage, and the connections of the vertebræ with each other by the intervertebral substance.

AMPHIBALUS, in *Biography*, a monk of Caerleon, who is said by some to have been a Roman by birth, and to have made his escape into Britain in the time of Dioclesian's persecution. Others say, that he was born at Caerleon, the metropolis of Wales, and that he was rector of the university of Cambridge. He was the preceptor of St. Alban, and instrumental in his conversion; and was crowned with martyrdom.

AMPHIBALLUS, **AMPHIBALLUM**, or **AMPHIMALLUM**, among *Middle Age Writers*, denoted a large mantle, such as were the surplices of the monks, which encompassed the body on both sides, (whence it was called *amphibalus*, from *αμφι* and *βαλλων*, and *amphimallum*, from *αμφι* and *μαλλος*, a fleece of wool) and which was not barely thrown over the shoulders, like the toga. See **CARACALLA**.

AMPHIBIA, in *Zoology*, the third class of animals in the Linnæan system, including those which possess, in a certain degree, the power of respiration, and are thereby enabled to live either in water or upon land. The characters assigned by early naturalists to animals of this class are, in many respects, exceptionable; and those of Linnæus are liable to some objections, as the writings of Count de Cuvier, Mr. Schneider, M. Schœpff, and Dr. Shaw have proved in various instances; yet the Linnæan arrangement is still adopted with some amendments, and upon the whole this is most advisable, till this obscure tribe of creatures is more completely ascertained.

The amphibia are either naked, or defended by an external covering; the skins of such as are denominated naked, are in general marked by soft, pulstular warts; the coverings of the others are either horny shields, coriaceous integuments, or scales. The lungs of the amphibia differ materially from those of other animals in the two preceding classes, mammalia and aves, consisting in general of a pair of large bladders or membranaceous receptacles, variously subdivided in different species; and the heart is furnished with one ventricle only. Some late physiologists have, however,

ventured to assert, that the hearts of the amphibia are in reality double, or furnished with two ventricles, with a free or immediate communication between them.

In the Linnæan arrangement, the amphibia were formerly divided into four orders, *viz.* 1. *Reptilia pedata*, reptiles; amphibious animals, which breathe through the mouth by lungs only, and are furnished with four feet. 2. *Serpentes apodes*, serpents; amphibious animals, breathing through the mouth by means of lungs only, and destitute of feet, fins, and ears. 3. *Meantes*, gliders; animals breathing by means of gills and lungs, and furnished with arms and claws; and 4. *Nantes pinnati*, breathing fishes, which respire arbitrarily by means of gills and lungs, and of which the fin-rays are cartilaginous. The amphibia class in the last edition of the *Systema Naturæ*, by Gmelin, consists of two orders, *reptilia pedata*, and *serpentes apodes*, which are sufficiently distinguished, the reptiles being furnished with feet, and the serpents destitute of them. The *Nantes pinnati*, or breathing fishes, being placed in their natural order amongst the **PISCES**, under the title **CHONDROPTERYGII**; that order now includes the genera *Acipenser*, *Chimera*, *Squalus*, *Raja*, and *Petromyzon*: the *Lophius* genus is separated from the others, and arranged amongst the **PISCES BRANCHIOSTEGI**.

The order of reptiles is divided into four genera, *viz.* **TESTUDO**, **DRACO**, **LACERTA**, and **RANA**; and that of serpents into six genera, *viz.* **CROTALUS**, **BOA**, **COLUBER**, **ANGUIS**, **AMPHISBÆNA**, and **CAECILIA**. This is the arrangement of Gmelin, to which must be added the genus **SIREN**; a kind of reptile, whose ambiguity of character induced Linnæus to form the new order **MEANTES**. Linn. *Moen. Acad.* vii. p. 311.—et *Syst. Nat.* vol. i. part ii. Ad-dend. Gmelin has assigned this creature to the first genus of fishes, **MURÆNA**; and Dr. Shaw restores it to the *Siren* genus in the appendix to his *Zoology*, vol. iii. p. 2, **Amp.** It may still be doubted whether this, and two other known kinds of the same family be complete animals, or only the larvæ or first state of some lacertæ, as Dr. Shaw very judiciously suggests.

The new genera of serpents, not noticed by Gmelin, are **ACROCHORDUS**, **HYDRUS**, and **LANGAVA**.

Of the amphibia in general, it has been observed, that their bones are more cartilaginous than those of other animals, and many possess the singular power of reproducing their tails, legs, and other parts when destroyed; in this respect bearing some affinity to many marine insects, as crabs, lobsters, &c. Some are viviparous, or hatch the young ones in the eggs, internally, and bring them forth alive; others deposit their eggs, and hatch them afterwards. The eggs differ also, some are covered with a calcareous shell, others with a tough skin resembling parchment, and many, as in the **RANA** genus, are perfectly gelatinous. Numbers undergo a metamorphosis, or cast their skins; all are extremely tenacious of life, and, from their peculiar internal structure, capable of enduring a longer abstinence than any of the larger tribes of animals. During Winter many remain in a state of torpidity.

Very few of the reptile tribes are venomous; and of the serpents not more than one-fifth are known as such. Those creatures, therefore, which are naked, and without limbs, seem perfectly defenceless, but nature has armed the rest, not only with the means of defence, but the most dreadful means of aggression; and the poisonous serpents, collectively, are undoubtedly the most hideous and formidable tribe of creatures known. The poisonous kinds are furnished with tubular fangs, which are perfectly distinct from the teeth, and situated upon a glandular vesicle on the anterior part of the upper jaw: in this vesicle the fatal fluid is secreted, and when the wound is inflicted, discharges its contents into the fangs, through which it oozes by the linear apertures on one

side, and effects its malignant purpose. The jaws of the serpents are extremely dilatable, and the œsophagus so lax, that they can swallow, without mastication, an animal twice or thrice as large as the neck.

AMPHIBIA, *Anatomy of.* See *CLASSIFICATION of Animals* and *REPTILES in Comparative Anatomy.*

AMPHIBIOUS, in *Natural History*, a term applied to those animals which live both on land and in water. In technical language it is confined to those creatures which conflate the *amphibia* of naturalists; in a general sense it includes the otter, seal, beaver, and various other animals of the mammalia tribe, who live on land, and occasionally go into the water in search of prey; the word being derived from ἀμφί, *utroque, both ways*, and βίωσις, *vita, life*; as living in both places.

Dr. Parsons, in an ingenious paper published in the Transactions of the Royal Society, after considering the economy of amphibious creatures, divides them into two sections; *first*, such as enjoy their chief functions on land, but occasionally go into the water; and *secondly*, such as chiefly inhabit the water, but occasionally go ashore. Of the first kind he considers the phocæ, otters, beavers, and some kinds of rats, frogs, and lizards, the hippopotamus and testudo; all which, he observes, are capable of remaining for an inconsiderable length of time in the water, to collect their prey, but are compelled to rise to the surface to breathe, and return ashore to perform most of the ordinary functions of nature. The last are but of two kinds, eels, or water-serpents, or snakes of every kind.

Most of the amphibious kinds, the castor, or beaver, and otter excepted, have peculiar provisions in their structure to fit them for such a various way of living; particularly in the heart, lungs, foramen ovale, &c.

In some of these animals, as the frog, tortoise, &c. the heart has but one cavity, with an artery to receive the blood coming out of it, and a vein to convey it thither. In others, the foramen ovale appear to be still open for the passage of the blood from the *vena cava* to the *arteria venosa*, without the help of breathing.

In the *castor*, dissected by the academists of Paris, though the foramen was not found actually open, yet the marks of it appeared; and the cause of its closure might be well enough accounted for, from the animal's having been detained a good while from the water, by which the part, having been in disuse, closed up. In the *OTTER* the case is different; there is no appearance of any thing like a *foramen*; and hence the necessity the creature is under of rising, from time to time above water, to take in air. Phil. Trans. N^o 124.

The structure of the feet of the *castor* pronounces it amphibious at first sight, the fore feet being formed like those of terrestrial animals, who hold their food in their feet, *e. gr.* squirrels, while the hind-feet are fashioned after the manner of river fowl, with webs or membranes between the toes, as the goose, duck, &c.

Some kinds of insects, in different stages of life, may be said to be amphibious. The dytiscus, notonecta, and nepa, undergo all their transformations from the egg, larva, and pupa state in the water, and though furnished in the perfect state with wings, and consequently destined to live on land, seldom quit the water except in the evenings, and constantly return to it when their flight is over: these are called water-beetles. Others remain in the water only in the first stages of their transformations, and would perish in their native element from the moment they become winged creatures, as is frequently observed of the libellula, ephemera, and phryganea, and some of the muscæ and culices; amongst the latter the transformation of the species *pipiens*, common gnat, is a

striking instance of this remark. In fact many of those creatures, which are mistaken for aquatic worms, are no other than the larva, or pupas of *amphibious* insects, which their parents deposit in the egg state, on the leaves and stalks of plants, &c. that grow in the water; and those hatching insensibly, remain in the watertill they become winged insects.

Birds are in a much less degree amphibious. Amongst those which are denominated water-fowl, from almost constantly living on that element, the divers and corvorants are capable of remaining a considerable length of time under water; perhaps nearly as long as the otter. Swallows would certainly well deserve the title of amphibious, if, as some have imagined, they passed the whole winter in a state of torpidity under water.

Dr. Hunter observes, that, properly speaking, there are no *amphibious* animals; for that fish cannot live long without air, though much longer than men.

The term *amphibious* has been sometimes also extended to men, who have the faculty of living a long while under water. We have various instances of such amphibious men: the divers employed in the pearl-fisheries possess this faculty in an eminent degree. Credulity itself is staggered at the story of a Calabrian monk, who once offered the king of Spain to continue twice twenty-four hours under water; but it is believed that a Sicilian, named the *Fisch-Colas*, by a long habitude from his youth, had so accustom'd himself to live in water, that his nature seem'd to be quite altered, so that he liv'd rather after the manner of a fish than a man. Kircher.

AMPHICEIDA, in *Entomology*, a species of PAPHILIO. Wings, indented, above brown, with a connected disk of cinereous waved with brown; beneath, tips grey with black lunated marks. Fab. et Gmel.—This species inhabits Africa. Above, the base and margins are entirely brown; cinereous in the middle, with two large undulated waves, the first brown, the second black. Beneath, pale at the base with rufous spots, and undulated lines, apex grey with a row of lunated black marks. Fabricius.

AMPHIBLESTROIDES, in *Anatomy*, a tunic or coat of the eye, more usually call *RETINA*.

The word is compounded of ἀμφί, *σπινθηρον, net*, and εἶδος, *form*; on account of its net-like texture; whence the Latins also call it *retiformis*.

AMPHIBOLOGY, from ἀμφίβολος, *ambiguous*, and λόγος, *discourse*, or **AMPHIBOLIA**, in *Grammar*, a fault in language, whereby it is rendered obscure, and liable to be understood in a double sense.

Amphibology is chiefly used in respect of a phrase, as equivocal is in respect of a word.

Of this kind was that answer which Pyrrhus received, from the oracle, “Aio te, *Æacida, Romanos vincere posse;*” where the amphibology consists in this, that the words “te,” and “Romanos,” may either of them precede, or either of them follow the words “posse vincere,” indifferently. See *ORACLE*.

The English language usually speaks in a more natural manner, and is not capable of any amphibologies of this kind; nor is it so liable to amphibologies in the articles as the French, and most other modern tongues.

AMPHIBRACHYS, the name of a foot in the *Latin* and *Greek poetry*; consisting of three syllables, the first and last whereof are short, and that in the middle long.

The word comes from ἀμφί, *circum*, and βραχυς, *brevis*, *q. d.* a foot short at both ends, and long in the middle.—Among the Ancients it is also called *ianius*, and *scolius*. Diom. iii. p. 475.

Such are the words ἀμάρτ, ἀβίρτ, πατρώνυς, Ομπερς, &c.
AMPHICLEA, in *Ancient Geography*, a city of Phocis in Græcia Propria, mentioned by Steph. Byz. and called by Pausanias

Pausanias and Herodotus, Amphicæa. The Amphictyons, in their decree against the Phocian cities, gave it the name of Ophitea. This city belonged to the Dryopes, and was pleasantly situated to the left of the river Cephissus, and near Mount Oeta. Amphiclea was famous for a temple and oracle of Bacchus, who, under the character of a physician, pretended to cure all diseased persons that applied to him.

AMPHICTYONS, AMPHICTYONES, in *Antiquity*, the deputies of the cities and people of Greece, who represented their respective nations in a general assembly; having a full power to concert, resolve, and appoint what they should think fit for the service of the common cause. They were empowered to employ not only the rigour of the laws, in the execution of their decrees, but even to raise troops, if it were necessary, to compel such as rebelled to submit to them.

The amphictyones very much resemble the states-general of the united Provinces; or rather, what in Germany they call the DIET of the empire.

Some suppose the word ἀμφικτιῶνες, to be formed of ἀμφί, *about*, and κτιῶν, or κτιζῶν, because the inhabitants of the country round about met here in council. Others, with more probability, derived it from *Amphictyon*, son of Deucalion, whom they suppose to have been the founder of this assembly; though others will have Acrisius, king of the Argives, to have been the first who gave a form and laws to this body.

Androtion, in his History of Attica, quoted by Pausanias, (lib. ii. c. 8. p. 815.) informs us, that from the most early period, deputies from the neighbouring states assembled at Delphi, and that these deputies were, *from that circumstance*, called Amphictyons; and that consequently, in process of time, this became the prevailing denomination of that high court. According to this account, whether the author's etymology be right or not, this was an original institution, deriving its establishment from neither Amphictyon nor Acrisius, but existing from the earliest ages of antiquity. Dr. Doig (Edinb. Transf. vol. iii. p. 150, &c.) suggests, that as the Hellenes had founded the oracle of Dodona, they probably established also the oracle of Delphi. This oracle acquired great reputation, and the concourse of the people to the temple of Delphi was immense. Its situation was well chosen for this purpose; and it lay nearly in the centre of those petty tribes that afterwards formed the Amphictyonic association. These states, becoming jealous of the growing power of the oriental colonies, determined to hold their conventions at Delphi, in order to concert measures for their mutual security. Both its sanctity and central situation pointed it out as a place well adapted to this purpose. The Hellenic prefects of the temple, superior to the Barbarians in political sagacity, would strain every nerve to promote a scheme calculated to advance both their honour and their interest. Common sacrifices have, in all ages, been deemed an infallible sign of amity and concord, and also the means of maintaining and promoting them. The confederates would therefore assemble at Delphi to offer sacrifices, and to perform other religious rites on behalf of all the associated tribes. These would serve as an indissoluble bond of their federal union. The confederates, on this occasion, would present liberal donations, and thus greatly enrich the treasury of the temple. It must therefore occur to them, that it would conduce both to their honour and interest to appoint officers for superintending this treasure. Strabo says expressly, (lib. ix. p. 420.) that this was one of the ends of the institution of the Amphictyons. Hence it appears, that the original Amphictyons were a kind of wardens of the temple of Delphi, elected by the suffrage of the confederated tribes. In process of time another class of persons would naturally be added to the former, whose province it should be to watch

over the civil interests of the confederacy. These two classes of superintendents gradually coalesced into one, and both united in discharging the sacred and civil functions annexed to their office. A tribunal, thus formed and established, reflects immortal honour upon Greece, and demonstrates the wisdom and sagacity of the Hellenes, to whom its institution is ascribed by the ingenious writer above cited, and which he connects, in its origin, with the oracular establishment at Delphi. Had its members been always animated by a spirit of peace, of justice, and of good order, it would have rendered itself for ever respectable; and the associated states under its direction would never have become a prey to the despised Macedonians.

This council was principally instituted with a view of uniting in the sacred band of amity the several people of Greece that were admitted into it, and of obliging them, by that union, to undertake the defence of each other, and to be mutually vigilant for the tranquillity and happiness of the country. The Amphictyons were also created to be the protectors of the oracle of Delphos, and the guardians of the wealth of that temple; and also to adjudge the differences that might arise between the Delphians and those who came to consult that oracle.

Authors give different accounts of the number of the Amphictyons, as well as the states who were entitled to have their representatives in this council; according to Strabo, Harpocration, and Suidas, they were twelve, from their first institution, sent by the following cities and states; the Ionians, Dorians, Perrhæbians, Bœotians, Magnesians, Achæans, Phthians, Melians, Dolopians, Ænians, Delphians, and Phocæans. Æschines only reckons eleven, instead of the Achæans, Ænians, Delphians, and Dolopians, he only gives these three, the Thessalians, Cæans, and Locrians. Lastly, Pausanias's list only contains ten Amphictyons; namely, the Ionians, Dolopians, Thessalians, Ænians, Magnesians, Melians, Phthians, Dorians, Phocæans, and Locrians.

In the time of Philip of Macedon, the Phocæans were excluded the alliance, for having plundered the Delphian temple, and the Lacedæmonians were admitted into their place; but the Phocæans, sixty-eight years after, having behaved gallantly against Brennus and his Gauls, were restored to their seat in the amphictyonic council. Under Augustus, the city Nicopolis was admitted into the body; and, to make room for it, the Magnesians, Melians, Phthians, and Ænians, who till then had distinct voices, were ordered to be numbered with the Thessalians, and to have only one common representative. Strabo speaks as if this council were extinct in the times of Augustus and Tiberius; but Pausanias, who lived many years after, under Antoninus Pius, assures us it remained entire in his time, and that the number of amphictyons was then thirty.

When the Lacedæmonians, in order to pass any decrees which they thought proper, were for excluding the Thessalians, Argives, and Thebans, Themistocles (Plut. in Them. p. 122.), in the speech he made to the Amphictyons for preventing that design from taking effect, seems to insinuate that there were at that time 31 cities which had the right of sending deputies to this council.

The members were of two kinds; each city sending two deputies, under different denominations, one called *εξουνημων*, whose business seems to have been more immediately to inspect what related to sacrifices and ceremonies of religion; the other *πυλαγορας*, charged with hearing and deciding causes and differences between private persons. Both had an equal right to deliberate and vote, in all that related to the common interests of Greece. The former was elected by lot; the latter by plurality of voices.

Though

Though the amphictyons were first instituted at Thermopylæ, M. De Valois (Mem. Acad. Belles Lettres, vol. iii.) maintains, that their first place of residence was at Delphi, where, for some ages, the tranquillity of the times found them no other employment than that of being, if we may so call it, church-wardens of the temple of Apollo. In after times the approach of armies frequently drove them to Thermopylæ, were they took their station, to be nearer at hand to oppose the progress of enemies, and to order timely succour to the cities in danger. When they assembled at Thermopylæ, they held their sessions in the temple of Ceres, near the mouth of the river Asopus. Their ordinary residence, however, was at Delphi.

Here they decided all public differences and disputes between any of the cities of Greece; but before they entered on business, they jointly sacrificed an ox, cut into small pieces, as a symbol of their union. Their determinations were received with the greatest veneration, and even held sacred and inviolable.

The Amphictyons, at their admittance, took a solemn oath, the form of which is preserved by Æschines (in Orat. *περι παραπηρηθῆαι*) never to dwell any city of their right of deputation, never to avert its running waters; and if any attempt of this kind were made by others, to make mortal war against him; more particularly, in case of any attempt to rob the temple of any of its ornaments, that they would employ hands, feet, tongue, their whole power, to revenge it. This oath was enforced by terrible imprecations against such as should violate it; *e. gr.* May they meet all the vengeance of Apollo, Diana, Latona, and Minerva, &c. their soil produce no fruit, their wives bring forth nothing but monsters, &c. lose all suits at law, be conquered in war, have their houses demolished, and be themselves and their children put to the sword!

The stated times of their meetings were Spring and Autumn; the Spring meeting was called *Εαρινή Πυθιαία*, that in Autumn *Μετοπηρινή*. On extraordinary occasions, however, they met at any time of the year, or even continued sitting all the year round.

Philip of Macedon usurped the right of presiding in the assembly of the Amphictyons, and of first consulting the oracle, which was called *Προμαντεία*. From this time the authority of the Amphictyons began to decline; for he claimed the right of presiding even by proxy both in this assembly and in the Pythian games, of which games the Amphictyons were judges and agonothetæ in virtue of their office. This Demosthenes reproaches him with in the third Philippic: "When he does not deign," says he, "to honour us with his presence, he sends his *slaves* to preside over us." After the conquest of Greece by the Macedonians, this tribunal was deprived of its lustre. Augustus, too, made some new regulations with respect to the states, which were invested with the privilege of sending deputies to this council. Though it subsisted in the days of Paulanias, as we have already mentioned, it was probably of so little repute in the age of Strabo, that this geographer looked upon it as in a manner annihilated.

The Romans never thought fit to suppress the meeting of the Amphictyons. Potter's Arch. Græc. Mem. Acad. Infer. tom. iv. & vii. Æschin. Orat.

AMPHIDOLI, in *Ancient Geography*, a small town of Triphylia, in the territory of Elis. Steph. Byz.

AMPHIDROMIA, from *αμφί*, and *δρομος*; a *course*, in *Antiquity*, a feast celebrated the fifth day after the birth of a child, called *dies lustricus*, or *LUSTRAL day*.

AMPHIDRYON, in *Ecclesiastical Writers*, a veil or curtain usually drawn before the door of the BEMA in ancient churches.

AMPHIGENIA, in *Ancient Geography*, a town mentioned by Homer, situate in the southern part of Elis, comprehended by the ancients in Messenia. In this town was a temple of Latona; and the inhabitants pretended that their town had given birth to Apollo.

AMPHILOCHI, a town of Spain, in Gallicia, founded by Tencer after his return from the Trojan war; and so called, as Strabo informs us, from the name of Amphilochus, one of his companions, now *Orense*.

AMPHILOCHIA, a country of Acarnania, situate to the east of the Ambracian gulf, and watered by the river Inachus. The inhabitants were called Amphilochi, deriving their name from Amphilochus, the son of Amphiaræus, and their capital was denominated *Argos Amphilochicum*.

AMPHILOCHIS, a place of Peloponnesus, in Elis. Steph. Byz.

AMPHILOCHIUS, in *Biography*, a native of Cappadocia, was appointed bishop of Iconium, the chief city of Lycania, about the year 370 or 374. In his youth he studied rhetoric and practised law; but afterwards devoting himself to a religious life, he retired, with his friends Basil and Gregory Nazianzen, into a solitary part of Cappadocia, called Ozizaia. After he was advanced to the episcopal office, he assisted at the first general council of Constantinople in 381, and also at subsequent councils in 385 and in 394, soon after which he died. His eminence may be inferred from the several letters written to him by Basil, and from the character given of him by Theodoret and others. Jerom joins him with Basil, Gregory, and others, who were equally skilful in secular learning, and in the sacred scriptures. Of his zeal against the Ariæus we have ample testimony from Theodoret Eccl. Hist. (lib. v. c. 16.) and Sozomen (lib. vii. c. 6.) and others. Being very desirous of prohibiting Arian assemblies, and finding the emperor Theodosius remiss in complying with his wishes, he contrived to accomplish his object by the following expedient. Whilst he was in the palace with other bishops, who were paying their respects to Theodosius, he took no notice of his son Arcadius, who had lately been declared Augustus. When the emperor reminded him of this seeming disrespect, and recommended his son to notice, Amphilochius apologized by saying, that he had paid respect to him, and that was sufficient. The emperor was displeas'd, and said, that a slight put upon his son was an indignity to himself. You are angry, replied Amphilochius, with those who slight your son, and cannot endure it: persuade yourself then, that the God of the whole world is offended with those who blaspheme his only begotten Son, and hates them as ungrateful to their Saviour and Benefactor. This mode of reasoning produced the wished-for effect; and Theodosius soon afterwards, A. D. 385. forbade the assemblies of heretics. But this was not the only way in which the bishop manifested his dislike of heretics; and the law procured for this purpose, and dated July 25, A. D. 383, is still extant, which prohibits all heretics, particularly Eunomians, Arians, and Macedonians, to hold any assemblies of worship in public places, or private houses. He wrote a book against the Massalians, and another work, entitled, "Of Pseudepigraphal Books composed by Heretics," both which are lost. "If they had been extant," says Dr. Lardner, "I suppose they would have given me more satisfaction than the law of Theodosius, which affords not any argument:" nor was Amphilochius to be commended, adds this mild and candid writer, for procuring that law. A few fragments are preserved of Amphilochius's book "Concerning the Divinity of the Holy Spirit," and his "Synodic Epistle," edited by Cotelerius. The Iambic poem, addressed to Seleucus, and containing a catalogue of the books of the Old and New Testament, has been ascribed by many to Amphilochius;

philochius; but others are of opinion, that it was written by Gregory Nazianzen; they allege that the style is his, and that we have no information that Amphilocheus ever wrote verse. The poem, however, affords evidence of the care and caution of the ancient Christians concerning books received as a part of sacred scripture, and the rule of their faith. This and other pieces, probably spurious ones, were published by Combefis, at Paris, in 1644. Cave H. L. tom. 1. p. 251. Lardner's Works, vol. iv. p. 411, &c.

AMPHILOCHUS, in *History and Mythology*, the son of Amphiarus, was no less famous as a diviner than his father. He accompanied Alcmeon, his brother, to the second war of Thebes, and assisted in killing his mother, according to his father's injunction. After the war of Thebes, he assisted Mopsus in building the city of Mallus in Cilicia, where he had an oracle; and it is said that he had an altar erected to him at Athens. The answers of the oracle at Mallus were given by dreams; those who came to consult it slept a night in the temple, and that night's dream was the answer required. Dion Cassius mentions a picture done by order of Sextus Condidianus, and representing the answer he received from the oracle in the reign of the emperor Commodus. In the time of Lucian (in *Philopseud.* tom. ii. p. 500.) Amphilocheus was regarded by the superstitious and credulous multitude as a great prophet, and his oracle maintained its reputation. Gen. Dict.

AMPHIMACER, a foot in the *Ancient Poetry*, consisting of three syllables; the first and last whereof are long, and that in the middle short.

The word is derived from the Greek *αμφι*, *circum*, and *μακρος*, *longus*, by reason both extremes are long.

Such are the words *omnium, castitas, γρημύτων*, &c. This foot is also called *creticus*, and sometimes *fescenarius*.

AMPHIMACUS, in *Entomology*, a species of PAPILO. Wings indented, above, black, with a broad bar of shining blue in the middle. Beneath, anterior wings white, posterior wings cinereous. Inhabits India. The body is black. Wings above entirely black except the interrupted bright blue that extends towards the anterior margin. Beneath, from the base to the middle of the wings white, variegated with brown marks: on the posterior pair behind a large white spot, and seven small brown ones, with whitish pupils and circles along the posterior margin. Fabricius.

AMPHIMALIA, or AMPHIMALLIUM, in *Ancient Geography*, was a town of the island of Crete, according to Pliny, situate on the north side, and east of Sydonia. It gave name to a gulf in the same part of the island. Sonnini supposes, that the Amphimale of the ancients is that narrow gulf, which is now formed by Cape Melecca on the west part, and Cape Trepani on the east, and which penetrates nearly two leagues inland. Others place the harbour of Amphimale between Suda and Retimo, where is only a bad haven. Sonnini's Travels in Greece, p. 243. Olivier (Travels, vol. ii. p. 198.) informs us, that the ruins of Amphimale are still visible half a league from the sea to the south of the gulf of Suda. These ruins are now the foundation of a Greek monastery.

AMPHIMALLUM, from *αμφι* and *μαλλος*, a fleece of wool, in *Ecclesiastical Writers*, *amphibalum* and *amphibolum*, from *αμφι* and *βαλλω*. See AMPHIBALLUS.

AMPHIMASCALOS, in *Antiquity*, a tunic or coat worn by the Greeks, with two short sleeves, so as to cover part of the arm to the elbow. In general the tunics of the men and women had not sleeves like these parts of modern dresses. The coats of freemen were *amphimaskaloi*, or had two sleeves; those of slaves only one, and were called

επειρομασκαλοι.

AMPHIMEDON, in *Entomology*, a species of PAPILO,

with wings uniformly brown, the anterior pair radiated with white: five connected red spots in the middle of the posterior pair, with white lunules. The body is large, brown; anterior part of the thorax variegated with three red lines. From Amboyna. Fabricius.

AMPHIMONE, a species of PHALÆNA, of the *Bombyx* family. Wings entire, pale ash-colour, with two black streaks, and a fulvous dot in the middle of the anterior pair. Described by Fabricius from a specimen in the cabinet of Sir Joseph Banks. Inhabits Terra del Fuego. The antennæ are greatly pectinated, body hairy, two yellowish lines on the thorax, abdomen with black belts, a single straight streak on the posterior wings beneath. Fabricius.

AMPHINOME, a species of PAPILO, with indented wings, above black, clouded with numerous blue marks: an oblique white bar across the anterior wings; beneath the lower wings radiated with red. A native of South America. Linnæus.

AMPHINOME, in *Mythology*, one of the 50 Nereide, according to Homer.

AMPHION, in *Entomology*, a species of HESPERIA. Wings entire, blue, margins black: beneath cinereous, with black ocellated spots; posterior wings, with red lunated marks, black points, and golden characters. A native of Germany. Fabricius.

AMPHION, in *Ancient History*, the twin brother of Zethus, was the son of Antiope, the greatest beauty of Greece, by Epopeus, king of Sicyon, or, as Homer says, by Jupiter. Having seized the crown of Thebes, in Bœotia, from Lague, the father of the unfortunate Oedipus, he called the metropolis of the Theban government, or at least the lower city, Thebes, in honour, as it is said, of Thebe, their aunt by the mother's side. Homer says, that to secure the crown which he had usurped, he inclosed the city of Thebes with a wall, fortified with seven gates, and a number of stately towers at a convenient distance from each other. Homer, however, does not say a word of the miraculous powers of Amphion's music, nor of his building the wall, as fable reports, by the sound of his lyre. Pausanias and Pliny concur in relating, that he acquired his musical reputation from his alliance with the family of Tantalus, whose daughter, Niobe, he had married: and both these authors say, that Amphion learned music in Lydia, and, bringing it from thence into Greece, was called the inventor of the Lydian mode. As to the effect of music in building the wall, we may observe, that he might probably captivate the people to carry on the work, by diverting them with the music of his harp, as well as persuade them by his eloquence, which contributed to induce them, though in a state of barbarity, to live sociably and harmoniously together. We learn from Horace (*Ars Poetica*, i. 391.) that Amphion, after the example of Horace, employed the united powers of music and philosophy in civilizing the Thebans.

“Silvestres homines facer interpretesque deorum
Cœdibus et victu sædo deterruit Orpheus;
Dictus ob hoc lenire tigres rabidosque leones.
Dictus et Amphion, Thebanæ conditor arcis,
Saxa movere sono testudinis, et prece blanda
Ducere quo vellet. Fuit hæc sapientia quondam,
Publica privatis fecernere, sacra profanis;
Concubitu prohibere vago; dare jura maritis;
Oppida moliri; leges incidere ligno;
Sic honor et nomen divinis vatibus atque
Carminibus venit.”

“The wood born race of men when Orpheus tam'd,
From acorns and from mutual blood reclaim'd,

'Tis priest divine was fabled to assuage
The tiger's fierceness, and the lion's rage.
'Thus rose the Theban wall; Amphion's lyre,
And soothing voice, the lit'ning stones inspire.
Poetic wisdom marked, with happy mean,
Public and private, sacred and profane;
The wand'ring joys of lawless love suppress'd;
With equal rites the bonds of Hymen blest'd;
Plann'd future towns, and instituted laws;
So verse became divine, and poets gained applause."

FRANCIS.

AMPHIPAGUS, in *Ancient Geography*, a promontory of the island of Coreyra, to the north west.

AMPHIPNEUMA, ἀμφίπνευμα, among *Ancient Physicians*, a great degree or species of difficult respiration.

AMPHIPOLES, from ἀμφί and πόλις, city, in *Antiquity*, archons, or chief magistrates of the city of Syracuse.

They were first established by Timoleon, in the 109th Olympiad, after his expulsion of Dionysius the Tyrant. They governed Syracuse for the space of three hundred years; and Diodorus Siculus assures us they subsisted even in his time.

AMPHIPOLIS, in *Ancient Geography*, a city of Macedonia or Thrace, which was an Athenian colony, on the river Strymon, which separated Macedonia from Thrace; but it is not certain on which side of the river it was situated. Pliny places it in Macedonia, but Scylax in Thrace. Thucydides (lib. iv. p. 320.) reconciles this difference of opinion by observing, that it was washed on two sides by the river Strymon, which was divided from its mouth into two channels, in the middle of which the city stood, whence its name Amphipolis. i. e. ἀμφί and πόλις; and on the side towards the sea there was a wall built from channel to channel. M. d'Anville gives another etymology of the name, and says, that it signifies a town belonging to two countries, viz. Macedonia and Thrace. The ancient name, according to Herodotus, (lib. vii. c. 114.) and Thucydides (ubi supra) was *Ἐνεσσοδοί*, or the *nine ways*; and it was called *Acra*, *Eion*, whence the Turks have formed *Jamboli*, *Myrica*, *Chrademna*, *Chrysofolis*, or *Chrisfolis*. The inhabitants were denominated *Amphipolitani*. Livy. It was founded thirty years after the defeat of the Persians in Greece; and Miltiades conducted a colony into it. Philip, king of Macedon, drove the Athenians from Amphipolis, and permitted the inhabitants to form a republic. The Athenians, however, always considered it as belonging to them; and Brasidas, the Lacedæmonian general, took it from them. Nevertheless, Philip recovered it, and promised to restore it to the Athenians; but when he became master of it, he obtained a surrender of it by a treaty of peace.

AMPHIPOLIS was also a town of Syria, on the Euphrates; its Syrian name was *Turmeda*. It was either founded by Seleucus, or enlarged and adorned by him; and he changed its ancient name. It is the same with the *Thapsacus* of Pliny.

AMPHIPPI, in *Antiquity*, those who practised riding on two horses, by jumping from one to the other.

The word is Greek, ἀμφίπποι; they are sometimes also called ἵππων, ἄγροι, and sometimes by corruption, ἀντπαι. The appellation was given to a sort of cavalry in the Grecian armies, who, for their conveniency, had two horses a piece, on which they rode by turns, leading the other.

AMPHIPRORÆ, from ἀμφί and προρæ, *prova*, were ships which had prows at both ends, that no time might be lost in turning them, and also on account of the rapidity of streams, and narrowness of channels.

AMPHIPROSTYLOS, or AMPHIPROSTYLE, in *An-*

cient Architecture, is characteristic of a particular kind of TEMPLE, which had a PORTICO of four columns, crowned with a PEDIMENT in front, and another of the same form in the back, front, or rear. The portico in front was denominated the PRONAOS, and that in the rear the POSTICIUM. The word is composed of ἀμφί both, *ἔρη before*, and *τυλός column*, and signifies "column in both fronts."

Vitruvius, in the first chapter of his third book, describes seven species of temples differing from each other in the number and arrangement of their columns, of which the amphiprostylos is the third. It is distinguished from the first and second species, by having columns in both its fronts, and from the peripteral and pseudo-peripteral kinds, by having only four columns in each front, and more especially by not having any on the flanks. It is remarked by Saumaïse that the Christians never made entrances in the rear of their temples with PORCHES or porticos, similar to those in the front, and for this reason the French have no word to express the posticum of the Latins, as distinguished from the pronaos, which they denominate the "*Porche*." The same remark is true with regard to the English, and probably to all other Christian nations.

AMPHISA, in *Ancient Geography*, a river of Greece in Messenia, which discharged itself into the Balyra, according to Pausanias, lib. iv. Messen. c. 23.

AMPHISO, in *Mythology*, one of the nymphs called Oceanides.

AMPHISBÆNA, in *Zoology*, the name of a genus of serpents in the Linnæan system, in some respects allied both to that of Anguis and Lacerta; like the Cæcilia it is destitute of scales, but its skin appears completely annulated, or marked with numerous circles that surround the body and tail. This is the Linnæan character of the genus, to which may be added that the body is equally smooth and cylindrical; and the tail obtuse, and scarcely to be distinguished from the head.

Gmelin enumerates five species of this genus, viz. *fuliginosa*, *varia*, *magnifica*, *flava*, and *alba*.

1. *Fuliginosa*. Rings of the body two hundred; of the tail thirty. This species is white, variegated with black or dark brown, and the head is without spots.

2. *Varia*. Variegated with white, black, chestnut and grey.

3. *Magnifica*. Variegated with purple, violet, and yellow; head yellowish, and a purplish streak over the eye.

4. *Flava*. Variegated with white and brown; head yellow.

5. *Alba*. Rings of the body two hundred and twenty-three; of the tail sixteen. The head of this is annulated on the fore-part, and narrowed into an obtuse snout. Found near ant-hills. Gmelin has relied chiefly on Seba in discriminating the characters of these species; yet it may be doubted whether that authority is sufficient. The number of annular rings round the body and tail, and which Linnæus considered as the best specific distinction, is only mentioned in two species, *fuliginosa* and *alba*; the characters of the others, being only taken from the variations in their colours, are not satisfactory. The five kinds mentioned by Gmelin are natives of America.

Dr. Shaw seems to have considered the three species, *varia*, *magnifica*, and *flava*, as varieties of *fuliginosa*; for he observes, that only two species of this genus, *amphisbæna*, have hitherto been discovered, viz. *alba* and *fuliginosa*. *A. alba* is from fifteen to eighteen inches, and sometimes two feet in length; the colour white, but sometimes inclining to pale yellow or brown; the head very short, the eyes very small; the mouth of moderate width, the teeth short, strong, not very sharply pointed, and constituting a single row of about fourteen or sixteen in each jaw; the tongue very large broad, thick, flattish, and bifid only at the tip, the surface of

the base appearing scaly. This is found in woods preying on insects, worms, &c. It is a harmless animal, but it is said, that on handling it for some time the skin becomes affected with a slight itching, accompanied by small pustules, owing to an acrimonious moisture exuding from the animal. *A. fuliginosa* is rarely so large as the preceding species, which it resembles in its manners, and is equally harmless. The Count de Ceppe observes, that above the vent is a row of small perforated papillæ, similar to those in many of the lizard tribe. The skin of the amphibæna is remarkably strong and tenacious, and of a smooth and glossy surface, and it is probable that they are enabled with great facility to perforate the ground somewhat in the manner of earth worms, in order to obtain occasional supplies of food. Dr. Shaw. Zool.

AMPHIBÆNA aquatica, a name given by Bertrutius, Albertus, Gesner, and other authors, to that long, slender worm, called by Aldrovandus and others, the *seta aquatica*, &c. This is the *Gordius aquaticus* of Linnæus. See *GORDIUS*.

AMPHISCII, formed from *αμφι*, *about*, and *σκια*, *shadow*, in *Geography* and *Astronomy*, the people who inhabit the torrid zone.

They are thus denominated, as having their *shadow* turned sometimes one way and sometimes another, *i. e.* at one time of the year to the north, and at another to the south.

AMPHISMILA, or *AMPHISMELA*, an anatomical knife, edged on both sides.

The word is formed from *αμφι*, *utrinque*, *on both sides*, and *σμίλη*, *knife*.

AMPHISSA, called by Herodotus *AMFICEA*, in *Antient Geography*, the chief city of the Ozolean Locrians, about 15 miles to the west of Delphi, situate on the river Evenus, and so called because it was surrounded by mountains, according to Steph. Byz. but Pausanias deduces the origin of the name from Amphissa, who had a monument erected to her honour in this place. On the summit of a hill near the town was a temple of Minerva, with her statue in bronze. The people of the country thought this was one of the spoils of Troy, but Pausanias represents it as an ancient Greek work. Amphissa was taken by the Phocians, and destroyed with the rest of the Phocian cities in the holy war; and when it was rebuilt, Pausanias says that it took the name of *Ophitea*, if the text has not been corrupted by his transcribers. *Amphissa* was also said to have been the name of a town of Magna Græcia, at the mouth of the Sagra, in the Farther Calabria, situate between Locri and Caulona, and now called *Rocella*; but some have doubted the existence of such a city.

AMPHITAPÆ, in *Antiquity*, a kind of carpets, or clothing, having a soft warm nap on each side.

AMPHITHEATRE, in *Architecture*, is an edifice of an elliptical form, consisting externally of two or more stories of open *ARCADES* with a number of interior *GALLERIES* and arched passages, sustaining and serving as communications to several ranges of seats, rising one over another round a spacious area, called the *ARENA*, on which the combats of wild beasts and other spectacles were exhibited.

The word is derived from *αμφι*, *around*, and *θεατρον*, *theatre*, so that amphitheatre signifies a place in which the spectators, ranged circuitously, saw equally well from every side. It was also called *visorium* by the Latins.

The history of amphitheatres, though it occupies no remote or extensive period of time, is interesting from its peculiar connection with the manners of the ancient world, and those which succeeded the establishment of the Christian religion; the rise and splendour of these edifices being occa-

sioned by the ferocious barbarity of the former, and their subsequent diffuse and ruin by the milder character of the latter. They are undoubtedly of Roman invention, in the latter ages of the republic; yet because the combats of *GLADIATORS* were, among other spectacles, exhibited on the *ARENA*, their origin has been ascribed to the *ETRURIANS*, with whom it is said they were sacred edifices set apart for such combats, and with them descended from that people to the Romans. "Religion," we are told, "in *ETRURIA* presided at these games, and elevated amphitheatres." An assertion that is certainly unfounded. Among the Etrurians gladiatory combats were exhibited at feasts as well as at funerals, and probably they were no otherwise religious institutions than as the occasion made them so, like the foot-races and other contests with which the ancients honoured the dead. In the earliest times they were presented before the funeral pile, or at the tomb of the deceased, and afterwards in the squares and open places of cities, as we learn from Vitruvius, who informs us that the Italians made the *INTERCOLUMNS* of their *FORUMS* more spacious than those of the Greeks, "because, by ancient custom, the shows of gladiators were usually given in the forum." This continued to be the practice of the Romans for upwards of 200 years after the introduction of those combats among them, from whence it may be inferred, that neither the Etrurians nor the Romans had any edifice like an amphitheatre till the period we have mentioned; and it is evident that such edifices were not so necessary for the exhibition of gladiatory combats, as to be religiously appropriated to them from time immemorial.

The Romans had an inordinate passion for spectacles of every kind, and especially for such as were sanguinary and terrible; a disposition which their rulers politically encouraged, as tending to preserve that unconquerable spirit which made them masters of the world. In the year of Rome 490, the first gladiatory combats were exhibited in that city not long after the successful termination of the Samnite war had extended the Roman dominion not only over Etruria, but the whole peninsula of Italy. And in the year 502 wild beasts were introduced among the public spectacles of Rome, by Lucius Metellus, who brought into the *CIRCUS* the elephants he had taken from the Carthaginians in Sicily. These two kinds of shows were so consonant to the taste of the Romans, that they were soon converted into engines of political influence, and the candidates for popular favour vied with each other, in exhibiting them with the greatest splendour and expence. Gladiators were trained to fight as to a profession, and hundreds of them were compelled to butcher one another in the forum, while every savage animal that could be procured from the forests of Africa or Asia was brought to parade in chains, or to be hunted in the circus.

In the time of Pompey and Cæsar the combats of beasts were given with a magnificence which we read of with astonishment, though far inferior to those presented by the emperors; and it is to these combats that we owe the invention of amphitheatres, as the name of *theatrum venatorium*, or *the theatre for hunting*, by which they were at first denominated, sufficiently proves. It was found that these spectacles could not be seen equally well from every part of such an extensive place as the circus, interrupted as the prospect was by the *ΜΕΤÆ*, and other buildings on the *ΣΠΙΝΑ*, nor could they be gazed on with the same ease and security as the combats of gladiators; for in the games given by Pompey the elephants made efforts to break down the barriers which confined them in the circus. These circumstances induced Cæsar, when not long after he entertained the people with

similar games, to remove the metes, and to surround the arena of the circus with a ditch, and probably suggested the expediency of constructing edifices, in which the people might enjoy their favourite diversions without interruption or danger. This purpose amphitheatres were peculiarly adapted to answer; and, being equally convenient for gladiatorial shows, they afterwards became the common THEATRE of both.

It is believed that the first building like an amphitheatre was formed of those curious machines constructed by Caius Curio, one of the partizans of Cæsar, for the games he presented at the funeral of his father. Curio caused two capacious theatres to be built of timber, in the usual semicircular form, and placed back to back, in which he amused the people for several days with theatrical diversions till noon; when the scenery was removed, and the two theatres, with an immense crowd of people in each, were wheeled round till they met, and formed an amphitheatre, in which gladiators contended on the area till evening. This information we have from the elder Pliny; who, although he applauds the invention, exclaims against the temerity of the man, who dared to place the governors of the world in such imminent danger. How this was accomplished we are not told, and how much the relation may have been exaggerated by Pliny, it is impossible to know, as the fact is not mentioned by any other writer; nor is it possible to determine whether this ingenious piece of machinery gave the first idea of an amphitheatre, or was itself suggested by some amphitheatre that had been previously constructed. Be this as it may, Julius Cæsar, a few years after, "erected a *hunting theatre* of timber, called indeed an *amphitheatre*, because the seats were placed round it without scenes," in which he exhibited both the combats of wild beasts and of gladiators. This edifice, from the words of Dio, above quoted, has a fair claim to be considered as one of the first fabrics of the kind.

From this time, during the reign of Augustus and the succeeding emperors down to Vespasian, many other amphitheatres of timber were erected in Rome and in the provinces; but not any of stone, except one by Statilius Taurus, in the time of the first-mentioned emperor, which does not appear to have been held in much estimation, as it was seldom used in the splendid spectacles subsequently exhibited; nor could it be entirely of stone, as it was destroyed by fire in the reign of Nero. These timber amphitheatres were sometimes only temporary structures, raised and taken down as occasion required, though some of them were fixed and embellished as permanent buildings. Augustus, whose policy induced him to encourage every public amusement that interested the people, is said to have constructed several. Caligula began one, but did not live to complete it. Nero, who delighted in gladiatorial combats, also erected an amphitheatre of timber, which was near a year in building. This is described by Tacitus as a sumptuous fabric, and capable of containing a great number of persons. In the time of Augustus, Herod of Judea built amphitheatres at Jerusalem and Cæsarea. In the reign of Tiberius a large one was erected at Fidenæ, a town in the vicinity of Rome, which suddenly fell while the games were exhibiting, when, according to Tacitus, upwards of 50,000 persons were either killed or dangerously hurt. There was another at Placentia, celebrated as the largest in Italy, which was burnt in the war between Vitellius and Otho.

Accidents like those at Fidenæ and Placentia, both in theatres and amphitheatres, had undoubtedly been frequent in Rome, as well as in the provinces, and turned the public attention to structures that were secure from conflagration, and of strength sufficient to sustain the multitudes by which

they were crowded. With regard to theatres an example had been given by Pompey, who first constructed a theatre of stone, and drew upon himself the censure of the satirists for thus luxuriously deviating from the simplicity of ancient practice. Statilius Taurus, as already mentioned, had also erected a stone amphitheatre, though it appears to have been of little consideration; and Augustus, who, as it is said, intended to have constructed one of more ample dimensions in the centre of Rome, on the very spot where the coliseum was afterwards erected, did not carry his design into execution. This was reserved for Vespasian and Titus; the former began the Flavian amphitheatre in his eighth consulate, which was completed by his son Titus, and is deservedly celebrated as a prodigy of building among the ancients. Martial is lavish in its praise, and Cassiodorus asserts, that the expence of it would have built a capital city. At the solemn games exhibited when this fabric was dedicated, 5000 wild beasts, according to Eutropius, and 9000, according to Dio, were destroyed on its arena. When the hunting was concluded, the arena was suddenly filled with water, in which aquatic animals were made to contend; and afterwards a sea-fight was exhibited representing a contest between the Corinthians and Coreyrians, whose wars are related by Thucydides. If Martial may be credited, people from every part of the world crowded to Rome to be present at these games. This stupendous pile has been, from time immemorial, called the Coliseum, according to some authors, from a colossal statue of Nero, which stood at a small distance from it; but more probably from its colossal size, when compared with other buildings.

The Flavian amphitheatre became the model of many others that were subsequently erected by the emperors, or by the people of different countries desirous of sharing in the diversions of the imperial city. Of these the most remarkable were at Capua and Verona in Italy, at Nîmes in Languedoc, at Pola in Istria, and Italica in Spain. The vestiges of others are said to be seen at Alba, a small city of Latium, and at Otricoli, a city of Umbria; the remains of one are found near the Garigliano, formerly the river Liris. At Puzzuoli some of the arches and cells of another are still existing. There are vestiges of one at the foot of Mount Cassino, near the house of Varro, and of one at Pœstum in Lucania; of others at Syracuse, Agrigentum, and Catania in Sicily; at Gortina and Gerapitna in Candia, and at Argos and Corinth in Greece. In France there was one at Arles, and one at Autun. The latter, it is said, consisted of four stories, like the coliseum. There are also vestiges of amphitheatres in Britain, near Sandwich in Kent, at Caerleon in Monmouthshire, (the *Ifea Silurum* of the Romans), and in other places.

But it cannot be supposed that all these amphitheatres could deserve to be named as edifices, when compared with the original model, "*the Flavian Amphitheatre*." Some were little more than natural vallies, with benches cut in the declivities of the surrounding hills like the amphitheatre at Corinth. In some places benches of stone were placed on the declivities of two hills, and the ellipsis completed by works of masonry at the extremities, like that of Gortina in Candia. Some were elliptical excavations with benches of turf, like that near Sandwich in Kent, and most of the Cætrelian amphitheatres (for such was the general rage for amphitheatric diversions, that scarcely any camp, or fixed military station, was without its amphitheatre of turf or timber). Some were partly excavated and partly constructed with masonry, like the amphitheatres of Pœstum and Caerleon; some had their exterior circuit constructed of masonry, and the seats and staircases of timber, like that of Pola

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in Istria; while others arose on a similar plan, and with nearly the same ornaments of architecture as the Flavian amphitheatre. Such were the amphitheatres of Capua, Verona, Nîmes, and Autun.

In these various structures, the combats of gladiators and the battles of beasts continued to be exhibited for near 250 years, in which time an incredible number of beasts and men were destroyed, and not unfrequently were they sanctified by the blood of the early Christians, who were devoted at a stake, or compelled to fight, for the gratification of the Pagan populace. At length Providence ordained that Christianity should become the religion of the state, and its lenient spirit gradually changed the barbarous amusements of the ancient world for others more congenial to the humanity of its doctrines. In the year of our Lord 325, Constantine the Great prohibited by law the exhibition of gladiatory combats in the east, but they were not finally abolished in Rome till the reign of Honorius, who, in the beginning of the fifth century, banished all professional gladiators out of the country. This was occasioned by the murder of a monk named Telemachus, who, on some solemn day, was destroyed by the people, while he was exhorting them to desist from their sanguinary diversions. The combats of wild beasts, however, continued both in the eastern and western empires for some time after these events, but gradually became less frequent and less magnificent, till in the course of the sixth century, they were every where totally abolished; and amphitheatres being disused for these purposes, were, in a great degree, abandoned to the depredations of men and the injuries of weather. At Verona and other places, during the middle ages, they were sometimes used for judicial combats and for tilts and tournaments; but these customs having also past away, they have since fallen into general neglect, and consequent ruin.

It is not easy by a verbal description to convey an adequate idea of the construction of an amphitheatre, and the means by which such a number of persons crowding to these edifices could have ingress and egress without confusion; but, with the assistance of the sectional diagram in *Plate 11. of Architecture*, and an occasional reference to the plans and sections of such amphitheatres as yet remain, these particulars may be easily understood. We have already observed, that the exterior circuit consisted of two or more stories of arcades; these varied in number according to the extent of the amphitheatre. On the ground floor they opened to an equal number of arched passages, and staircases, tending like radii towards the arena, and were intersected by two or more arched passages, or *CORRIDORS*, that surrounded the whole edifice, and gave an uninterrupted communication to every part. Sometimes in the middle of the fabric there was an intermediate gallery, which, like those on the ground floor, surrounded the whole, and served as a common landing-place to all the staircases that led to the higher galleries, as in the amphitheatre of Nîmes; and sometimes each staircase had its distinct landing, without any gallery of general communication, as in the amphitheatre of Verona. Of the radiating passages the four which were placed on the diameters of the ellipsis were usually made wider than the rest, and were also, by lateral arches, laid open to the adjoining passages on either side of them. Those two which were placed on the shorter diameter were the principal entrances, by which the emperor, the senate, and other distinguished personages were conducted to their seats on the *PODIUM*. The other two led directly into the arena by large arched gateways, and were appropriated to the beasts and gladiators, who probably entered in some processional manner, that required more width and elevation than

the ordinary inlets. These interior gateways still exist at the extremities of the ellipsis, in the amphitheatres of Verona and Pæstum, and in the former interrupt the continuity of the lower benches. Through the other passages the different orders of the people passed to the staircases which led to their respective seats; and as every arch in the exterior circuit was numbered, and also the *CORNER*, which separated the people into classes, in the manner we shall hereafter mention, every one knew the passage which would conduct him to the place assigned by the laws of the amphitheatre to his rank and condition. Those persons whose dignity entitled them to a seat on the podium passed forward to the staircase *A*, and ascended to the doorways that opened upon that distinguished place. Those of the Equestrian order, or of such rank as entitled them to a seat in the division of benches next above the podium, ascended by the staircase *B*; while the other classes made use of the staircase *C*, which arose to the floor of the intermediate landing or corridor *E*; and then either ascended by the staircase *F* to the second division of benches, or by the staircase *D* to the second exterior corridor, and from thence by the staircase *G* to the third division of benches, and higher still by other staircases in a different direction, to the third exterior corridor, which communicated with the uppermost division of benches. Those different staircases were respectively opposite to different arches, and approached by distinct passages, though, for the sake of perspicuity, we have represented them in a single diagram.

The doorways, which opened from the stairs and passages, were denominated *VOMITORIES*. The number of these varied, according to the size of the amphitheatre, and the number of exterior arches. In the amphitheatre of Verona there were 60 of them, placed in four elliptical rows alternately over alternate radii, so that the first and third were on one radius, and the second and fourth on another. In the highest circuit there were 16, in the next to it 16, placed at equal distances, in the next to that 16, but not all at equal distances, as the *BALCONIES* over the great gates of entrance to the arena occupied the places of two at the extremities of the ellipsis; but the number was supplied by two over the shorter diameter, where otherwise there would have been but one. On the lower line there were 12 which opened upon the podium. The number of benches between the several ranges of vomitories was unequal, and probably was not determined by any positive rule. The benches were about two feet four inches broad, and one foot eight inches high. Before every range of vomitories one bench was omitted, which left a platform four feet eight inches broad, (having a wall on the ascending side three feet four inches high) which encompassed the whole, and served as a communication to all the vomitories on the same level. These platforms were called *PRECINCTIONS*, and the fronts of the walls, which bounded them on one side, were denominated *BELTS*. The latter were sometimes embellished with Mosaic work, and surmounted by *BALLUSTRADES*, to protect those from falling, who were seated on the benches immediately above them. The podium was a platform that surrounded the arena, more spacious than the precinctions. Opposite to every vomitory a flight of stairs, two feet six inches wide, descended from one precinction to the belt or ballustrade of the other. In the top of the benches, and close to the edges adjoining to the stairs, small channels were cut, by which the rain-water or urine flowed from bench to bench, till it reached certain pipes or conduits that conveyed it to the drains below. As these stairs radiated from the uppermost bench to the podium, they, with the precinctions, divided the whole interior concavity into wedge,

like portions, in which the spectators were seated according to their rank. These were the *Cunei*, so frequently mentioned by writers, and which do not appear to have been well understood, has the term as been applied to very different parts of the amphitheatre. That the people both in the theatres and amphitheatres were placed in wedge-like divisions, we learn from various passages in ancient authors. Apuleius says, such spectators as could not get places on the marble benches, but stood in the passages or on the stairs, were "unwedged;" and Tacitus informs us, that when Nero placed soldiers in the amphitheatre to applaud his performances, they were distributed through all the "wedged," that every part might ring with applause.

With regard to the laws by which the people were arranged in amphitheatres, our information is very imperfect; but we may presume the same regulations applied to amphitheatres and theatres, as far as the forms of the edifices coincided. We know that persons of the highest dignity had their places on the podium, and in the middle of one side of it was the emperor's PAVILION, called the *SUGGESTUM*. Several of the wedges were assigned to the senatorial order, as the podium was not sufficiently spacious to contain all the senators and other dignified persons. Other *Cunei* were allotted to the Equestrian order, with whom the Tribunes, both civil and military, took their seats, of which the number was very great, as every man who had once filled the office retained the rank. The *Liberti* were cautiously excluded from these orders, and even the *Legati* were prohibited by Augustus from sitting among the senators, because some *Liberti* had been sent in that character. The married men had places distinct from the unmarried. The young men had their appropriate seats, and their tutors sat in other seats near them, that they might observe their behaviour. The attendants and official servants of dignified persons had seats constructed of wood in the higher parts of the building. The places for the vestals were on the podium, and the princesses and ladies of high distinction frequently sat with them; but the front of the gallery, which rose above the gradations of benches, was especially appropriated to the women, where they sat on chairs, and the lowest order of the Plebeians stood behind them. These were the leading distinctions of rank and classes; but for popular accommodation different wedges were, in all probability, allotted to different tribes. The *Cunei* were all numbered as before mentioned; but it is a mistake to imagine that every man had his particular seat numbered and ticketed, for sometimes all the *Cunei* were filled, and the precincts, and stairs so crowded, that many persons who were entitled to places within certain precincts, were obliged to ascend to the gallery, and mingle with the plebeians behind the women. By such arrangements as we have specified, which relate chiefly to the Roman amphitheatre, and which undoubtedly were varied in the provinces, as the ranks and classes of people differed from those of Rome, all confusion and disorder were avoided. The general care of the amphitheatre was given to an officer named the *VILLICUS AMPHITHEATRUM*, and the *Cunei* were under the direction of other officers, called *LOCARII*. The strictest attention was exerted to prevent any one from occupying a place to which he was not entitled; and if a man was wrongfully compelled to quit a seat he had taken, he considered himself as degraded and injured. See *Plate VII. of Architecture*.

The front of the podium, next the arena, was defended by strong netting and rails of iron, armed with spikes, and also with strong rollers of timber which turned vertically, to prevent the hunted animals from leaping over. The emperor's pavilion was lined with silk, and otherwise highly

embellished. The seats of the principal persons were covered with cushions, the marble benches in general with boards, and over all an awning of woollen of different colours, called the *VELUM*, was occasionally stretched to protect the spectators from the sun and rain, which, by means of pulleys and cords, could be let down and drawn up at pleasure. These articles, which may be denominated the furniture, were almost the only combustible parts of the fabric, and in the Flavian amphitheatre they were, at different times, destroyed by lightning, and particularly in the reign of Macrinus, when so much damage was done to that building, that the public games were performed in the circus for several years after.

It has been asserted that amphitheatres had an underground story, consisting of numerous dens and cells, in which the beasts were kept for the games; but whoever considers the space which, on the ground story, was necessary for the ingress and egress of the people, and the difficulty of getting light, however small the quantity requisite, and of gaining convenient entrances to these subterraneous places, to say nothing of the insufferable stench that the food and ordure such numbers of animals would occasion, will at least acknowledge this to be improbable. As the coliseum has not been examined to the foundations, we can say nothing with certainty with regard to the subterraneous parts of that fabric; but the amphitheatre of Verona was cleared in many places by Maffei, and nothing found but drains (see *Plate VIII. of Architecture*), which received the rain and other waters conveyed from above by channels in the staircases. Among the passages, and under the stairs on the ground story, are many cells and rooms that were probably prisons for criminals condemned to fight, or be devoured, in which the beasts might occasionally be stabled; but there is nothing to justify a conjecture that animals were constantly kept there. On the contrary, we learn from a passage in St. Chrysostom, that the beasts intended for the public games were kept in the environs of cities, and Procopius makes particular mention of a spacious place in Rome called the *VIVARIUM*, appropriated to that use. It appears, that Lippus and others were led to conjecture that animals were kept under the amphitheatre, by some passages in ancient authors, which describe them as coming from subterraneous places into the arena. But it was sometimes the practice to give novelty to the games, by erecting pieces of machinery on the arena, representing mountains, on which real trees were planted, and under them hidden caves were formed, from whence the animals rushed out to encounter the combatants, or to devour their victims. It was probably to these caverns that such ancient authors alluded, and not to any permanent caverns constructed under the amphitheatre.

Of the amphitheatres which merit particular notice, the coliseum stands foremost in order of time and in magnitude. It was an ellipsis, whose longest diameter was about 615 English feet six inches, and the shorter 510 feet. The longer diameter of the arena was about 281 feet and the shorter 176 feet, leaving a circuit for the seats and galleries of about 157 feet in breadth. The external circumference, when complete, was about 1770 feet, covering a superficies of about 246,651 feet, or something more than five acres and a half, and could barely be included in a parallelogram of seven acres. These dimensions are taken from Desgodetz, who appears to have examined the remains of this edifice with great care, and to have corrected many mistakes of Serlio and Fontana.

The external elevation of the coliseum consisted of three stories of arcades respectively embellished with columns of the Doric, Ionic, and Corinthian orders; and an inclosed

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PILASTRADE of the Corinthian order that ascended to the uppermost cornice. The first story of arcades was raised four steps, or about three feet six inches, above the ground, and the bases of the columns stood on the pavement. In the two superior stories the PIERS and columns were elevated on stylobatae or continued PEDESTALS, which served as PARAPETS to the corridors. The pilastrade was also elevated on a STYLOBATA, in which were the windows of an intermediate gallery, and in every second INTERPILASTER was another window that lighted the highest gallery. The building was crowned by a CANTALIVER CORNICE perforated with square holes, three in each inter-pilaster, through which the upright pieces of timber that supported the awning were passed to a range of CORBELS about the middle of the pilastrade. These several stories of columns and pilasters appear to have been continued, without break or interruption, round the whole external circuit; although on some medals, engraved by Maffei, there is a representation of a PORTICO on one side, as if intended for the principal entrance. Whether this was ever executed, and in what manner, cannot now be determined, as there are no vestiges of such an additional structure, unless the mutilations over the central arch, on the side next the Imperial palace, may be considered in that light. Piranezi says, that in this place there was a bridge which communicated with the portico of Claudius. The height of the first story from the pavement to the top of the cornice is about 33 feet 6 inches, the second about 39 feet, and of the third about 38 feet, of the pilastrade about 46 feet, and the whole height, including the steps and BLOCKING COURSE, about 164 feet. See *Plate IV. of Architecture.*

On the ground plan the exterior circuit of the ellipsis consisted of eighty open arches; the piers of which were about seven English feet, one inch broad, having three-quarter-columns in front of about two feet ten inches diameter; seventy-six of the arches were each about 13 feet 8 inches wide, and the four which answered to the four semi-diameters, about 14 feet two inches. These arches opened into a spacious double corridor, that encompassed the whole, from thence radiated eighty passages and staircases, which either led to two interior corridors and the arena, or ascended to the galleries and vomitories above. This double corridor is a grand and distinguishing feature in the plan of the coliseum. The first interior corridor was lighted by square apertures in the floor of the precinct over it, and the corridor adjoining to the wall of the podium was probably lighted in the same manner. The second story had a double corridor over that on the ground story, connected by passages on the same level, with an interior corridor from whence stairs, on one hand, ascended to the second range of vomitories, and on the other to an intermediate corridor, which formed an ENTRESOL or MEZZANINE-floor, over the interior circuit of the double corridor. In this mezzanine gallery, which was lighted by square apertures in the floor of the gallery over it, the stairs commenced that rose to the next story. The third story consisted of a double corridor, and must have contained the stairs that communicated with the galleries above, but it is too much in ruin to be accurately traced. In the interior wall are some windows, and the doorways or vomitories that opened on the uppermost cunei of benches. The fourth story, in all likelihood, was that appointed for the women, and on the exterior wall there are vestiges of stairs that led to the fifth gallery, which we conjecture was that allotted to servants, and furnished with benches of timber. This gallery contained four staircases that led to a sixth floor, which was,

perhaps, appropriated to those who managed the velum and had no other covering, and from this floor the four staircases continued to the parapet or blocking course, which crowned the exterior wall. These three upper floors were all comprehended externally in the pilastrade, but how their interior fronts were finished we know not: we may, however, presume, that they were so constructed, probably of timber, as to give the least possible obstruction to the prospect, and perhaps nearly in the manner we have represented them in the perspective section, *Plate V. of Architecture*, which with the plans in *Plate III.*, and the sections in *Plate IV.* will sufficiently explain the construction of this edifice.

The exterior circuit of the coliseum is built of Travertine-stone, cramped together with iron without cement. The piers of the double corridor, the VOUSSOIRS of the arches, the heads of the partition walls and some BONDING COURSES are of the same kind of stone. The rest is of brick. The OFFSETS of the front walls are all made on the outside, so that its interior face is nearly perpendicular. Some of the internal walls have remains of ornaments in plaster, and in others they are lined with marble. The floors of the corridors are paved with small flat bricks and covered with a hard incrustation of stucco. The columns in the three stories and the pilasters are all of one diameter. The diminution of the columns commences from the third part of their height. In the first and second orders they are three-quarter columns; in the third order semi-columns. The VOLUTES of the Ionic capitals, and the foliage and other embellishments of the Corinthian capitals, are only rough-hewn or BOSTED. All the mouldings except the IMPOSTS of the arches have the SOFFITS of their projections sloping upwards or higher in front than rear, and in the same degree in the mouldings of the first order as in those at the top of the edifice. This was frequently practised by the architects of antiquity, for the purpose, as many have conjectured, of giving the mouldings a greater apparent projection; but, as Desgodetz justly observes, if the mouldings have in reality their due projection, to make them appear larger is to make them appear false, and as the ancients in all situations gave them the same degree of elevation, he thinks they had some other besides optical reasons for the practice. This edifice is not every where executed with exactness, many of the parts being out of level and larger in some places than others, perhaps the unavoidable consequences of an immense number of persons working upon such an extensive building at the same time, and the unequal settling of so many piers, placed upon a foundation of seventeen hundred feet.

This amphitheatre, according to Justus Lipsius, was capable of containing 87,000 spectators on the benches, to which number Fontana added 22,000 for the galleries, staircases, and passages. But it will be found, that allowing two feet two inches to each seat, and 21 inches for each person, not quite so many as 50 thousand could be contained on the benches, with the addition of one floor of the gallery, and supposing all the precincts and staircases to be filled. If the higher galleries were completely crowded, perhaps about 30,000 more might be added, in all about 80,000; a number sufficiently large without exaggeration.

A structure of such dimensions, and of such contrivance and ingenuity as that we have been describing, throws into obscurity the most magnificent works of the Greeks, and even when compared with the pyramids of Egypt, is more entitled to our praise, though less the object of vulgar admiration.

erations. The pyramids, if they be considered as buildings, are the work of barbarous greatness, performed by ignorant labour, with little invention or ingenuity. The coliseum could not have been constructed till the art of building had arrived at its highest perfection, and probably would never have been constructed if the arch had not been invented, and its powers determined both experimentally and mathematically some short space of time preceding. This, however, is conjecture. When this edifice was complete, its external aspect must have been strikingly grand, from its magnitude, its loftiness, and simplicity of form; and the immensity of its interior concavity, especially when crowded with 50,000 persons, must have been in the highest degree imposing. Even now, when its benches and galleries are in ruins, and the arena filled with the accumulated rubbish of twelve centuries, its remains are contemplated with astonishment. Yet this magnificent edifice, if it was completed by Titus, was erected in two years and nine months, a wonderful example of the energy of the Romans! However, there is a tradition in Rome, that 15,000 men were employed upon it for ten years, which, if true, will place the time of its being completed far in the reign of Domitian, though it was certainly dedicated, and the first games exhibited within it, before the death of his brother. The coliseum has been pillaged greatly at various times, but most by Michael Angelo, who carried away near one-half of the outward wall to build the Palazzo Farnese. Pope Benedict XIV. to stop these depredations, consecrated the ruins, and erected several altars, which on Fridays and Sundays were, before the French revolution, much frequented by devotees. A small building near the centre was furnished with accommodations for a hermit, who constantly resided there to guard the sacred relics from the rude hands of ignorance and impiety, an office which we hope is still continued.

Of the amphitheatre of Verona only four arches of the external circuit were remaining at the beginning of the 18th century. They consist of three stories of *unwrought* RUSTIC arcades, of which the two lower stories were embellished with rusticated pilasters and entablatures, assignable to no legitimate order. In the third story, there were no pilasters, but capitals are executed under the architrave, as if pilasters had been originally intended. On the top of the highest cornice there are two mutilated courses of rustic work, like the rest of the front, and the beginning of two plain pillars which has been supposed the commencement of a fourth story. The height of the three existing stories is about 90 English feet. The whole of the edifice was erected without any cement, the stones being nicely joined and secured by iron cramps, covered with lead. The longer diameter of the ellipsis was 506 English feet. The shorter 405 feet. The arena was about 247 feet by 145. The exterior circuit was 1451 feet. The superficies 204,930 feet, or four acres and nearly one third of an acre.

The exterior circuit was divided into 72 arches, opening into a single corridor, surrounding the whole fabric, from whence radiated 72 passages and staircases, intersected by two other surrounding corridors. The greatest part of these exist, and by consulting the plans and section in *Plates VI. and VII. of Architecture*, a clear idea may be obtained of their construction. The two grand entrances at the ends of the ellipsis were considerably wider than the other passages, and nearly of an uniform width from one end to the other. The GROOVES in the jambs of the remaining external piers shew that the arches have been inclosed by gates; but whether this was the case at Rome and other

places we know not. By the plan of the second story we find that the outward corridor was crossed by eight staircases, which, rising over the circuitous passage-way, conducted the spectators to the third corridor, and the uppermost vomitories. The benches of this amphitheatre, 45 in number, remain, but not in their original places, having been moved and altered according to Maffei in the repairs, which the citizens of Verona, much to their honour, have from time to time made to this edifice. By contriving to make it occasionally useful as a place for public diversions, they have preserved it from entire destruction. As we drew our general description of the precautions and curci, as well as many other particulars, from this amphitheatre, it is unnecessary to repeat them here.

In *Plate VIII. of Architecture*, we have represented the sewers made for the purpose of carrying off the water of the building. In the centre a well is observable that has no connection with the sewers, the use of which it is not easy to conjecture, unless it was intended to receive some mast or pole, erected for the purpose of supporting and working the velum. It is six feet wide and very deep. The time of building this edifice is unknown, some ascribe it to Augustus, and others to the emperor Maximilian, but Maffei supposes it to have been constructed by the citizens of Verona, during the reigns of Domitian and Nerva. The younger Pliny mentions a magnificent exhibition of gladiatory combats at Verona, which gives probability to the conjecture of Maffei. About 30,000 spectators might have been crowded into this amphitheatre if the precautions and staircases, as well as the benches and gallery, were filled.

The elevation of the amphitheatre at Nimes consisted of two stories of open arcades and an ATTIC. The lower story is very lofty, the arches tall and narrow, *EXTRA-DOSSED*, and separated by buttresses of two projections in the Gothic form, crowned by a Tuscan capital. A regular entablature encircles the building, and breaks in projection over every BUTTRESS. The second story is embellished with columns of the Tuscan order, seven diameters in height, over each of which the entablature breaks as in the order below. The arcades on this story were originally defended by a parapet that rose about three feet six inches above the floor of the corridor, formed of one large flat stone, with a sunk PANNEL, on which various designs were carved in bas-relief. On one which remains perfect, there is the representation of a combat between two gladiators. The rest have been removed and their place supplied by others of modern building. On the crown of the attic, directly over every pier, are two CONSOLES, projecting 20 inches before the face of the wall, pierced with a hole about eleven inches diameter. Through this hole the pole which supported the velum was passed to the cornice, where it rested in a socket of the same dimensions and about six inches deep. Other holes are found in the benches at corresponding intervals, in which other poles were fixed, and the *velum* extended by pulleys from one pole to another, as represented in *Plate II. of Architecture*. This method of supporting the velum is more simple than Fontana's, but it shades only the upper ranges of benches, and leaves those where the persons of highest rank were seated, exposed to the weather; yet if we conjecture rightly as to the use of the well in the Veronian arena, the velum might have been further extended by other cords attached to a mast in the centre. See *Plates II. and IX. of Architecture*.

The exterior circuit consists of 60 open arches, of which four at the extremities of the diameters "are ornamented with

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with pediments, and formed the grand entrances." The other 56 led to the passages and staircases, intersected by two corridors which encompassed the whole; one in the exterior of the building, and one near the wall of the podium which received light by iron grates from the arena. Another interior corridor or gallery, situated near the middle of the building, and nearly at equal distances of height between the two exterior stories, forms the common landing of the staircases, and communicates both with the exterior gallery on the second story and the benches. The spectators ascended by 20 steps, each nine inches high and twelve broad, into the intermediate gallery, and by 20 more into the exterior one on the second story. There is a fifth gallery in the attic, which was approached by narrow stairs, wrought in the body of the wall, and probably intended for the *velarii* or servants who managed the *velum*. This amphitheatre had no covered gallery surmounting the benches and looking upon the arena, like those of Rome and Verona. All the radiating passages, as well as the four grand entrances, regularly decreased in height and width from the exterior corridor to the wall of the podium. It was the same in the amphitheatre at Arles, as may be seen in the only passage remaining.

The longest diameter of this edifice, extending from east to west, is, according to Beaumont, corrected by another account, about 430 English feet, the shorter diameter 338 feet, and the whole height 76 feet six inches. The superficies 126,273 feet, or something less than three acres. The benches were originally 32 in number, from 18 to 24 inches high and from 18 to 24 in breadth. They were approached by three rows of vomitories, and were capable of containing about 17,000 spectators. The stones with which this fabric is constructed are of very large dimensions; sometimes cemented and sometimes fixed with iron cramps and lead. In several places the impost of the piers is a single stone, nine feet long, seven feet broad, and between two and three feet thick, and many of the stones, which form the benches, are eighteen feet long, two feet broad, and one foot eight inches high.

The vicissitudes of the amphitheatre of Nimes upon record, are so numerous that it is wonderful it should have been preserved so well as it now appears. In the year 472 it fell under the dominion of the Visigoths, who surrounded it with a ditch, built a castle within it, and converted it into a citadel. Part of the towers of the castle still remains; but the ditch was filled up in the 13th century. In 720 it was taken by the Saracens, who were driven from it in 737 by Charles Martel. After that time it was occupied as a fortress by the counts of Provence, who sustained a number of attacks in it, and built a church and a palace on the arena. The steeple of the church is still in existence. In 1226 the knights, who then guarded the citadel, yielded it to Lewis the VIII., and in 1391 it ceased to be a fortress and was evacuated, though the houses continued. In 1533, that polished monarch Francis the First directed it to be cleared, which his subsequent misfortunes prevented from being done, and similar orders were given by the late unfortunate Lewis the XVI., but the work has not yet been completed.

Governor Pownall, who visited Nimes in 1785, says, that the amphitheatre was filled with houses arranged in streets, and looked like a little walled town. The galleries on the ground story and the intermediate gallery were converted into numberless miserable habitations, but the exterior gallery of the second story and that in the attic were perfectly unencumbered as in their original state. The date of

this building is uncertain: but Mons. Menard conjectures it was erected by Antonine, which places it between the years 138 and 161.

What remains of the amphitheatre at Pola, in Istria, is a single elliptical wall of 72 arches, built on the declivity of a hill, having on the western side, which looked towards the sea, two rustic arcade stories with rustic Tuscan pilasters and entablatures, and on the opposite side only one arcade story, the first being gradually lost in the slope of the hill. Above the arcades is an attic story of rustic wall, with 72 windows, which surrounds the whole, and in it are grooves and corbels for the poles that supported the *velum*. At the haunches of the ellipsis are four projecting buildings or towers, of two arches in width, having windows curiously filled with reticulated stone work in the attic, and doors and windows on every story towards the arena. The second story of exterior arches in these projecting buildings are closed up as high as the imposts, and the semicircle is filled with upright *MULLIONS* of stone like the loopholes of an English barn. These towers have been called *COUNTER-FORTS* by Serlio and others, but in all likelihood they were made for another purpose, as will be mentioned hereafter.

The whole of the exterior circuit of this edifice, excepting a very few yards of the parapet, was remaining when it was visited by Maffei, and appeared with extraordinary beauty when viewed from the sea. It was built with stones cramped together without cement. All the benches and other interior parts which were originally constructed of timber had long been destroyed. The longer diameter of the ellipsis is about 416 English feet, the shorter diameter about 337 feet. The circuit about 1182 feet, the superficies 123012 feet, or about two acres and seven-eighths of an acre.

The Marquis Scipio Maffei, whose attachment to Verona made him unwilling to believe that amphitheatres existed in other places, inspected this inclosure, and pronounced it to have been a theatre only, assigning the slope of the hill to the benches for the spectators, and the opposite side which is nearly level, to the orchestra and stage. The two towers on the western side he supposed to have been constructed to represent the houses in the ancient scene, and the other two on the eastern side to have been built for the sake of uniformity only. All this appears highly improbable. The erecting of such an extent of elliptical arcades as half this inclosure, for the actors, would have been a waste of labour and expence to produce a work but ill adapted to its use, and if the towers had been intended to represent the fronts of houses, they would not have had doors and windows on both the upper stories, as well as the arches which gave entrance on the ground story; nor would such appendages have been erected on the opposite side for the sake of uniformity, when, in no point of view, they could be seen together. It is much more likely that the architect took advantage of the slope of the hill to place his benches on one side, and constructed them of timber on the other, and made the staircases to the higher ranges in the four towers, which conjecture renders them useful as well as uniform, on every side. It is said that vestiges of such staircases actually exist, but if they did not, the disposition of the apertures would justify the conclusion. There can be no doubt but the interior of this amphitheatre was filled with benches as high as the second story of arcades, and had a covered gallery on the attic story. If this be not admitted we may ask, why was there a range of windows in the attic story? and for what use was the cornice or coping of the wall formed

formed into a gutter, urets to receive rain water from a roof?

The amphitheatre of Pæstum is one of those which had the arena and part of the benches sunk below the surface of the earth and the excavation, encompassed by other benches and an arched structure of stone. Neither Major's work on the ruins of Pæstum, nor the Italian work on the same subject, published at Rome in 1784, by the Rev. Father Paul Antonio Paoli, enable us to form a clear idea of its construction, or even the exact state of its remains, and it would not have merited particular attention if it had not been made the basis of an hypothesis, respecting the origin and progress of these edifices, which, however simple and pleasing, does not appear to be true. The reverend father conjectures that the first public spectacles were given in small valleys, and that the spectators beheld them from the declivities of surrounding hills. That afterwards, when they were exhibited in cities, excavations were made in the earth, and encompassed with benches of turf, upon which the people enjoyed their diversions without incommoding one another. That the greater the number to be accommodated the more they sunk the arena, and increased the surrounding slope; and finally, that they inclosed it with walls of masonry, and added other benches of stone till it was capacious enough to contain a vast multitude of spectators. This, he thinks, was the first method of forming amphitheatres, which the Romans improved into the magnificent structures we have been describing. The amphitheatre of Pæstum he considers as an example of this ancient method, and supposing the excavated part to be of great antiquity ascends to the time of the Etrurians, and adopts the opinions which we have briefly controverted in the beginning of this article. But, however plausible this theory may be, if it depends on the antiquity of the Pæstum amphitheatre, its probability will decrease in proportion as that antiquity becomes doubtful. The remains of this amphitheatre are indeed situated among temples, which are believed, though perhaps erroneously, to be very ancient; but it is difficult to believe that a city, which could erect such temples, would be content with a simple excavation for the place of its public amusements. As to the part which was built of stone, the arches at either end of the elliptical inclosure, prove it to be the work of a much later period; and if our conjecture be well founded that the invention of the arch and the first construction of stone amphitheatres were nearly coeval, if not reciprocally the causes of each other, the date of that part will be fixed in the reigns of the first emperors, when the fame of the coliseum and the passion for public spectacles spread through all the Roman provinces and tributary nations, and every country endeavoured to imitate in the manner best suited to its population and riches the amphitheatre of Rome. But in whatever age the amphitheatre of Pæstum was made, its form alone is no proof of its antiquity, as the amphitheatre of Caerleon was formed in the same manner, and Britain might with equal reason produce it as an example of the earliest mode of forming amphitheatres, and from such evidence contend with Lucania or Etruria for the honour of the invention. The length of the Pæstum amphitheatre was about 211 feet, its width 151 feet, the superficies 31861 feet, or about three quarters of an acre.

In the five different amphitheatres which we have described, will be found the principal varieties of these edifices in a gradation that may be amusing to those who will take the trouble to compare them. The dimensions have been collected from the best authorities; and the calculations made

and examined with care; but such is the difference among authors in this respect, that the more we have consulted the greater has been our uncertainty. Thus Beaumont gives the dimensions of the amphitheatre of Nimes as 438 by 338 feet, while Governor Pownall states them to be 400 by 300, and the difference between Fontana and Desgodetz, with regard to the coliseum, is not less considerable. Who can wonder that the dimensions of the pyramids should have remained doubtful from the days of Herodotus to the present, when we are uncertain as to the exact sizes of objects in a manner under our eyes.

The writers on amphitheatres, most worthy of regard are the learned Justus Lipsius and the celebrated marquis Scipio Maffei. To the latter we have been greatly indebted, though we have not always adopted his opinions. Serlio, who described the ancient buildings of Italy, about the middle of the 16th century, deserves more attention than he has received. His prints of the coliseum, though rudely executed, and in places, incorrect, preserve some particulars which later authors have omitted. The splendid work of Fontana on the same subject is very ingenious, but inaccurate, and full of improbable conjectures; we have, therefore, followed Desgodetz in preference, who has trodden in the steps of Serlio, corrected his errors, and supplied his deficiencies; but even the plates of Desgodetz are in a few instances incorrect and inconsistent with one another. Governor Pownall's "Antiquities of the Provincia Romana of Gaul," and Augustus Beaumont's "Select Views of Antiquities in the South of France," furnish much information relative to the amphitheatre of Nimes and amphitheatres in general. "The Rovine della Citta di Pesto," by Father Paoli, contains some amusing speculations which are rendered doubtful by the amphitheatre of Caerleon, as described by Giraldus Cambrensis, and that intelligent traveller Mr. Cox, in his "Tour in Monmouthshire." Numberless other notices may be found in writers on local antiquities that illustrate this subject; a subject equally interesting to the architect and the antiquary.

AMPHITHEATRE is used by the French for the seats at the lower end of a theatre which rise above the parterre, opposite to the stage, and occupy the space of the front boxes and a part of the pit of an English theatre. They also give this name to an apartment appropriated to public scientific lectures and discourses, filled with seats, rising one above another, either in a semicircular form, or encompassing the whole room like the seats of an ancient amphitheatre. In the former case the scholars are in front of the lecturer; in the latter, he is placed in the central area, and surrounded by his scholars. Such schools in England are denominated theatres, as the theatre of the University of Oxford, the anatomical theatre at Surgeon's Hall, and the theatre of the Royal Institute, in London.

AMPHITHEATRE, in *Gardening*, is a lofty terrace, ascended by flights of steps either straight or circular, supported by banks and slopes of turf in various forms, and used to terminate the view from an alley or an opening in a thicket. This mode of decoration is also employed to give regularity to the side of a hill, and to gain an easy ascent by means of slopes and platforms of turf to the summit. The banks and slopes are frequently embellished with statues, fountains, vases of flowers, clipped-yews, shrubs, and dwarf-trees, and sometimes behind these are planted trees of nobler size, such as pines and cedars. A taste for gardening more consonant to the beauties of natural landscape, has nearly banished this kind of amphitheatre from England; but it is not uncommon in gardens on the continent.

AMPHITHURA, in *Ecclesiastical Antiquity*, a name given to the veil, or curtain, which divided the chancel from the rest of the church.

The word is *αμφίθυρα*, thus called, on account of its opening in the middle, after the manner of folding doors.

AMPHITRION, in *Entomology*, a species of PAPILIO. Wings indented, above black, with an unequal yellow band; beneath, on the posterior pair, a stripe of yellow dots, and blue lunulated marks. Linnæus. This is the Papilio Cambrifus of Cramer. The body is large, and without spots, general colour black, with an unequal row of yellow spots near the anal angle of the posterior, but not connected with it. Under side of the posterior wings black, with a stripe of seven large orbicular spots, and a streak of blue lunulated marks, terminating at the anal angle in a yellow dot; the margin sinuous with yellow. A native of America. Fabricius.

AMPHITRITE, *Αμφίτριτη*, from *αμφι*, and *τριζυ*, *sono*, in the *Heathen Mythology*, the wife of Neptune, daughter of Oceanus and Thetis, and goddess of the sea, sometimes taken for the sea.

There was a statue of Amphitrite in the temple of Neptune at Corinth, and another in the isle of Tenos. Spanheim says, that she is often represented like a Syren, with the upper part of the body to the waist like a female, and the lower part with the tail of a fish instead of limbs. Amphitrite was the mother of Triton. Two Nereids were also called by this name.

AMPHITRITE, in *Natural History*, a genus of the MOLUSCA order in the class of VERMES. The body is protruded from a tube, and is annulated; peduncle warted; feelers acuminated, approximated and feathered; and it is destitute of eyes. Linnæus. The species of this genus are Reniformis, Pencillus, Ventilabrum, Auricoma, Cristata, Chrysocephala, and Plumosa, which see.

AMPHITRYON, in *Mythological History*, the husband of Alcmena, was the son of Alcæus, and the father of Hercules; but less distinguished by his own exploits than by those of Alcmena, which it is of no great importance to recite.

AMPHODONTA, compounded of *αμφι*, and *οντα*, *tooth*, in *Zoology*, a designation given to animals which have teeth in both jaws, the upper as well as under.

AMPHORA, in *Antiquity*, an earthen vessel, which served as a kind of liquid measure among the ancient Greeks and Romans.

It is called in Homer *αμφιφορευς*, from *αμφι* and *φερω*, and by *syncope*, *αμφορευς*, on account of its two *ansa*, or handles for carriage. It is the same with the *quadrantale*. But we meet with two kinds of *amphoræ* in ancient writers, the Italic and Attic.

AMPHORA, *Italic*, was that used by the Romans, and which is, therefore, sometimes called the Roman amphora. The Italian amphora was also called *quadrantale*, and sometimes *cadus*. It contained 72 pounds of wine or water, 80 of oil, and 180 of honey.

The amphora was equal to 2 *urnæ*, or 3 *modii*, 6 *femodii*, 8 *oenyji*, 48 *sextaries*, 96 *hemina*, 192 *quartarii*, or 570 *cyathi*, amounting to about 7 gallons one pint, English wine measure. Arbuthnot.

The ancient amphoræ were either *sessile*, i. e. such as would stand, or *non sessile*, terminating in a sharp bottom. Of both which kinds, we meet with figures on ancient medals.

The *amphora capitolina* was the standard of this measure, which was kept in the capitol, to adjust others by.

Suetonius tells us of a man, who stood for the *quæstor*.

ship, and who drank an amphora of wine at one meal with the emperor Tiberius. Supposing the amphora to have been a cube of four feet each side, as Politian asserts it to have been, we may venture to say, that ten of the greatest drinkers on earth could not have emptied it. Boddæus's computation is much more reasonable; he makes the amphora of wine amount to about $4\frac{1}{4}$ gallons Paris measure.

AMPHORA, *Attic*, was that used by the Greeks, and therefore sometimes also called the Grecian amphora.

The Attic amphora was one-third part bigger than the Italic; so that as the latter contained 2 *urnæ*, or 48 *sextaries*, the former contained 3 *urnæ*, or 72 *sextaries*, amounting to about ten gallons $5\frac{1}{2}$ pints English wine measure. This was called *αμφορευς*, sometimes also *κεραμιον*, and, by way of distinction from the Roman kind, *μετρητὸν*.

AMPHORA was sometimes also used as a dry measure, containing three bushels; the standard whereof was kept at Rome in the capitol, to prevent false measures.

AMPHORA is also used to denote the largest liquid measure in use among the Venetians. The amphora contains four *bigots*, seventy-six *mustachi*, or two boats, or *muids*.

AMPHORA, in *Astronomy*, a name given to the sign more usually called AQUARIUS.

AMPHORARIUM *vinum*, in *Antiquity*, denotes that which is drawn or poured into *amphoræ* or pitchers, by way of distinction from *vinum doliare*, or cask wine.

The Romans had a method of keeping wine in amphoræ for many years, to ripen, by fastening the lids tight down with pitch or gypsum, and placing them either in a place where the smoke came, or under ground. Colum. Re Rust. lib. i. cap. 6. Plin. Nat. Hist. tom. ii. lib 2.3. cap. 1.

AMPHORITES, a kind of poetical contest, which obtained in the island of Ægina; in which an ox was given to the person who produced the best dithyrambic verses in honour of Bacchus.

AMPHOTEROPLON, among *Civilians*, denotes a kind of naval insurance, where the insurers run the risk both in the going out and return of a vessel.

In this sense the word stands opposed to *heteroplon*, where only the voyage outwards is insured.

AMPHOTIDES, in *Antiquity*, a kind of defence, or armour for the ears, worn by the ancient Pugiles, to prevent giving their adversaries a handle by that part.

Authors have not been well acquainted with the nature and office of the amphotides. Some explain them as a sort of helmet for covering the nose and ears.

Fabretti first ascertained their real use, from the figure of a Pugil, which had amphotides over its ears joined by a piece coming over the forehead, and tied with strings under the chin.

AMPHRYSUS, in *Ancient Geography*, a town of Phocis, called AMBRYSUS.

AMPHRYSUS, or AMPHRYSUS, is also the name of a river of Phthiotis in Thessaly, which ran by the foot of Mount Othrys. Virgil, in speaking of this river, alludes to the time when Apollo, being a shepherd, guarded the herds of king Admetus, whence he is called "pastor ab Amphryso," Georg. lib. iii. v. 2. This river is also mentioned by Callimachus, Apollonius, Ovid, and Lucan. Another Amphrysus in Phrygia is mentioned by Pliny, to which was ascribed the property of rendering women barren.

AMPLA, in *Conchology*, a species of VOLUTA. Shell elongated, aperture large, lip acute, wreaths of the spire scarcely visible. Linnæus.

AMPLEPIUS, in *Geography*, a town of France, in the department of the Rhone and Loire, and chief place of a

ganton, in the district of Ville Franche, four leagues east-south-east of Roaane, and five west of Ville Franche.

AMPLEXICAULE, in *Botany*, denotes embracing the stalk, and is applied to a leaf whose base embraces the stalk sideways. See **LEAF**.

AMPLIATION, in a general sense, is used by some writers for the act of enlarging the compass or extent of a thing.

On a medal of the emperor Antoninus Pius we find the title *ampliator civium* given him, on account of his having extended the *jus civitatis*, or right of citizenship, to many states and people, before excluded from that privilege. In effect, this prince is generally supposed to have made the famous constitution, whereby all the subjects of the empire were made citizens of Rome. M. Spanheim refutes this notion, and makes the emperor Caligula to have been the author of that constitution.

AMPLIATION, in the Roman *Law*, denotes the act of deferring a judicial sentence, either because the cause was not clear, or in favour of him against whom it is to pass.

Ampliation differed from *comperendination*, as the former was granted on the mere motion or pleasure of the judge, the latter at the petition of one or both the parties. Besides, the former was not limited to any certain time, whereas the latter could not be extended beyond the third day. Besides, ampliation might be repealed, which *comperendination* might not.

The first introduction of ampliation was in favour of the *rei*, or persons accused. But it was afterwards used on other occasions; *e. gr.* when certain witnesses were wanting, or the crime or the fact had not been sufficiently proved for a final decision, or the kind or measure of punishment was not agreed on, &c.

In these cases the prætor signified his intention, by pronouncing the word *amplius*, or the letters *N. L.* for *non liquet*, by which he denoted that the cause was not clear, but that the second action must be brought.

The person whose sentence, whether of condemnation or abolution, was thus deferred, was said to be *ampliatius*.

Hence the phrases, *bis ampliatius*, *tertio abfolutus est reus*. Liv. xliii. 2.

AMPLIATION is also used, among *Schoolmen*, to denote the acceptance of a term for a different time from that signified by the verb in the proposition, *e. gr.* *justus peccavit*, *i. e.* *before he sinned he was just*.

AMPLIFICATION, in *Rhetoric*, part of a discourse or speech wherein a crime is aggravated, a phrase or commendation heightened, or a narration enlarged, by an enumeration of circumstances, so as to excite the proper emotions in the souls of the auditors.

Such is the passage in Virgil, where instead of saying merely that Turnus died, he amplifies the circumstances of his death.

— — — *Asi illi solvuntur frigore membra,
Vitaque cum gemitu fugit indignata sub umbras.*

The masters of eloquence make amplification to be the soul of discourse. Longinus speaks of it as one of the principal means which contribute to the sublime: but he censures those who define it a discourse which magnifies things; this equally agreeing to the sublime, the pathetic, &c. The same author distinguishes amplification from the sublime by this, that the latter consists wholly in the elevation of words and sentiments, whereas the former consists also in their multitude: the sublime is sometimes found in a single thought; but amplification cannot subsist, excepting in abundance.

There is likewise a difference between the amplification and the proof; because the one serves to clear the point, and the other to heighten and exaggerate it; and therefore it requires a florid and beautiful style, consisting of strong and emphatical words, flowing periods, harmonious numbers, lively tropes, and bright figures.

There are two general kinds of amplification; the one of *things*, the other of *words*. The first is produced in divers manners; as, 1. By a multitude of definitions: thus it is Cicero amplifies on history: *Historia est testis temporum, lux veritatis, vita memoria, magistra vite, nuntia vetustati*. 2. By a multitude of adjuncts; of which we have a fine instance in Virgil's lamentation for Cæsar's death, by enumerating the many prodigies and monst'rs that either preceded or succeeded it. *Vix quoque per lucos vulgo exaudita silentis ingens, & simulicra modis valentia miris visa sub obscurum noctis; p'cedesque locuta, infandum! sistunt annes terraque desibunt; et mestum illacrymat templis ebur, æraque fudant*. 3. By a detail of causes and effects. 4. By an enumeration of consequences. 5. By comparisons, similitudes, and examples, &c. 6. By the contrast of antithets, and by rational inference.

Amplification by words is effected six ways. 1. By using metaphors. 2. By hyperboles. 3. By *synonima*. 4. By splendid and magnificent terms; as that of Horace, *Scandit eratas vitiosa naves cura, nec turmas equitum relinquit, ocyor cervis, & agente nimbo ocyor euro*. 5. By *periphrases*, or circumlocutions. 6. By repetition. To which may be added, by gradation.

AMPLITUDE of the range of a projectile, in *Gunnery*, denotes the horizontal line subtending the curvilinear path in which it moved. See **PROJECTILE**.

AMPLITUDE, in *Astronomy*, is an arch of the horizon, intercepted between the true east or west point, and the centre of the sun, or a star, at its rising or setting, so that the amplitude is of two kinds; *orientæ*, or eastern, and *occidentis*, or western. These are also called northern or southern, as they fall in the northern and southern quarters of horizon; and the complement of the amplitude, or the distance of the point of rising or setting, from the north or south point of the horizon, is called the **AZIMUTH**.

To find the sun's or star's amplitude, either rising or setting, by the globe, see **GLOBE**.

To find the sun's amplitude trigonometrically; having the latitude and the sun's declination given. Say, as the cosine of the latitude is to the radius, so is the sine of the sun's or star's declination to the sine of the amplitude. Suppose, *e. gr.* the latitude to be that of London, *viz.* $51^{\circ} 32'$, and the declination $23^{\circ} 28'$; then cosine $51^{\circ} 32'$, or 9.7938317: rad. or 10.0000000 :: sine of declination $23^{\circ} 28'$ or 9.6001181: 10.0000000 + 9.6001181 — 9.7938317 = 9.8062864, or sine of the amplitude, or $39^{\circ} 48'$; and this is of the same name with the given declination, *viz.* north, when the declination is north, and south, when the declination is south.

AMPLITUDE, *magnetical*, is an arch of the horizon, contained between the sun or star at its rising or setting, and the magnetical east or west point of the horizon, indicated by the magnetical compass, or the amplitude or azimuth compass; or it is the difference of the rising or setting of the sun, from the east or west points of the compass. For this purpose place the compass on a steady place, from which the horizon may be clearly seen, and looking through the sight-vanes of the compass, turn the instrument round, till the centre of the sun, or other celestial object, may be seen through the narrow slit which is in one of the sight-vanes, exactly in the thread which bisects the aperture in the other sight-

light-vane; and when the centre of the celestial object, whether rising or setting, is just in the horizon, push the stop, in the side of the box, so as to stop the card, and then read the degree of the card which stands just against the fiducial line in the box; and this gives the amplitude required. In this operation allowance must be made for the height of the observer's eye above the level of the sea. The difference between the magnetical amplitude, thus observed, and the true amplitude, obtained by the last article, is the variation of the compass. E. G. If the magnetical amplitude be observed by the compass to be

61° 47', at the time when it is
computed to be - - 39° 47';

then the difference - 22° 0' is the variation west.

AMPLUSTRA, in *Conchology*, a species of BULLA. Shell roundish; spire elevated, obtuse, banded with flesh colour. Inhabits Asia. Linnæus.

AMPOSTA, in *Geography*, a town of Spain in Catalonia, situate on the Ebro, three leagues from its mouth, seven miles south of Tortosa.

AMPOTIS, *αμποτις*, signifies properly the reefs or ebb of the tide. But Hippocrates, who was of Cos, one of the Grecian isles, and must have had many opportunities of observing the tides, very elegantly applies this word to the reefs of humours from the circumference of the body to the internal parts.

AMPRÆ, in *Ancient Geography*, a people whom Pliny places in Arabia Felix.

AMPRELITÆ, a people of Colchis, according to Pliny.

AMPSAGA, a river of Africa, on the eastern part of Mauritania Cæsariensis, separating it from Numidia Propria, rises on Mount Auras, in the confines of the Atlas, and falls into the Mediterranean, ten leagues east of Jijel, or Igiligh. One branch of it, called Rummel, waters Cirta. According to Dr. Shaw, the Ampsaga is now called Wed el Kibbeer, i. e. the Great River, which corresponds with the signification of ampsaga; *ampsaga*, in Arabic, denoting ample, or large.

AMPSALES, a town of Asiatic Sarmatia, according to Ptolemy.

AMPSANCTI Vallis, or Lacus. See MOFFETTA.

AMPSANI, a people of Germany, conquered by Germanicus, according to Strabo.

AMPT, in *Geography*, the name given in Denmark to a lesser jurisdiction or district. The country is divided into several larger districts, called stifts-ampts, of which there are seven; four in Jutland, and three in the islands. Every stifts-ampt is subdivided into lesser districts called ampts. A person of quality is generally chosen stifts-amptman, a post resembling that of lord-lieutenant in England. The amptman, or under-governor of an ampt, is generally a person of inferior rank, who resides in the principal town of his district, and is intrusted with the conduct of all public concerns. The post is generally given for life, as a recompence to those who have faithfully served the court. The salary of the amptman is usually 400 crowns, and that of the stifts-amptman a thousand crowns; besides various exemptions and privileges.

AMPHILL, a town of England, in the county of Bedford, pleasantly situate, near the centre of the county, between two hills. It has been of late years much improved, particularly by the erection of a handsome market-house. The principal streets are neat and regular, crossing each other at right angles. Near the middle of the town is an obelisk of Portland stone in which is a pump, built for the use of the inhabitants by the Earl of Upper Ossory; and west of the

town is Amphill park, his lordship's seat, which is a superb edifice, containing a valuable collection of paintings, by several ancient and modern masters. The town has an almshouse and a charity-school. Its market is on Thursday; and its distance from Dunstable 12 miles, and from London 45 $\frac{3}{4}$.

AMSONIA, in *Botany*. See TABERNÆMONTANA. Gmelin has made Amsonia a distinct genus, including two species, viz, 1. *A. Tabernæmontana*, and 2. *A. Ciliata*. But Mr. Dryander observes, that the *A. Tabernæmontana* of Walter, to which Gmelin refers, is certainly meant for TABERNÆMONTANA *Amsonia* of Linnæus, as the trivial name is printed in Roman character; and he thinks it highly probable that Gmelin's *A. Ciliata* is the same as TABERNÆMONTANA *Angelifolia* of Hort. Kew. Linnæan Transf. vol. ii. p. 228.

AMPTRUARE, in *Antiquity*, denotes a kind of dancing performed by the chief of the *salii*, and answered with a correspondent motion by others in the *chorus*.

This is sometimes also called *ambtruare*; the answer of the *chorus* was particularly called *redamtruare*.

AMPUDIA, in *Geography*, a small place of Spain, in the country of Leon. In the time of the Goths it was a considerable city and bishop's see; 10 miles north of Valladolid.

AMPUGNANI, a town of the department of Golo (island of Corsica) the canton of which contains 4,143 inhabitants.

AMPULLA, in *Antiquity*, an oil-vial or jug, with a large belly, used for unctions at the baths.

The word ampulla was also used for a drinking vessel used at table.

AMPULLA, among *Ecclesiastical Writers*, denotes one of the sacred vessels used at the altars.

The word is sometimes also written in English *ampul*.

Ampullæ were also used for holding the oil used in chrismation, consecration, coronation, &c.

Among the ornaments of the churches we find frequent mention made of ampuls, or vials. In the inventory of the cathedral of Lincoln, we meet with ampuls of crystal, variously enriched with silver feet and covers: one containing a tooth of St. Christopher, another a tooth of St. Cecily, another a bone of the head of St. John Baptist. Dugdale. Mon. tom. iii. p. 272.

AMPULLA, *Knights of St. Ampulla*, belong to an order instituted by Clovis I. king of France; at the coronation they bear up the canopy, under which the ampulla is carried in procession. This ampulla, or sacred vial, with which the kings of France were anointed at their coronation, is said to have been brought from heaven by a dove, for the baptismal unction of Clovis I. the first Christian king of France, A. D. 496, and dropped into the hands of St. Remigius, then bishop of Rheims, where it has been preserved ever since for the purpose of anointing all succeeding kings; and its divine descent is said to be confirmed by this miracle; that as soon as the coronation is over, the oil in the vial begins to waste and vanish, but is constantly renewed of itself, for the service of each new coronation. The Abbé de Vertot vindicates the truth of this miracle, in a dissertation written for this purpose; and Baronius says, that it was a miracle worthy of the apostolical times. Archbishop Hincmar, in the year 869, is the first voucher for the truth of this legendary tale. Jortin's Rem. on Eccl. Hist. vol. v. p. 320. Middleton's Works, vol. i. p. 184.

AMPULLA, in *Conchology*, a species of BULLA. Shell roundish, opaque crown umbilicated. Linnæus.—A most common species in the Indian, Ethiopic, and American seas; about three inches in length; colour white, variegated with cinereous, black, brown, red, and bluish in spots and clouds. There are two, if not more, distinct varieties of this species;

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β the first, very oblong, opaque, dark, and scarcely an inch and an half in length; γ the second, transversely streaked, grey and black.

AMPULLA, in *Entomology*, a species of gammarus, having hand claws without fangs; fourteen legs: hind thighs compressed and dilated. Fabricius. This is a CANCER of LINNÆUS. Inhabits the northern ocean. Body almost white; proboscis incurvated and sharp-pointed. Tail of six leaves, last joint bifid.

AMPULLACEÆ CONCHÆ, in *Natural History*, a name by which some authors have called a tribe of shells, which, in the Linnæan arrangement, belong generally to the genus VOLUTA, or BUCCINUM: it is synonymous with *concha* *lobosa*, *dolium*, and *tonnes*. See DOLIUM.

AMPURA, in *Geography*, the name of a province in the kingdom of Peru, before its conquest by the Spaniards. The inhabitants are said to have worshipped two high mountains, because they furnished streams which fertilized the land. It is said to have been conquered by Virachoca, the eighth inca.

AMPURIAS, anciently *Emporia*, a sea-port town of Spain, and the capital of a district called Ampurdan, in Catalonia, situate at the mouth of the Fluvia. It was once considerable, and a bishop's see, but is now a mean place; 15 miles east of Gerona, and 58 north east of Barcelona. N. lat. 42° 10'. E. long. 3°.

AMPURIAS, *Castello d'*, a little town of Catalonia, seated in a bay.

AMPUTATION, in *Surgery*, is that operation by which a member is separated from the body. It differs from EXCISION, in that the latter is cutting out a part of the body; whereas, the former is cutting it off.

Amputation is one of the most formidable and important operations in the whole art of surgery: although it is by no means the most difficult to perform. The skill of a surgeon is often much more clearly evinced, by saving a condemned limb, than by dexterously removing it: so that "the most expert operator," as Mr. O'Halloran observes, "may not always be the best surgeon." Nay, "to do justice to the sick and to ourselves, we must, in many cases, rather avoid than perform capital operations." See Mr. O'Halloran's *Treatise on Gangrene and Sphacelus*; pref. p. 3—7. *et seq.* "As to amputation itself, that its indiscriminate use, or indeed, rather abuse, has been of infinitely greater detriment to mankind than service, must be admitted. We daily hear of sudden accidents that require amputation; and nothing is more common than to be informed, that the patient died in two or three hours after the operation. In sea engagements, where a limb is torn and shattered, death very soon follows mutilation; and after battles the recoveries bear no proportion to the deaths on this account.

"It was this great propensity to lopping off limbs," continues our author, "that caused a complaint to be exhibited to Louis the XIVth, that his surgeons estimated the importance of their service by the number of mutilations only; and they were obliged to defend themselves from this aspersions before a prince, who wisely rated the lives of his subjects too high to suffer characters to be gained at their expence. In fact, it is not enough for a surgeon to know HOW to operate; he must also know WHEN to do it." Mr. O'Halloran computes, that ninety-five patients out of an hundred ought to recover, where amputation is performed at a PROPER TIME, as well as in a proper manner; an acquisition highly honourable to surgery, and acceptable to humanity."

Historical Sketch of Amputation.

Although, from the earliest period of human existence,

there must have been occasion for performing this operation, we have no decisive proofs from history that it was ever done by the father of medicine, Hippocrates. A. C. Celsus, who lived in the reign of Tiberius, and whose book *De Re Medica* should be read by every surgeon, has left us a short description of the mode of amputating gangrenous limbs. It has been often remarked, that Celsus has left no instructions for securing the divided blood vessels; but it has not been commonly noticed, that in his chapter on wounds, he directs us to stop hæmorrhages by taking hold of the vessels, then tying them in two places, and dividing the intermediate portion. If this measure cannot be adopted, he advises the use of a cantherizing iron. Several hints are to be met with in the writings of Celsus, from which it may be inferred, that the ligature of bleeding vessels was sometimes practised in that early age; and this supposition is strengthened by a fragment of Archigenes, preserved by Coelius on the subject of amputation, where he speaks of tying or sewing the blood-vessels. We are not, however, in possession of all the writings of medical authors prior to the time of Galen, and must therefore remain in doubt upon this point.

Celsus recommends amputation to be performed between the sound and corrupted part of the member. The first incision was made with a knife down to the bone, but not over a joint; and some of the sound flesh was to be cut off, rather than leave any of the gangrenous part. The muscles were then to be retracted, and cut close around the bone, to lay it bare: then we were to saw off the projecting bone close to the flesh which still adheres; afterwards the rough edges of the bone were to be made smooth, and the integuments brought over it as much as possible. It is somewhat extraordinary that Galen has neither mentioned this important operation, nor so much as once quoted the name of Celsus, who flourished about a century before him at Rome. "If amputation proved often fatal in the days of Celsus, *sepe in ipso opere*," as he tells us, it was owing to the want of some efficacious method of compressing the blood-vessels during the operation itself; for, although the ligature might, perhaps, be employed, they knew not the use of a tourniquet. See TOURNIQUET, LIGATURE, CAUTERY, and HÆMORRHAGE.

The conciseness of the account left by Celsus renders it uncertain whether the edges of the skin were confined or not, so as to lessen the suppurating surface of the stump; but he evidently intended to preserve a large cushion of skin and muscle, in order to facilitate the cure. And as to the wound, so far as it remains exposed, he directs it to be covered with lint, and then bound over with a sponge dipt in vinegar. From the whole, then, it appears that the ancient Romans had tolerably correct notions of the art of healing. Paulus Ægineta, about eight centuries afterwards, suggests no improvement, except a broad fillet of cloth to retract the divided muscles during the time of sawing the bone: he recommends the application of hot irons, to fear the orifices of the bleeding arteries; and indeed, the early Greek practitioners were more disposed to use the actual cautery than the Romans.

The Arabian surgeons, who chiefly copied from the Greeks, made no material alteration in the mode of amputating; and were strangely inattentive to the advantages of the needle and ligature, which they well knew how to apply on other occasions. Perhaps this last assertion will be controverted; as a surgeon in Edinburgh has presumed to tell the world, in two of his late publications, that the Arabians were ignorant of the needle and ligature for tying blood-vessels, "and never used them otherwise, than by sewing a wound just so much the closer and tighter in proportion to the

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the bleeding." He says, "burning irons were used by the ancients, merely because they knew of *no other* means of suppressing the bleeding." Again, "In the times before Paré, not being able to take up an artery," &c.

We shall elsewhere have opportunity to treat of the *LIGATURE* of bleeding vessels; and therefore can only observe, by way of anticipation, that those who (with Mr. John Bell) impute the first discovery of this practice to Ambrose Paré, are greatly mistaken, and not sufficiently familiar with the writings of the old surgeons, whether Greeks, Romans, or Arabians. "It is not only entertaining but useful," says the late Dr. Hunter in his Commentaries, p. 63. "to see by what pursuits and steps an improvement was made; it gives clear ideas of the subject, makes a stronger impression upon the memory, shews the most probable road to improvement in similar inquiries, and raises emulation." But, says he, "if a man writes freely upon any subject, without knowing what has been said by others, he risks being made the object of ridicule or censure." *Ibid.* p. 60.

Guido de Cauliaco, who revived the languishing state of surgery in Europe during the 14th century, agrees with Avicenna and Albucasis, that it is better to cut off a mortified extremity than to let the whole body perish. He advises, when the gangrene is near a joint, to separate the articulation. In other cases he directs us to apply a tight ligature on the edge of the healthy part as well as on the gangrenous part; cutting between them down to the bone, and then sawing through, with a retractor interposed. But sometimes Guido would wrap up a mortified limb, and allow it to fall off of itself; by which means he avoided the odium of amputating members that his patients might have thought capable of preservation. After the example of his predecessors, he had recourse to hot irons, boiling oils, and astringent powders, to stop the hæmorrhage; although he disapproves the practice of Theodoric and others, who gave narcotic remedies to prevent or mitigate the suffering of their patients.

Methods of amputating, somewhat like that of Guido, were used by Bartholomew Maggus, Vesalius, and most surgeons in the 15th and 16th centuries; till Botallus and Regius proposed to lop off the limb by a sort of *GUILLOTINE*, at one stroke, after the manner in which criminals, formerly of Scotland, and lately of France, were decapitated. This summary treatment, however, caused so much contusion and splintering, that it was very soon opposed as unscientific and butcherly. The most important innovations made, about this time in amputating, were introduced by the celebrated Ambrose Paré, a French surgeon; to whose industry, good sense, and skill, we are chiefly indebted for the abolition of cauterising instruments, and the general use of a needle and ligature to suppress the bleeding, after this operation.

Paré recommended to cut off the whole of the gangrenous part, if the limb be mortified; but to encroach as little as possible on the living flesh. At the same time he laid it down as a rule, not to leave a very long stump to an amputated leg; because the patient could more conveniently, he says, make use of a wooden leg, having the stump only five fingers long below the knee, than if much more of the flesh were to be preserved. In the arm, however, he left the whole of the living and healthy portion of the member, only separating the diseased part from the sound.

In preparing for amputation, he directs the skin and muscles to be drawn upwards, and bound tight with a broad bandage, a little above the part where the incision is to be made. This fillet was intended to answer a threefold purpose: 1st, To afford a quantity of flesh for covering the bone and facilitating the cure; 2dly, To close the extremi-

ties of the divided blood-vessels; 3dly, To dull the patient's feelings, by pressure on the subjacent nerves. When this firm ligature has been applied, Paré directs an incision to be made down to the bone, either with a common large scalpel, or a curved knife: then, by a smaller curved knife, we are carefully to divide the muscle or ligament remaining between the bones of the fore-arm or leg; after which we may proceed to saw off the bone, as high as possible, and to remove the asperities occasioned by the saw.

With the assistance of a curved pair of forceps, he drew out the extremities of the bleeding arteries, either by themselves alone, or with some portion of the surrounding flesh, to be firmly tied with a strong double thread. He now loosened his bandage, brought together the lips of the wound over the face of the stump, and kept them as close as he could, without actual stretching, by means of four stitches or sutures. If the larger tied vessels should accidentally become loose, he desires the ligature or bandage to be again passed around the limb; or else, which is better, to let an assistant gripe the limb firm with both hands, and press with his fingers over the course of the bleeding vessel, so as to stop the hæmorrhage; then, with a square-edged needle about four inches long, and a thread four times doubled, the surgeon must secure the artery in the following manner: Thrust the armed needle into the outside of the flesh, half a finger's breadth from the vessel which bleeds, and bring it out at the same distance from the bleeding orifice; then surround the vessel with the ligature, pass it back again to within one finger's breadth of the place where it first entered, and tie a fast knot upon a folded slip of linen rag, to prevent its hurting the flesh. Paré, by this means, says, the orifice of the artery will be agglutinated to the adjoining flesh so firmly, as not to yield one drop of blood: but, if the hæmorrhage were not considerable, he contented himself with the application of astringent powders.

The limb was afterwards treated according to the old plan, with "defensatives, repurcussives, and agglutinatives." The first dressing was not removed for three or four days; but, when a suppuration came on, the "digestive, detensive, and mundificative remedies" were employed, until the ligatures might be safely removed, and exfoliation of the bone took place. As the surgeon saw proper, it was also recommended by Paré to hasten the exfoliation by the actual cautery applied to the extremity of the bone only; and to keep down fungous flesh by the use of burnt alum, blue vitriol, or red nitrated mercury.

Thus did this famous surgeon endeavour, by his single example and precepts, to exclude the barbarous use of hot irons in amputation. He says, he knew not of any such practice among the old surgeons; except that Galen recommended us to tie bleeding vessels, towards their origin, in accidental wounds, and he thought proper to do the same in cases of amputation: but in an apology at the end of his book, Paré has quoted, in his own defence, a dozen authors, who employed or recommended the ligature before him; and he might have cited many more.

From the statement we have here given, it may be seen how far our best writers, of every country almost, have erred in ascribing the original invention of tying arteries to Ambrose Paré. Great merit, indeed, was due to him for the part he took in extending, and even reviving this incomparable practice; nay, it is not certain whether any one before him had ever applied the needle and ligature in similar cases, *i. e.* after amputation: but how very wide of the truth Mr. John Bell's recent account of this matter is, will appear to every person who will enquire into the facts themselves; for not only were needles and ligatures in use among the an-

ients, but likewise the TENACULUM or hook to lay hold of the bleeding vessels when they had buried themselves in the muscles. We refer our inquisitive readers to Avicenna, Aëtius, Albucasis, Brunus, Theodoric, Guido de Cauliaco, John de Vigo, Bertapalia, Tagaultius, Petrus Argillata, Andreas a Cruce, &c. &c. where they will find enough to satisfy them on this head.

From the time of Paré to the commencement of the seventeenth century, a variety of petty reformations and alterations were proposed in amputating; but the surgeons were backward to adopt the needle and ligature in ordinary practice, choosing rather to apply astringent, vegetable, and mineral substances to the bleeding vessels, or to cauterize them with burning irons. One surgeon of note (John Woodall, who was many years surgeon-general to the East India Company, and surgeon of St. Bartholomew's Hospital in London) ventured to deviate from the common rule of dismembering in the sound part of a gangrenous limb. He published a treatise in 1639, chiefly to recommend "the amputating of any member in the mortified part;" and declared that this had been his custom since the year 1617, having amputated in that manner above a hundred limbs, "of which not one died in the cure." He used to wait till either the mortification had ceased, or till a circular line of separation appeared between the gangrenous and the sound part; then he would cut through the limb about one inch below the line, and gently remove the mortified portions of flesh. To facilitate the exfoliation of the bone, it was burnt with the actual cautery, as had formerly been practised by Vesalius and other of his predecessors. The limb was afterwards fomented, and warm dressings applied to encourage the supuration.

Woodall relates, that it was at this time no uncommon thing for criminals, who, in the East Indies, had their feet chopped off at the ancles, to get so well cured as to run on errands for their livelihood, after having put their stumps into large bamboo canes or reeds stuffed with cotton, &c.

Numerous applications, mechanical, chemical, and pharmaceutical, having been thought of to prevent bad and fatal hæmorrhages after bleeding, it occurred to our countryman, James Young, that a more secure way of compressing the artery during amputation would be as follows: He placed a hard wadd or bolster of linen cloth upon the inside of the arm or thigh, exactly in the course of the main artery; then, passing a towel or bandage around the member, he tied the ends together, and twisted them so very tight with a stick or battoon, as to stop the circulation through the blood-vessels. When the limb was amputated, he says, there was scarcely any bleeding, and the pain was greatly diminished by the compress. Before the dressings were applied, he advises to loosen the tourniquet a little, in order to observe where our care and astringents are most wanted. This proposal is described in a curious and scarce book, published at London, A. D. 1679, entitled, "Curtus Triumphalis à Terebinthò:" where may be likewise seen the first hint of the method of amputating with a flap, since claimed as a discovery by two continental surgeons Verduin and Sabourin; but whether or not these writers borrowed the suggestion from Mr. Young, is uncertain. As this mode of amputating is still very frequently practised, and in many cases is unparalleled for its simplicity and advantages, we extract part of the author's original account, where he thus addresses his friend:

"Sir, I find by yours, that you are surprized with the intimation I gave you, of a way of amputating large members, so as to be able to cure them per symphylin in three

weeks, and without soiling and sealing the bone.—I shall now entertain you with an account of the manner of this operation I would recommend to you, after I have told you that it was from a very ingenious brother of ours, Mr. C. Lowdham, of Exeter, that I had the first hints thereof. The ligatures and gripe being made after the common manner, you are with your catling, or some long incision-knife, to raise (suppose it the leg) a flap of the membranous flesh covering the muscles of the calf, beginning below the place where you intend to make excision, and raising it thitherward of length enough to cover the stump: having so done, turn it back under the hand of him that gripes, and as soon as you have severed the member, bring this flap of cutaneous flesh over the stump, and fasten it to the edges thereof by four or five strong stitches: having so done, clap a dossil into the inferior part, that one passage may be open, for any blood or matter that may lodge between; but of that there seldom occurreth any: then lay on a common desensative, *z. bole. sang. dracon. mastich. terræ sigil. cum alb. ovor. & aceto*, and thereto girt it close with your cross bandage, and other compresses, after the usual manner; the former, *viz.* the desensative, not only defends from accidents, as heat, pain, fluxion, &c. but gently constricteth the vessels, thereby contributing to the securing the hæmorrhage, and very considerably assists to the agglutination: the latter, *scil.* the cross bandage, keeps the flesh snug and close to the ends of the divided vessels, confirms the consolidation, keeps the parts from cavity, and the blood from extravasation, and hinders that reflux of humours which would otherwise destroy the intention of cure.

"In this sort of amputation, that manner of compressing the thigh by ligature, or the arm near the shoulder, which I have recommended in the foregoing discourse, is of excellent use; because thereby you may retain the descent of the blood, till by your dress and bandage you have so far secured the part as that it can receive no damage thereby.

"In this way of cure, phlebotomy, juleps, ligature of the extreme parts, if need be, with what else may con-temporate the blood, hinder defluxion and maturation, and promote consolidation, though declaimed against in that discourse, is in this case very useful and necessary.

"In the succeeding dressings, medicines healing per symphylin are to be used, and amongst them, perhaps, there are none better than that already mentioned, adding some powder of the roots of great comfrey thereto; the dossil, if you use any, may be left out the next dressing, or that following it.

"That this method hath cured such a stump in *three weeks*, is a truth I can vouch by sufficient testimony; and I believe you will not much doubt it when you have perused this, and considered how easy and soon such large consolidation hath been made.

"I must not forget to intimate to you that this manner of dismembering, &c. is not to be made use of where the part hath been much inflamed, tumefied from fluxion, or otherwise vexed therewith, nor in members amputated for chronic causes; as cancers, fistulas, &c. or where the body is poeky, or very cachectic, because in such digestion (which would destroy the union) is necessary to rectify and sweeten the mass, which it doth by draining off the mæstra of the disease more than ten fontanels can do. It is also no less unavoidable; for the course of matter that hath that way discharged itself so long (as in a fistula), cannot of a sudden be obstructed, without hazard of a mischievous apostumation: moreover, in such ill habits as those cases either cause or re-

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sult from, consolidation is difficult, if not impossible to be so suddenly performed, as this manner of cure requireth: the dyscrasis of the blood having destroyed or weakened its balsam that it cannot expedite the work, which, if not speedily done, cannot be performed securely and firm; and in parts inflamed and tumefied by fluxion, or by congestion, it is easy to imagine there must be a discharge of that concrete matter, which cannot be, and yet the wound cured by sympathy.

“But in most of the amputations made at sea in fight, or on land in battles, or wherefoever acute accidents, such as wounds, recent lacerations require it, it may be done, and that with those advantages of the other way it rivals.”

The author next enumerates eight very singular advantages with which this *new* method is attended, and then concludes his letter as follows:

“These are all the considerable advantages manifestly acquired by this *new way*: without doubt use and trial will discover more, equal to them, and an abundance of lesser conveniences, which at present occur not to my consideration: these are enough to shew the novelty to be considerable and worthy of imitation: let them have with you this accessional manifestation, that I am very ready to obey and serve you.

“*Plymouth, Aug. 3, 1678.*” “JAMES YOUNG.”

We thus have demonstrated, though it is not commonly believed, that what the French call “*OPERATION A LANBEAU*,” claimed as the invention either of Verduin or Sabourin, was put in practice by surgeons of Exeter and Plymouth before the year 1678. The different improvements and suggestions of more modern authors, will be noticed in our account of the amputation of particular members.

Of the Causes which may render Amputation adviseable.

Previous to the time in which the needle and ligature were generally had recourse to, for securing the divided arteries after amputation, this formidable operation was but rarely ventured upon, by even the most enterprizing surgeons; so that, we seldom read among the older authors of a limb having been amputated, from any other cause than a complete mortification. About the middle of the last century, however, the practice of inconsiderately taking off diseased members was so common, that several eminent surgeons attempted to prove it was never, or scarcely ever, absolutely needful. This opinion, although it originated from the best motive, was certainly untenable; since cases daily occur, in which, for want of amputation, patients must either inevitably die, or would only preserve their limbs at the hazard of dragging out a miserable existence, perhaps worse than death itself. Two general causes, at least, will therefore justify the performance of amputation: *First*, when the life of the patient is considerably endangered, by keeping his limb; *secondly*, when its preservation does not secure a more useful member than an artificial one.

The surgeon must know well how to distinguish the circumstances in which the amputation of a limb is necessary, or may even be considered as a benefit; and in which, should it be delayed, or conceived to be unnecessary, the patient would run the risk of losing his limb or his life. To form a determination is no easy matter, and in many cases extremely difficult; especially as, in forming it, we have also to consider whether, by means of the operation, the patient's life or limb can really be saved. For in the cure of limbs that have been materially wounded, the event often depends upon the constitution of the patient, his age, and the air in which he lives;

and it is rarely possible to form a sure prognostic at first, as the symptoms, from which it can be drawn, generally do not make their appearance till during the progress of the cure. Now, though it cannot be denied, that amputation has in many instances been performed when there was no necessity for it, it would be folly to imagine that it may in all cases be avoided. For there certainly are numerous diseases incident to the extremities, in which this operation is the only means of alleviating the sufferings of the patient, and even of saving his life.

1. A *CARIES* OF THE BONES, whatever be its degree and magnitude, is not a sufficient reason for amputation in a young subject, at least not till every possible means have been tried for the preservation of the limb: but when the disease has spread very far, so that no benefit can be expected from the common milder remedies; and when the caries is moreover advancing, and combined with deep spreading ulcers in the surrounding soft part, we have certainly no other remedy left but the operation. However, even in this case, it would be necessary previously to examine, whether benefit were really to be expected from the operation; that is, whether the caries were confined entirely to the part, or, whether it had not spread itself already too far to admit of a cure.

2. When the bones of a limb have been entirely shattered by a *GUN-SHOT WOUND*, and all the muscles, ligaments, vessels, and nerves have been so lacerated by it, as to render the circulation of the blood into the fore-part of the limb altogether impossible, and that its death is altogether inevitable; farther, when a whole limb, or a part of one has been torn off by a cannon-ball, or by any other means, in such a manner that the bones are broken off into uneven splinters, and remain uncovered, and the muscles and tendons likewise are of unequal lengths, and at the same time very much torn and bruised; in both these cases the necessity of the operation is evident.

3. When a large *ANEURISM* of long standing has destroyed the texture of the surrounding parts, and has produced a high degree of suppuration, especially if it be in a joint, amputation is necessary, on account of the diseased state of the surrounding parts; for, on account of the aneurism alone, it would never be adviseable. But it also becomes necessary when, after the operation for an aneurism has been performed, the limb does not acquire again its warmth and sensibility, but dies away. See the article *ANEURISM*.

4. In *COMPOUND FRACTURES*, let them have ever so unfavourable an appearance, amputation is never allowed, provided we are able immediately to procure for the patient all the requisite medicines, rest, attendance, pure and wholesome air, and proper nourishment; for even in the most desperate seeming cases a cure has sometimes been effected. But when, for example, in armies and fleets, every thing requisite for the cure of the wound is wanting, we are obliged to proceed to amputation; which must either be performed very soon after the injury has been inflicted (especially if the bones be shattered near a joint), or delayed until its most immediate effects and consequences, namely, the swelling, inflammation, and fever, have made their appearance.

5. In *LARGE WOUNDS*, combined with much *LACERATION* and contusion, it is extremely difficult to determine the necessity of the operation, which, consequently, ought never to be performed immediately after the wound has been inflicted; but it is at most admissible afterwards, when the wounds suppurate so profusely as to exhaust the strength of the patient, or when they become gangrenous, or when a hæmorrhage

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hemorrhage is produced that can be stopped by no other means.

6. In **WHITE SWELLINGS**, when the bones have become carious, the operation is always indicated; but good effects can only be expected from it when the disease is still merely or chiefly local. When it has already become general, or when it is the consequence of a serofulous habit of the body, it is in the first case always, and in the second generally, unsuccessful.

7. In large **SWELLINGS** of the **BONES**, that either endanger the life of the patient, or on account of their size, or from some other cause, become unbearable, the amputation of the limb is the only remedy that remains; provided there be no cause present that renders it inadmissible.

8. **CANCEROUS SORTS**, which, in some rare cases, attack the extremities, may indeed now and then be extirpated without amputating the limb; however, when the disease has already spread itself far among the surrounding parts, and has attacked the bones and ligaments, the amputation of the limb, above the disease itself, may be of some benefit.

9. In other extensive and malignant **ULCERS**, that do not arise from any internal and general cause, and which materially vitiate the whole mass of fluids, injuring the health, and, instead of yielding to the remedies that are employed, spread farther and farther, and become more and more obstinate, we are obliged to advise amputation, as the patient's life is actually in danger.

10. **INCYSTED TUMOURS** are sometimes very deep seated, or are even produced within the bone or upon the periosteum, and increase to a considerable size; so as by the pressure they occasion, to injure the texture of the surrounding parts, and not only to render the bones carious, but entirely to dissolve them. In such cases the operation may, under certain circumstances, be rendered necessary.

11. The extremities, and, according to Dr. Richter, most frequently the feet, are sometimes affected with a singular kind of tumour, the peculiar character of which has not as yet been accurately defined, but for which no remedy has hitherto been discovered, except amputation. The reader will find it described under the head of **OEDEMA**.

12. Sometimes also the **DISTORTION** of a limb may be so considerable, and cause such great inconvenience, on account of its stiffness, that the patient will rather lose the limb than remain longer in that condition. If we are not able to cure or relieve the distortion by any milder means, we may with propriety comply with the desire of the patient.

13. Finally, a **GANGRENE** may render the operation necessary; but that this is advisable in only a few cases, the reader will find maintained under the head of **GANGRENE**.

When, therefore, it appears, upon due consideration of every circumstance, that the diseased limb cannot be preserved, and that the life of the patient can only be saved by immediately amputating it, the operation must be undertaken without farther delay. Considered of itself, it is not so dreadful an operation by far as it formerly was, nor are its consequences so precarious and troublesome; and the cure is effected much more speedily, provided that, in performing it, all the rules prescribed by the present improved state of surgery are observed.

For performing the operation most of the following instruments are requisite:

1. Two straight knives, the blade of one to be from six to seven, and that of the other from five to six inches in length. The first of these is used in amputating the thigh, and the second for the rest of the limbs.

2. A small, narrow, straight knife, or catlin, edged half way down the back, three inches and a half long, half an inch broad. This is used for cutting through the flesh between the two bones, in the fore-arm and leg, and for dividing the periosteum.

3. A fine sharp saw, for sawing through the bone. The blade may either be made of a steel spring, about ten inches long and half an inch broad; or of a wide steel blade, strengthened by a firm back, as represented in the plate of amputating instruments. The handle should be of a size proportioned to that of the blade; it also should be smooth, and without much ornament.

4. A smaller saw, made of a watch-spring, for separating splinters, and dividing the bones of the fingers, &c. The blade of this saw must be provided with a serew, by which it may be turned in either direction.

5. A small straight saw without a frame, for separating splinters in parts where the first saw cannot conveniently be applied.

6. A small pair of scissors, with long handles, for dividing membranes, ligaments, and tendons.

7. A pair of forceps, with a sliding button, for laying hold of the arteries; or, which will answer the purpose better, a tenaculum, with a light handle.

8. A tourniquet. (See the description of this instrument.)

9. A slip of parchment, eighteen inches long, and from four to five broad; it ought to have a slit as far as the middle, terminating in a circular hole. (See **RETRACTOR**.) Its use is to draw back the muscles. We may also use instead of it, a broad leathern strap, or a fillet of linen of the same shape.

10. Two tapes, half an inch broad, for tying round the limb, one above the other, under the place where we intend to make the incision. Still more useful for this purpose, especially when the limb is fat and flabby, are narrow leathern straps with buckles, which hold the flesh firmer than the others. But many surgeons use neither of them.

11. A quantity of adhesive plaister cut into slips.

12. Two single headed bandages, the many tailed bandage, or a woollen cap.

13. A number of pledgets and compresses.

14. Lint, needles, and waxed thread.

General Rules of Practice.

In performing this operation the surgeon must be particularly attentive to the choice of the place where he should amputate; to the prevention of any violent hemorrhage during the operation; in cutting through the skin and muscles, to the saving of as much of these parts as is necessary for entirely covering the stump; in tying up the arteries, he must be careful to spare the neighbouring nerves and other parts as much as possible; he must be attentive to the support of the external integuments, that they may not shrink back again after the operation; and, finally, to the subsequent treatment of the patient, till he is completely cured. In general, a successful event depends upon the surgeon promoting, by every means in his power, a speedy union of the parts, or the healing of the wound without suppuration; the chief method by which this important point may be obtained, is by preventing all exposure of the wounded surface, and retaining the integuments in close contact with the subjacent bone, &c.

Ordinary Steps of the Operation.

Having determined on the propriety of amputating, and fixed the time in which it should be performed, we should prepare and arrange the necessary apparatus. Previously to commencing

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commencing the operation, the surgeon will not fail to see every thing in the part which may be wanting, either for his own use or the patient's comfort. When the assistants have been properly instructed, a tourniquet is first to be placed over the main artery of the limb to be amputated, so as to stop the circulation entirely. On some occasions a tourniquet cannot be applied, and in such cases a careful person is to be appointed to the office of preventing the hæmorrhage by other means. The limb being firmly secured, an incision is then to be made through the skin and cellular membrane, down to the muscles, by one circular stroke, except when the *flap operation* has been resolved on. The integuments are next to be raised, and turned back or drawn up from the muscles, more or less, according to the circumstances of the case, for the purpose of afterwards furnishing a covering to the face of the stump: in thus separating the integuments, we must have particular regard to the size of the limb. At the lower edge of the reflected skin and fat, the operator begins his second incision, carrying it through to the bone, in an oblique direction upwards, by holding his knife a little slanting. The retractor, if one be wanting, is now to be applied; and, by means of the double-edged catlin, the flesh, &c. is to be divided between the bones (in the fore-arm and leg). A small line of separation must also be made through the periosteum, but it is not to be scraped, for the entrance of the saw; after which the bone or bones will be divided, by slowly repeated long strokes with the saw, taking care not to make splinters. Having next secured the bleeding vessels, by ligature alone, and wiped away the coagulated blood, after slackening the tourniquet entirely, we finish, by bringing the lips of the wound neatly in contact, retaining them by cross slips of good adhesive plaster, laying soft lint, &c. over the outside, in the direction of the edges of the wound, and bandaging the stump, with the ligatures hanging out at one corner. Thus may we frequently effect a cure in twenty or thirty days, by healing without suppuration, and without danger, after taking off the largest extremities; especially in quiet, airy situations, and with healthy young patients.

Amputation of the Thigh.

In this operation, the patient is to be reclined upon a table of the ordinary height. A common tourniquet must be applied as near as possible to the upper part of the thigh, immediately under Poupart's ligament, in such a manner, that the compress comes to lie straight upon the femoral artery: the fillet laid over it is to be screwed or twiled, by means of a short stick, over a piece of horn or leather placed on the opposite side, so tight, that not only no blood can flow through the large artery, but so as also to squeeze together all the muscular parts as closely as possible. A tourniquet of this kind (see the *PLATE of Surgery*) prevents a hæmorrhage, not only from the principal trunk of the artery, but also from all the lateral branches, and is therefore preferable in such cases to the screw tourniquet. Some surgeons, during the operation, never make use of a tourniquet, but have the artery strongly compressed by an assistant with his fingers and a cushion.

It is a general rule, that we ought never to amputate more of the thigh than the disease absolutely requires; for the more of it we suffer to remain, the more useful the stump will be. Where the injury done to the limb is such, that only the leg is damaged up the knee, we amputate the thigh about a hand's breadth over the knee, in order to gain a quantity of skin sufficient for properly uniting the parts. The incision through the skin must be made at least three fingers breadth lower than the second cut, by which the muscles are divided. In order to hit upon the right mea-

sure, we must principally attend to the thickness of the thigh, for the thicker it is the more skin we must endeavour to gain; but it is in general better to save too much, than too little, of the integuments.

Two assistants, who stand at the head of the patient, hold fast his arms, and a third secures the sound leg. The diseased limb is held by two assistants in a horizontal position, with the knee moderately bent. One of these holds the limb, with both his hands under the knee, firm and immoveable; the other supports the thigh in the middle, holds it fast, and at the same time draws the skin tightly upwards. The operator now applies one of the small fillets to the place where he intends to make the first cut; namely, when the whole thigh is sound close over the patella, and draws it very tight in an exact circle round the limb. With the assistance of this fillet the cut may be made more even and circular; and the fleshy parts, particularly the integuments, are prevented from shrinking and impeding the operation, being held fast and tense at every point. This fillet, therefore, is of great and essential use in the operation, and ought certainly to be retained, though some may be inclined to reject it as superfluous. But to apply a second fillet above the cut, as some do, is unnecessary. The operator, who stands on the outside of the limb, now cuts through the skin and cellular texture, with a straight, strong, and sharp knife, close over the upper margin of the fillet, in an exact circle, without cutting into the muscles. In performing this part of the operation, great attention is necessary, in order that the incision may not be made too superficial, or too deep, or even crooked. When the operator has divided the skin all round, but not the fascia lata, by this first cut, he next divides the fascia cautiously, by repeated cuts, without penetrating into the muscles; after which the skin may be more easily drawn back as far as he thinks proper. The skin is now to be retracted in a uniform manner, in order that the second cut may also be made exactly circular; the first assistant must, therefore, be well acquainted with the method of performing this operation.

When the skin has been drawn back full three fingers breadth (too much is always better than too little), the operator, using the same knife as before, cuts the muscles through down to the bone, close to the margin of the retracted skin, with a perpendicular, even, and circular incision. Some surgeons, however, cut through *obliquely*, by slanting the edge of the knife upwards. If the operator has acquired sufficient dexterity by practice, he will always be able to make this incision without carrying the knife twice round the limb.

"As it frequently happens, in amputating the thigh," says Professor Murinna (*Neue Med. u. Chirurg. Beobachtungen. Berlin, 1796. 8. pag. 515*), "after the circular incision through the muscles, though these are divided three fingers breadths higher than the skin, that the flexor-muscles of the leg contract more than the extensors, and thus, at times, produce a deformity of the stump, which occasions some inconvenience in wearing a wooden leg; this accident might be prevented, by keeping the patient's knee moderately bent, whilst cutting through the extensors, and extended whilst making the incision through the flexors. The incision will, nevertheless, be even and circular; and when performed in the above mentioned positions of the limb, will prevent any deformity of the stump; for the flexors of the leg contract with much more force, after the incision, than the extensors; in order to avoid which, the former must be cut through at their greatest elongation, consequently when extended, and the latter when contracted. By this practice

no time is lost, nor any additional pain given to the patient; and both the cure is more speedily effected, and the stump acquires a better form."

"Generally (says Dr. Richter in *Medicin. u. Chirurg. Bemerk. &c.* B. I. Gottingen, 1793. 8. pag. 232.) the flexor muscles contract with much greater force than the extensors after amputation of the thigh. They do the same during the progress of the cure also, and consequently, even in the most rapid cure, attended with no suppuration, the stump generally grows uneven at the bottom, which causes inconveniences in the application of a wooden leg." He accedes therefore to Prof. Mursinna's opinion, that the extensors should be divided higher and the flexors lower, consequently the first with the knee moderately bent, the second with the knee extended. This practice deserves, therefore, to be generally recommended.

According to Mr. Alanfon's method, the knife ought to be conducted in a slanting direction, with the edge directed upwards, in order to form a hollow cone; but few surgeons have any opportunity of acquiring the dexterity requisite for performing the operation in this manner, by practising it upon dead bodies; and it is not done by some of the most noted surgeons on the continent. Professor Callisen (*Tode Medicin. Journal*, B. I. Copenhagen, 1793, p. 106.) does not make his incision in the form of a cone, but cuts through the skin at the requisite distance from the place where the bone is to be sawed through. He next separates the skin from the muscles, as far as is necessary, in order to turn it back like the cuff of a coat. He next cuts through the flesh, saws off the bone, binds up the vessels; and, lastly, draws down the retracted skin over the stump, and folds it together in such a manner as to make it form an oblong slit from above to below, out of which the ligatures of the vessels hang.

"To hold the knife obliquely (says Prof. Mursinna in *Neue Med. u. chirurg. Beobachtungen*, p. 165.), with the edge turned upwards, in cutting through the muscles, so as to form a conical incision, is a refinement upon the operation, which it is equally difficult and unnecessary to practise."

"I am still of opinion," Dr. Richter remarks (*Med. und Chirurg. Bemerk.* B. I. p. 232), "that the operation by means of which Mr. Alanfon endeavours to make the stump itself hollow, is very difficult, if not entirely impracticable." He performed the amputation in the following manner: The incision was made three fingers breadth above the knee. An assistant laid hold of the limb, with both hands, above the place of the incision, and secured the skin. By the first circular incision, the operator divided not only the skin, but also the cellular texture, as far as the external surface of the muscle; this must necessarily be done, if we wish to be able to draw the skin much upwards. When the cellular texture has not been completely divided, we shall generally find that it becomes tense, whilst we are drawing the skin upwards, and thus prevents its being retracted so far as it otherwise might. Whilst, therefore, the assistant drew up the skin as much as possible, the operator made a second circular incision, close to the margin of the retracted skin, with which he again divided the cellular texture as deep as to the surface of the muscles, whereby the assistant was enabled to draw up the skin still much higher; so that now the upper margin of the skin was at least three full fingers breadths distant from the lower. The separating and turning back of the skin, according to Mr. Alanfon's method, he considers as a very tedious and difficult operation. With the third circular incision he cut into the muscles along the margin of the retracted skin, not so deep as down to the bone, however, but only

about half way through. He now directed this divided external layer of flesh to be drawn upwards, as much as possible, with the slit compress; and with a fourth circular incision along the margin of the retracted skin, he cut through the remaining flesh to the bone. The whole of the flesh was now drawn back with the slit compress so strongly, that the bone was laid bare the length of at least two fingers breadths, and could be sawed off to that height. When the skin and muscles were drawn down, the stump formed a conically excavated surface, at the upper point of which the bone lay so deep within the flesh, that it could not be seen. After the vessels had been tied up, the stump was pressed together on both sides, so that the wound formed a slit in a straight direction from before to behind. The edges of the skin were so close to each other, that the wound resembled a very narrow fissure. The skin was fastened together with adhesive plaster, and the flesh and the stump were pressed together by pads of lint applied to both sides, and then confined by a bandage. The ends of the ligatures hung out at the lowest and posterior angle of the wound. Even on the fifth day, three quarters of the wound, from the top, adhered together, and were quite dry; the lowest quarter, out of which the ligatures hung, was still moist, but discharged only a very few drops of pus during the whole course of the case. On the eleventh day the ligatures were separated, and the remaining small orifice closed in the space of a few days more.

When all the muscles have been cut through to the bone (whether we have recourse to Richter's or Alanfon's mode), the slit compress is applied; by means of which the remaining muscular parts are covered, and these are, at the same time, somewhat drawn back by the hands of the assistant, in order that the operator may be able to use the saw with more freedom, and saw off the bones higher up. When this has been done, the periosteum is divided circularly, as high as possible, with a short, strong knife, and peeled downwards. The saw is now applied horizontally, and the bone sawed through. The operator saws slowly at first, but when the saw has laid proper hold of the bone, he moves it somewhat quicker; and, at the same time, the assistants hold the limb rather high at the superior part, and low at the inferior, so as to bend it somewhat afunder, in order that the saw may not get wedged in during the operation. When the bone is nearly sawed through, the saw is again moved slowly and with short strokes, in order that the stump may become as smooth and even as possible. Should there still remain any small projection on the bone, this must immediately be removed.

As soon as this has been performed, the vessels are to be secured by ligatures. The principal trunk is first tied up, and if it be at the division of the artery, both branches are included in one ligature. For this operation a triple thread is used, which is fastened together with wax, so as to form a flat ligature, in order that the artery may be tied fast with it, without danger of its cutting through. This thread is inserted into a crooked needle; the artery is laid hold of, at its orifice, with a tenaculum, or crooked sharp hook; it is then drawn forwards, and the needle being introduced under the vessel, in such a manner as at the same time to perforate the cellular texture on both sides, it is pulled through. The assistant now holds the hook, whilst the operator takes hold of the ligature inserted under the artery, and ties it fast with a double knot, over which some surgeons make another single one, about two lines above the extremity of the vessel. The ligature is generally left of such a length, that it can be conveniently fastened upon the skin on the outside of the wound. Should we find it difficult to discover the trunk of the artery

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tery in proper time, the tourniquet must be loosened, upon which the spouting of the blood immediately discovers its orifice. In order to discover the orifice of the lateral vessels, the tourniquet must always be quite loosened, that they may also be bound up in the manner already described.

As the adhesion of the parts, and the healing of the wound depend upon the blood being entirely stopped, it is necessary that all the lateral vessels which discharge any should be tied up; for which purpose the surgeon, when he has loosened the tourniquet entirely, wipes the stump with a wet sponge, examines whether any of the branches discharge blood, and ties up those which do, be they never so small. When no more blood is discharged, the stump is once more wiped with the sponge, entirely cleansed from the blood, and the lips of the wound are brought together.

The ends of the ligatures, if there be many, ought to be distributed between both angles of the wound, that they may not form a thick bunch, and occasion inconvenience by their pressure. When every part of the operation has been performed in manner above directed, the adhesion will take place easily; but if the directions are not observed, it will sometimes not take place without much difficulty and pain.

The lips of the wound may be brought together in two different ways. Some press them together, on both sides, so that the wound forms a perpendicular slit, which runs in a straight line from the fore to the back part of the thigh, and let the threads of the ligatures hang out of the lowermost and posterior angle of the wound. Others press them together, so as to form a horizontal fissure: in this manner the stump can lie conveniently, and the fluids may still be discharged by the two lateral orifices of the wound, out of which the threads hang. By this method the stump also acquires a better form than when the fold is made perpendicularly.

When the lips of the wound are brought together in either of the abovementioned ways, they must be made to apply neatly to each other, and all the points of the sides of the wound brought into close contact. Whilst the surgeon holds them together in this manner, an assistant applies from four to six slips of adhesive plasters; then lays over the edges of the wound some loose dry lint, and covers this with a quantity of the same substance, spread with a mild, healing ointment. The whole is finally secured with a long bandage, which is applied at the upper part of the thigh, and carried down in spiral folds round the limb to the bottom, where it is doubled round, and carried up again to the upper part; it is then doubled round, and brought over the fore side upon the wound from behind upwards; and these folds are repeated over both sides of the thigh and over the wound, in such a manner, that one fold always half covers the other. The whole thigh is thus surrounded with the bandage. These folds are then secured by circular folds from below upwards, without crossing the bandage over the stump, as that would be an impediment to the adhesion of the wound; but by this method of bandaging, the retraction of the skin is prevented, and the adhesion promoted.

After the bandaging has been completed, the patient is placed in a convenient posture, and the thigh is laid upon a bolster, gently bent; for if laid horizontally, or even lower than the horizontal line, it not only causes pain to the patient, but the flexor muscles of the thigh constantly tend to bend it and bring it to the abovementioned position. If we attempt to counteract this tendency, by applying force to the limb, it becomes convulsed, and the adhesion is frustrated.

If no particular symptoms forbid it, the first dressings are suffered to remain on till the fourth, fifth, or sixth day;

and when all this is still properly united, the adhesive plasters are nevertheless left in their places, the wound is cleansed from the impurities that have been discharged, and the limb is bandaged in the manner above described. If any of the plasters have broken loose, or the lips of the wound have separated at any part, the plaster is cut through over the wound, without pulling it off, and a new one, or if it be necessary, several are applied, in order to bring the separated lips of the wound into proper contact.

Instead of the circular bandage above described, some advise the limb to be rolled with Loder's twenty-seven-tailed bandage, (D. Just. Chr. Loder, Chirurg. Medicin. Beobachtungen, &c. lib. i. Weimar, 1794, p. 14. Tab. I. fig. 4. 5.) in which case a circular bandage is first applied to the upper part of the thigh, and carried down to the bottom in spiral folds, so close to each other, as to prevent the retraction of the skin and muscles, but not to excite pain, or obstruct the circulation. The bandage is fastened with a pin at the lower part of the stump, leaving for future use a piece large enough for folding two or three times round the limb. After the whole of the bandaging has been performed as above described, the remaining part of the fillet is folded twice or thrice round the limb, so that the pressure can be increased or diminished at pleasure, and finally the twenty-seven-tailed bandage is applied.

While we apply the circular bandage, the tourniquet must be removed, but it must be again applied as soon as we have finished the bandaging of the limb, in order that we may be able immediately to stop any hæmorrhage that may come on; for which purpose it must likewise be kept applied for several days after amputation has been performed.

When the patient has been put to bed, and a hooped frame laid over the stump, he should immediately receive an opiate, in order to prevent involuntary spasmodic motions of the stump. During the first days after amputation, an assistant ought frequently to examine the thigh with great care, in order that if he should find blood to flow from any of the vessels, he may draw the tourniquet as tight as is necessary to prevent any material hæmorrhage, till proper assistance can be obtained. If there exude only a small quantity of blood from the surface of the stump, it is unnecessary, on that account, to remove the bandages; but when the hæmorrhage is considerable, it can only be stopped by the application of ligatures; for were it even possible to stop it by compression, this would frustrate our principal aim, namely, the speedy union of the parts without suppuration. After we have stopped the bleeding, we must apply the bandages as before directed.

When every thing goes on according to our wish, the bandages are only renewed every two or three days, in order that we may not impede the uniting of the parts; but oftener, if the suppuration becomes more copious, or a new pain is perceived in the wound. Commonly about the 10th or 11th day, sometimes later, the threads of the ligatures may be drawn out by gently pulling them; frequently they grow loose and fall out of themselves. When the threads have been detached, the open angles of the wound are to be united nearly in the same manner as before; after which the complete cicatrization of the wound takes place in a longer or shorter time, but commonly in a week or a fortnight more.

To prevent inflammation, the patient should be strictly treated during the first days after the operation, according to the antiphlogistic regimen; though this must be used with great caution in exhausted and debilitated constitutions, lest by too strict a regimen we might impair the strength of the body. When the pyrexia has abated, and the patient is in a

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state of debility, we give him Peruvian bark, prescribe proper diet, and, at the same time, take care to keep his bowels open. As soon as the patient feels himself well, it is best to give him no medicines at all, but merely to enjoin attention to a proper diet.

It sometimes happens, that in applying the dressings we find the parts red, tense, and painful to the touch, and the degrees of the skin at a little distance from each other. As long as these circumstances continue, we must omit the application of the adhesive plasters, and cover the surface of the stump with a pledget of soft lint spread with cerate, as in the first dressing; over this we are to apply a cushion of lint, which is to be secured with slips of adhesive plaster, or cross pieces of lichen; and the whole of these dressings are to be confined with the circular bandage, the pressure of which ought to be not stronger than is necessary for securing the dressings. When the bandage is soiled, with the pus collected upon it, it should be changed for another; otherwise it may be left in its situation. In general, we ought not entirely to lay aside the bandages till the third or fourth week after the operation; but at that period we should do it lest the stump grow thinner than the other thigh. As soon as the wound is perfectly clean, and the pain and sense of tension removed, the edges of the wound may again be drawn closely together with adhesive plaster.

The amputation of the thigh has been performed only at its lower part, namely, at the adopted distance of three or four fingers breadths from the knee, for fear of a too copious hæmorrhage; but experience has shewn, that in cases of necessity the operation may be safely performed very high upon the limb. Only in such cases the tourniquet must be secured with great care, that it may not slip off in consequence of the retraction of the muscles. For this purpose we may, according to Mr. Schmucker's method, (*Vermischte Chirurgische Schriften*, lib. i. Berlin a Stettin, 1776, c. 8. p. 43.) lay under the tourniquet four pieces of tape about an inch broad, and two feet in length; directing two assistants to lay hold of these like handles, and draw them tight, two of them on the inner, and two on the outer side of the limb, whereby all such disagreeable consequences will be prevented.

Amputation of the Leg.

It is adopted by many as a general rule, that the amputation of the leg should never be performed just above the ankle, even though the disease be seated near the bottom of the limb; but always three or four finger-breadths under the knee: repeated experiments, however, have shewn, that amputation may be successfully performed just above the ankles, and as near to them as the disease permits. The advantage of being able to use the knee-joint in walking is so great, that the surgeon should not deprive the patient of it. (See our account of the *Flap Operation*.) The objection, that a long stump is an incumbrance, may be removed by the use of an artificial foot. In order to promote the cure of those wounds, the projecting tendinous parts must be separated with the scissars. Mr. B. Bell conceives it to be better in every instance, where the circumstances admit of it, to amputate a little above the ankle than at the upper part of the leg: amputation immediately under the knee he rejects entirely, as the cure of the stump is always tedious in this situation, the bones thick, and the soft parts deficient. In such cases he prefers amputating above the knee, though his opinion cannot be unconditionally adopted.

When we are to amputate immediately below the knee, the patient is placed upon a table, and secured in the same manner as in the amputation of the thigh. Some are of

opinion that the tourniquet should be applied a little above the knee, with the cushion upon the artery in the ham; but others apply it also in this operation immediately under Poupert's ligament, or in the middle of the thigh, which is the preferable method. The foot and leg are secured by an assistant, who sits before the patient. A second assistant draws up the integuments towards the knee. The surgeon stands on the inside of the limb, and with his knife makes first a circular cut through the skin and cellular substance down to the muscles; so that after as much of the integuments as will afterwards be necessary for covering the stump, has been separated in this manner from the parts beneath, the muscles and bones may be divided immediately below the part where the tendons and flexor muscles of the leg are inserted. When this has been done, the soft parts between the two bones must be divided with a two-edged knife (named a *CARLIN*), and the periosteum separated downwards. The skin and other soft parts must then be held fast to protect them against the saw, which is to be applied so as to cut through both of the bones together. When this has been done, and the vessels tied, the external integuments are drawn over the stump, and retained with adhesive plasters. During the course of the cure the practice is the same as after amputation of the thigh.

In separating the skin we must be very careful to separate it from the subjacent parts in such a manner as to have as much as possible, if not the whole, of the cellular substance attached to it. The more we deprive the skin of its cellular texture, the more lifeless it becomes, and the less fit for adhering speedily to the stump. As the skin also on the fore part of the leg cannot be retracted with near the same facility as in other parts, for example, the thigh, where it lies upon muscles, whilst on the fore part of the leg; on the contrary, it is connected by a very dense cellular substance immediately to the periosteum, the assistant is always obliged to fold back as much of it as has been separated, before the division of the muscles can be attempted, in order that the surgeon may be able to separate them from the bone, and save as much of them as is requisite for covering the stump.

The reason why the surgeon is directed to stand on the inside of the leg in this operation is, that when the knee and foot are turned inwards, and the fibula raised, he may be able to saw through both bones of the leg together, which he cannot do when he stands on the outside. Finally, he must take care not to suffer the bone to break off, or should such an accident happen, he must remove the inequalities that may be produced by it. Many have advised, in amputating the leg, after the muscles have been cut through, to apply a ligature round both bones, in order to hold them fast, and the same has also been advised in the amputation of the fore-arm; but this can be of no advantage, for it will be better to hold both the bones fast with the hand, and insert the forefinger between them, nearly under the spot where the saw is to go through, in order to prevent their coming into contact with each other.

When the leg is amputated immediately above the ankle, an artificial foot cannot easily be applied and secured upon the stump; the machine must be made heavier and thicker at the ankle, nor can the leg be made so equal in length and thickness as the other, as would otherwise be possible. When the stump is about nine inches in length from the knee, its dimensions are reckoned to be in every respect the most convenient.

Of amputating with a Flap.

In the old method of performing amputation, the cures were very tedious, and the health of the patients much impaired;

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paired; and as the stumps became so pyramidal and scantily covered with soft parts, an attempt was made to perform the operation in such a manner as to save a quantity of flesh and skin for the purpose of covering the stump. This operation we have shewn to have been first invented by Mr. Lowdham, of Exeter, and afterwards practised by Mr. Young, of Plymouth; though since their time Verduin, of Amsterdam, and still later, Sabourin, of Geneva, have claimed the merit of this invention. In France this method met with many advocates, but it was never approved of in Germany. In England it had been wholly neglected for a long time, when it was anew proposed by O'Halloran, with some alterations and supposed improvements of his own. (See his *Treatise on Gangrene*, 8vo. London, 1765.)

As it is very difficult to restrain the hæmorrhagy which may accidentally happen to supervene, after the flap has been applied in Mr. Young's manner, it being necessary for that purpose to undo the whole of the bandages, and separate the flap from the surface of the wound; moreover, as the flap does not always adhere uniformly over the whole surface of the stump, and the pain, inflammation, and tension which supervene, are sometimes much more violent than after the ordinary method of amputating, Mr. O'Halloran proposed to dress the stump and flap as two separate wounds for the first twelve or fourteen days; but afterwards, when the danger of a bleeding is over, the symptoms subsided, and suppuration established, to turn the flap back over the surface of the stump, and secure it by adhesive plasters, compresses, and bandages, till a complete adhesion has taken place. It seems that one grand cause of failure in the success of the flap operation, as it was performed in France about a century ago, was "the monstrous hæmorrhagy," as Mr. O'Halloran expresses himself; and, according to *their* unaccountable mode of conducting the operation, we almost agree with the last named writer, that "it was absolutely impossible for it to succeed." But we are surprised that Mr. Benjamin Bell, of Edinburgh, even in the new edition of his *Surgery*, should misrepresent the success of the *present mode*, so much as to deny its having cured "before the fourth week." *System of Surgery*, vol. vii. p. 330. 7th edition; this is certainly an unfair and imperfect statement of Mr. B. Bell.

By Mr. O'Halloran's improvement the flap operation was rendered more safe and certain, but has not come into general use, as that which Mr. Alanson invented in the mean time deserves, in most cases, the preference. The flap may, under various circumstances, be employed with advantage. Where it is impracticable in the common way to cover the divided parts sufficiently, we ought always to cut out a flap of muscle or skin for that purpose: it is best, for example, when we amputate the arm at the shoulder joint, or a finger, or toe. It has also been preferred by some surgeons when the leg is to be amputated immediately under the knee, as the integuments are very thin at that part, and there is reason to suppose that the stump cannot be sufficiently covered by any other means.

It has not been the common practice to make a double flap, although this is at present done with very great advantage by the surgeons of the Liverpool Infirmary. Their method is (excepting for diseases of the feet) to take the flap from each side of the limb, in preference to above and below, as it affords a better outlet for any pus that may collect in the stump. Upon an average, we find, on making recent inquiry, the stumps are healed in about "eighteen days;" which is more than can be said in favour of any other mode of amputating. The double flap likewise is free from the puckered appearance which remains after the single flap; and in a few weeks, we are informed, "the cicatrix can hardly be per-

ceived." Our own experience with the flap operation, even in the metropolis, is much in its favour; so that whatever objections have been raised against it (when properly performed), we are strongly inclined to think they have been chiefly theoretical, and not founded on actual observation.

Amputation with a Flap immediately above the Knee.

This operation may be performed either with one or two flaps; but if it be done with only one, it succeeds best on the fore part of the thigh, as there is here a sufficiency of soft parts for forming the flap and covering the bone; and as the matter thus passes off more readily when the flap is applied, and the patient laid down upon his back.

The patient being placed upon a table, and the tourniquet applied to the femoral artery below Poupert's ligament, an assistant draws the skin firmly up, and retains it in that situation. Whilst this is doing, we ought to mark, with ink upon the skin, the circumference of the intended flap. The extreme angle of the flap should reach to the bottom of the thigh unless the skin be much diseased, in which case the flap must terminate where the disease of the integuments commences. The base of the flap must be at the place where we intend to saw through the bone. Its breadth must be proportionate to the dimensions of the limb. If, for example, the diameter of a stump be twelve inches, a flap four inches and a quarter in length will be fully sufficient to cover it. But as some allowance must also be made for the quantity of skin and muscle that may be saved on the opposite side of the limb, by drawing them up before sawing the bone, a thigh twelve inches thick will not require a flap more than three inches and a quarter long, and so in proportion to the size of the limb. The flap should be as broad at the base as the breadth of the limb will permit; and it should be continued nearly, though not entirely of the same breadth, till within a little of its termination, where it should be cut circular, so as to correspond, as accurately as may be, with the back part of the circumference of the wound.

When now the surgeon has marked out the circumference of the flap, he must place himself on the outside of the thigh, apply the point of a straight double-edged knife to the outer side of the base of the intended flap, and push it in to the depth of the bone; then, carrying the point close to the bone, push it through the integuments on the opposite side of the mark. He must now carry the edge of the knife downwards in such a direction as to cut out the flap according to the figure marked out; but towards the end he should raise the edge somewhat from the bone, so as to make the lower part of the flap somewhat thinner than the base, whereby it will apply more accurately to the surface of the fore. The flap must be held by an assistant, but the skin and muscles on the back part of the limb must, with one stroke of the knife, be cut down to the bone, about an inch lower down than where the bone is to be sawed. The muscles are then to be separated to this height from the bone, with the point of the knife, and all the soft parts must be drawn back with the slit compress, till the bone is sawed. Any splinters that may have been left are then to be separated, the arteries tied up, and the ligatures left hanging out at the edge of the flap.

The muscles and integuments must now be drawn down, and secured with a roller, as has been directed above, in treating of the amputation of the thigh with the circular incision. The flap may now be laid down over the surface of the wound, the coagulated blood having first been carefully wiped off with a sponge, and the flap may then be moderately secured to the stump with adhesive plasters and sutures. The under part of the stump should be covered with
a large

a large pledgit spread with cerate, and a cushion of lint or tow laid over it. The whole should then be secured with cross straps of linen, and several turns of the circular roller. After the space of three or four days, or even longer, the dressings may be renewed. As soon as all the ligatures are removed, and the tension and pain have abated, the skin may be drawn over every part of the wound which before was not covered, and secured with adhesive plasters.

The method now described is generally to be preferred; but if, instead of effecting the cure by promoting a speedy adhesion of the parts, the surgeon deems it advisable, he will treat the flap as a separate wound according to O'Halloran's method; in which case, his easiest mode of proceeding is as follows: The muscles and skin being brought down and secured with the roller, the whole surface of the stump is covered with a soft pledgit spread on both sides with an emollient ointment. Upon this the flap is laid down, and another pledgit of the same kind being laid over the flap, a cushion of lint or soft tow, and a compress of soft linen are applied, and the whole is secured with cross straps of linen and a circular roller; but with no more pressure than is requisite for the security of the dressings. At the end of three or four days the dressings may be renewed in the same manner; and about the tenth or twelfth day, or whenever the tension and inflammation are removed, the ligatures may be taken out.

When now a proper suppuration is established, the flap may be applied to the stump. But previously, the matter must be wiped off from the surfaces of both sores, with soft sponge, and these being brought into contact with the greatest exactness possible, they may be secured either with adhesive plasters or two or three sutures.

Mr. Benjamin Bell, who prefers the latter method, assures us, that when, with a view to immediate adhesion, the flap is laid down directly after the operation, the pain, tension, and inflammation, which ensue, run often so high as to compel the surgeon to remove the dressings: whereas, when O'Halloran's method is adopted, the inflammation which ensues is very trifling, and the cure is accomplished even more quickly, than when the operation has been done according to the former method. We are, however, very much disposed to think the inflammation, &c. is too often produced by tight bandaging or sutures, in the cases where it fails of success.

The operation with *two flaps*, according to Ravaton's method, is performed in the following manner: When the tourniquet has been applied, an assistant draws up the skin tight, and makes a circular incision through the skin and muscles at the lowermost part of the limb, with the edge of the knife turned obliquely upwards. A sharp-pointed knife is now pushed in on one side of the limb down to the bone, at the part where the bone is to be sawed, and the under edge of the knife being turned obliquely outwards, the muscles are divided down to the circular incision. The skin and muscles on the opposite side of the limb are now divided by a similar incision, and with these the intermediate soft parts that may have been left are likewise cut through. When now the bone has been sawed, and the vessels tied up, the surgeon must either lay both flaps together immediately (as we recommend), or keep them separate for the first twelve or fourteen days, after which he may treat them in the manner above directed.

Of the Flap-Operation below the Knee.

This operation is performed nearly in the same manner as that above the knee; and the flap may be applied either immediately, or after the pain, tension, and inflammation are

gone. Only we cannot here, as on the thigh, so commodiously cut out the flap on the fore part of the limb, as the leg has no muscles there. On that account all writers direct the flap to be cut out at the back part: though this is attended with a very considerable inconvenience. For when the flap has been cut out of the calf of the leg, it is scarcely possible, after it has been applied to the stump, to prevent the accumulation and retention of the pus, as it does not find a free vent below, and we dare not apply more than a very moderate degree of pressure to the stump.

Instead therefore of cutting the flap out of the back part of the leg, Mr. B. Bell advises us to do it from the outside of the limb, where there is a sufficient quantity of muscles for the purpose, and where the flap can be no impediment to the discharge of the pus. He therefore performs the operation according to the following method: Let the point of the knife be entered on the outside of the ridge of the tibia, at the place where the bone is to be sawn, and after carrying it backward, in a direct line, to the opposite side of the base of the flap, let the edge be carried down the line previously marked with ink as a direction for the form and length of it.

When we amputate immediately above the ankle, we must cut out the flap behind, as there is not a sufficient quantity of soft parts behind; but it is here to be repeated, what has already been observed, that the leg ought never to be amputated so immediately above the ankle, as to have the stump too long for an artificial leg and foot being conveniently adapted to it. In an adult we ought therefore to form the flap about nine inches under the knee, if we wish to perform the operation in this manner.

Amputation of the Foot, Toes, and Fingers.

When the whole foot is diseased, we must perform the amputation in the manner above mentioned, above the ankle. This should also be done even where the joint itself is sound, but all the rest of the foot diseased. Some, indeed, have advised to take off the foot at the ankle joint; but as, when this is done, an artificial foot cannot well be applied, nor the stump covered with fleshy substance, the amputation above the ankle is evidently to be preferred.

But when a considerable part of the foot is still sound, we ought to endeavour to preserve it, and merely to remove what is diseased; and this should be our practice even where two of the metatarsal bones only remain sound; for the patient may still make great use even of a small part of the foot in walking, provided he wears a shoe well made, properly stuffed out, and with a strong unyielding sole. This may be done, especially when the bones on the inside of the foot, or those corresponding to the great toe, and those next it, are left. Very remarkable, therefore, is the case of Mr. Turner's amputating the foot at the middle. The operation was performed on account of a painful tumour, which extended as far as the middle of the metatarsus; and it was thought unnecessary to amputate above the ankle. A double incision was therefore made, and in order to preserve as much as possible of the integuments, a small part of them situated above the tumour, was included in the first incision. As the integuments could not be drawn back to any considerable length, it was impossible to preserve so much of them as might have been wished. The foot was sawed through at the upper part of the metatarsus, the hæmorrhage was easily stopped, and in the course of ten weeks it was completely healed, without any violent symptom having supervened.

When only single bones of the tarsus are diseased, these bones alone are to be taken out. When only one part of a bone

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bone is diseased, this must be removed with the saw, chisel, or trephine, but not the whole bone taken away.

In every amputation as much skin as is sufficient for covering the wound must be saved; but this is particularly necessary in amputating any part of the foot, where bad effects are to be apprehended from friction in walking. As the skin of the sole of the foot is commonly very thick, the flap which is to cover the fore ought, if possible, to be taken from that part; for this will prevent the bad effects of friction upon the part, much more than could be done by the skin of the upper part of the foot which is thinner, and unaccustomed to friction or pressure.

In performing this operation, the patient is placed on a table, and the tourniquet applied either below Poupart's ligament, near the upper part of the thigh, or over the knee, with a compress in the ham. The limb is secured by an assistant, and in sawing through the diseased bone, a piece of pasteboard, or a thin splint of wood, should be inserted between it and the contiguous sound bone, in order to protect the latter from the saw. When the diseased bone has thus been removed, and the arteries tied, the flap that has been saved is laid, with as much exactness as possible, on the fore, and secured with slips of adhesive plaster, and a roller. If futures are employed, they ought to be inserted in such a manner as not to injure the tendons of the flexor and extensor muscles of the foot and toes.

In amputating the fingers and toes, we proceed in the same manner as with the larger extremities, and the stump must here also be covered with a flap. The skin is drawn back as much as possible, after which the skin and flesh are cut through with a straight bistoury, between the contiguous sound fingers and the diseased one, in a straight line backwards, till somewhat above the joint, on both sides; the skin and flesh are also cut through above, round the joint; the finger is then bent towards the palm of the hand, and cut off from the out to the inside; the incision terminating at the fore part in such a manner, that still some part of the flesh is preserved for the purpose of being afterwards applied over the wound to facilitate the cure. When we only leave a single flap of integument on the finger, it has been recommended to let it be taken from below in labouring people, to afford a suitable stump for pressure; but, where beauty is more an object than use, we may take the flap of skin from above, as it will then scarcely occasion a visible scar after the cure.

In as much as we here speak of the case, in which the whole finger or toe is amputated from the contiguous metacarpus or metatarsus, we must also proceed in a similar manner when amputating only one or two joints; and if we find it necessary to tie an artery, we should do it by means of the tenaculum. The flap must be laid over the wound, and secured as accurately as possible with adhesive plasters, and moderate pressure with a roller. The objection which has been made that the union of the soft parts with the cartilage is precarious, is not founded in truth; for the skin unites with the cartilage, which covers the bone at the joint almost as readily as with other parts. It is therefore unnecessary that we should separate the cartilaginous surface of the joint with a small saw, as was formerly the general practice.

Amputation of the Arm and Fore-Arm.

This is performed in every respect in the same manner as has formerly been directed for the amputation of the thigh and leg. It should be remembered, however, that a long stump will be more useful in the arm than a short one. When we are to amputate at any other part than the joint, we may

do it without cutting out a flap to cover the wound; for in these parts there is a sufficient quantity of muscles, cellular texture and skin, for covering the stump, if we draw back the skin, according to the directions formerly given, and first divide that, and afterwards the muscles. Should this not be practicable in certain cases, it would then undoubtedly be better to perform the operation with a flap.

Amputations in the Joint.

These operations have been recommended on the authority of a number of cases in which they have been performed. In such an operation we are directed to cut first through the skin, nearly over the joint, with a straight knife upon the upper or foremost side, making a semicircular incision; we then open the capsule of the joint on both sides, and in doing this, we bend the limb (suppose it be the hand) in order to obtain room for cutting through the capsule all round, that we may the better be able to spare the cartilage of the sound member. The rest of the operation and cure is conducted in the usual manner.

But though amputation at the joint is preferable to amputation above the joint, with the fingers and toes, and perhaps also with the hand, the application of the same practice to other joints, such as the elbow, knee, and ankle joint, must be attended with very great difficulties. For, in the first place, this method of amputating is in fact more tedious than the operation above the joint. It is also equally painful, and the hæmorrhage equally dangerous; and as the soft parts in these joints are mostly aponeurotic and tendinous, a favourable inflammation and suppuration are not so likely to ensue. Besides it is very difficult at the elbow and ankle-joint to save so much muscular substance and skin as are requisite for covering the bone at the surface of the articulation, on which account a tedious suppuration and exfoliation generally take place; and there is reason to apprehend, that we may afterwards be still compelled to amputate again above the joint, and saw through the bone.

We shall describe the operation, as it has been done at the hip and shoulder-joint by eminent surgeons.

Amputation of the Arm at the Shoulder Joint.

Though this operation ought never to be performed when we can accomplish our purpose by amputating below the shoulder-joint, it being always a hazardous operation, yet we ought not to hesitate to undertake it, when abscesses in the joint, caries of the humerus extending to the shoulder, complicated fractures reaching as far as the head of the bone, bad gun-shot wounds, or a sphacelus render it necessary. Mr. Bromfield has given the following directions for performing it; and he did it several times with success. See his *Chirurgical Observations*, vol. i. p. 247, *et seq.*

When the apparatus is ready, place the patient upon his sound side upon a table, and in a somewhat oblique posture, that the surgeon may have room to move freely. Let an assistant then compress the subclavian artery at the place where it passes through the scalenus muscle, in such a manner that, by the resistance of the first rib, the passage of the blood through the artery may be entirely prevented. In order to know whether the pressure be sufficient for this purpose, we have only to examine the pulse at the wrist.

The patient being properly secured by the assistants, and pressure made firmly on the artery, the surgeon begins his incision on the inner side of the arm, at the edge of the deltoid muscle, namely, at the place where the great pectoral muscle passes over the axilla, to be inserted into the os humeri. He cuts through the skin and muscles, carrying his incision downwards, and rather obliquely outwards, till he arrives at a little

little below the termination of the deltoid. He then continues his incision across to the outer side of the arm, but so as to make this cross incision semicircular, and continues it on the outer side of the arm as far as the fold of integuments in the axilla. By means of this semicircular incision, we obtain, provided the skin and muscles have been drawn upwards from the bone, a flap of the form of a crescent, with which we may fill up the axilla after the operation.

A second incision must now be made, commencing at the process acromion, to be continued quite through the deltoid muscle in a longitudinal direction, and as far as the place where this muscle is inserted into the os humeri, terminating in the first semicircular incision. This incision, however, must not divide the flap into two equal parts, but it must be carried somewhat more inwards, so as to make the outer division of the flap the largest. The operator then passes his knife under the outer edge of the inner division of this flap, and separates it from the bone as high up as he is able. By these means, the tendon of the pectoralis major is laid bare. He now introduces under the tendon the fore-finger of his left hand, which serves as a conductor to a crooked knife provided with a guard at the point, with which he cuts through this tendon, near to the place where it is attached to the os humeri. If by these means the vessels have not yet been laid sufficiently bare to be easily taken up, he divides also the outermost head of the biceps muscle.

The vessels being now sufficiently in view, the surgeon first ties the artery with a strong ligature about eight inches in length. For this purpose he makes use of a peculiar kind of instrument, which is fixed to a flat handle, like a scalpel, and towards the point resembles a blunt crooked needle, having a transverse eye at its anterior extremity. When he has introduced the ligature under the artery, by means of this instrument, he directs his assistant to lay hold of the ligature, with a small tenaculum, on the other side, near to the eye of the needle; which being done, he draws back the needle. He now cuts through the ligature, at the tenaculum, by which means he obtains two ligatures. The one of these he lays hold of, and draws it a little forwards, in order to find its other end; after which he ties the artery with a surgeon's knot, about two inches below the head of the os humeri. The other ligature is applied about half an inch lower down, and the artery is then divided a little below the second ligature. The great brachial vein must also be tied with the same care, without, however, inclosing the nerve, and then cut through in the same manner as the artery. He then delivers the ends of the ligatures to an assistant, who holds them up with one hand, towards the upper part of the thorax, and with the fingers of the other compresses the vessels at the axilla.

The surgeon then divides the nerve as high as possible, and much higher than the artery. He now separates the outer part of the flap also, as high up as sufficiently to expose the capsule of the joint; he then cuts through the muscles and the capsule at the superior and lateral part, and presses the arm a little backwards, upon which the head of the bone is immediately dislodged from the socket of the joint, after which the remaining part of the capsule is easily divided. He now completes the operation with the third grand incision, which he commences at the inside of the shoulder, where the vessels must be protected by the fingers of the assistant from the knife; and continues it in a semicircular direction through the fleshy parts, which cover the inner side of the joint, till this incision terminates in the first incision on the outside of the arm. Should any of the vessels still throw out much blood, it must be drawn out with the tenaculum and tied, taking care not to include the nerve in the ligature.

The ends of the ligatures are then drawn to the outside of the arm, and the inner part of the flap let fall down in such a manner, as to fit into the semicircular incision. The surgeon then passes a large crooked needle with a thread through the inner flap, about an inch and a half under the upper and inner part of the wound, and carries the point of it through the skin of the wound in the same line, forming the interrupted suture in the usual manner, in order to promote the speedy union of the parts. The same operation he repeats twice with the outer flap, then draws out the ends of the threads through the middle incision in the deltoid muscle, and lets them hang out till they come away spontaneously, which may be in about eight or ten days.

When the socket of the joint is not carious, the operator, before drawing out the ends of the vessels, is recommended (but, we think, very improperly) to separate the cartilaginous substance which lines its socket with a scalpel, and to cover the bone with dry lint, which is to remain there till it comes away of itself. He also makes use of dry lint when the socket of the joint and the adjacent bones are carious. Every long sinus that does not proceed perpendicularly upwards must likewise be laid open by an incision.

After the operation he covers the stump with a double piece of flannel, which he draws together with a needle and thread, in such a manner as to make it lie close upon the upper part of the shoulder, so that it cannot fall down. This he further secures with other stripes of flannel, from three to four fingers-breadth broad, and from six to nine feet in length, according as the strength of the patient requires, sewing such a stripe of flannel on each side to the upper edge of the bandage; the foremost of which he carries behind over the back of the patient, and the hindmost forwards over his breast, so that they cross each other over the shoulder, and again on the opposite side at the axilla, after which their ends are brought back to the stump, and there secured with pins. Two other stripes of flannel are fixed on the inner and outer side, to the inferior margin of the flannel bandage on the stump, one of which is carried across the back, and the other across the breast at the lower part of the sternum; they are then made to cross each other at the axilla of the sound arm, then brought round to the shoulder, and crossed again; after which the end that was brought out under the axilla, and carried to the shoulder, is now passed along the lower part of the neck to the bottom of the stump. The other end is brought forwards, and secured to the bottom of the stump with pins.

Mr. Benjamin Bell advises us to perform this operation, after a method somewhat different from that of Bromfield; although he seems not to have done it himself. He directs us to place the patient upon a table of a convenient height, covered with a mattress and a blanket. Let him be laid upon his back, as near as possible to the edge of the table, and properly secured by assistants. Hæmorrhagy is guarded against by an assistant compressing firmly with his finger and a cushion on the subclavian artery, as it passes over the first rib directly above the clavicle. The diseased shoulder is then made to project somewhat over the side of the table, and the arm is stretched out at nearly a right angle with the body, and supported by an assistant.

The incision is made exactly at the insertion of the deltoid muscle into the humerus, in a circular form through the skin and cellular substance; the integuments are retracted about half an inch, and along their margin all the muscles are divided with a perpendicular cut down to the bone. All this is performed with the common amputating knife; the rest of the operation is performed with a strong round-edged scalpel. With this instrument a perpendicular incision is made

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made down to the bone, commencing at the acromion, and terminating in the former circular incision, so as to pass straight between the centre of the deltoid muscle and its outer edge, and end about an inch above, or rather on the outside of the brachial artery. A similar incision is made on the back part of the arm, commencing also at the acromion, and terminating in the circular incision. This should be at such a distance from the first perpendicular incision, that the two flaps formed between them may be both nearly of equal breadth. The brachial artery must be tied, as soon as it has been divided by the circular incision through the muscles; and any other anastomosing branches of arteries that may have been cut must likewise be tied in a similar manner. The two flaps must now be separated from the bone, care being taken not to injure the great brachial artery, in separating that part of the flap near which it lies. An assistant must then press both the flaps asunder, so as to bring the capsular ligament of the joint into view. Into this ligament an opening is now made, and the bone dislocated, by dressing the arm backward. The operation is then finished by dividing the remaining part of the ligament.

Any arteries that may have been cut about the joint must be tied, and the ligature suffered to hang out at the most depending part of the wound. When the parts have been cleared of all the coagulated blood, the two flaps are laid together, in such a manner as to cover the joint as exactly as possible, and retained in this situation by one or two more sutures. A pledget spread with emollient ointment is laid upon the joint, and over this a cushion of lint with a soft compress of linen. All this is secured by a flannel roller, applied so as to make only a moderate pressure, by which the flaps will be kept in contact with the parts beneath. The patient must, in other respects, be treated according to the directions formerly given. In the course of eight or ten days, Mr. Bell says, the ligatures will easily come away; but to avoid any risk from sudden hæmorrhage, he advises an assistant to watch the patient for the first few days after the operation.

This method is undoubtedly more easy and simple than that of Bromfeild: for the muscles are divided at once, down to the bone, with a circular incision; and not, as in Mr. Bromfeild's method, first one muscle cut and then another. As the attachments of all the muscles to the humerus are removed by the arm being taken away, it is not necessary we should divide them with such slowness and caution; one ligature also upon the brachial artery is sufficient, if applied with the requisite care and attention by means of the tenaculum. Neither is it necessary to scrape off the cartilage from the acetabulum of the joint; for, as has been already observed, the soft parts will adhere to cartilage as readily as to bone.

Another method of amputating the arm at the joint was employed by Mr. Default, of Paris, which seems not only to be far more expeditious, but also less painful to the patient, and easier to execute than any other. The manner in which it is performed is as follows:

The patient being placed upon a chair, and the subclavian artery compressed by the finger of an assistant at the place where it passes through the scalenus muscle, the arm is raised in such a manner as to form nearly a right angle with the trunk of the body. A two-edged scalpel, having a straight blade six inches in length, and half an inch in breadth, is thrust into the joint at the place where the long head of the biceps muscle enters it, and brought out again an inch below the axilla; in this manner the capsule of the joint is cut through forwards; and, at the same time, the knife is carried round the head of the os humeri on the same side of the arm, care

being taken to keep it always quite close to the bone. By cutting downwards in this manner, all the fleshy substance is at once separated three finger-breadths below the joint, so as to form a triangular flap, in which the axillary artery and vein are contained. This flap is immediately laid hold of by an assistant, who holds it off from the bone, and compresses the vessels with his fingers. The arm is then bent a little backwards, the knife introduced again into the joint, the remainder of the capsule and ligaments cut through, and, by carrying the instrument downwards from the back part next the bone, and at the same distance from the joint as before, another triangular flap is formed similar to the former in shape and size. The arm being entirely cut out in this manner, the axillary artery and vein are tied as high up as possible.

When the acetabulum of the joint is quite free from disease, the cure is endeavoured to be effected by reunion, for which purpose Mr. Default also conceived it to be unnecessary to scrape away the cartilage. The two flaps are now laid together, so as to fill up the socket of the joint, and the lips united by means of the interrupted suture. Over the fleshy parts dry lint is applied, and over that a compress, in the form of a cross of Malta, spread with ointment; then again a round compress and two languettes, which are all finally secured with a flannel roller. Under the axilla an oval piece of linen is applied, partly in order to resist the impetus of the blood in the axillary artery, and partly to press the fleshy parts more closely to the hollow of the scapula, with a view to facilitate the healing of the wound. The whole of these dressings are likewise secured with a roller.

The knife used in this operation must be sharp, and somewhat ground off on both sides, like a pair of scissors. The blade should not be made of too hard steel, lest it break during the operation; on the contrary it should be rather flexible, but at the same time tough, in order that when it is carried round under the head of the os humeri, it may apply the more aptly to the bone.

Amputation of the Thigh at the Hip Joint.

The proposal of this operation must at first strike a feeling mind with horror; and, indeed, it is so terrible as well as difficult to perform, that many eminent men have thought it impracticable to be done with success. This opinion has even been advanced by Schmucker, in his *Vermischte Chirurgische Schriften*, &c. B. i. p. 48. Berlin, 1776; where the author says, "he is persuaded that no patient on whom it may be performed can ever survive." He very properly dissuades us from relying on experiments which have been made on dogs, and from thence inferring, that similar trials will succeed equally well on the human subject; but Schmucker ought certainly to have spoken with some degree of diffidence, after the publication of facts which seem to establish an opposite opinion to his own. That a person may actually survive this dreadful operation, will appear from what we shall presently state for the reader's information.

The possibility of performing amputation at the hip-joint with success, was discussed so early as the year 1739; and was maintained in a public thesis, at one of the medical schools at Paris, A. D. 1748. The members of the Royal Academy of Surgery at Paris, likewise believing that it was practicable, gave out the following prize question in 1756: "*Dans le cas où l'Amputation de la Cuisse dans l'Article parotroû l'unique Ressource pour sauver la vie à un Malade, déterminer si Pon doit pratiquer cette Opération, et quelle seroit la Methode la plus avantageuse de la faire;*" but not being satisfied with the answer it met with, they again proposed the same subject for the year 1759. On the former occasion, twelve memoirs were received by the Royal Academy; on

the latter, thirty-four. *Disput. Chirurg. Halleri, tom. v.—Opuscules de Chirurgie par M. Morand.—Prix de l'Académie, tom. iv.—Journal de Médecine en 1759.*

Who would have imagined, a priori, that a patient could survive the complete dilaceration of an arm, with the scapula, and all the muscles attached to it? Yet this is a fact that cannot be controverted. The thigh of a young lad, at the Hotel Dieu d'Orleans, was spontaneously separated at the hip-joint, except the round ligament and sciatic nerve: the other thigh, which was much sphacelated likewise, was presently afterwards cut off by his surgeon; and the fore on both sides went on well till the fifteenth day from the first operation, when a fever supervened and destroyed the patient. Another instance of an amputation of the limb at the hip-joint is recorded by M. Sabatier, (*De la Méd. Opér. tom. iii. p. 330.*) which had been performed in consequence of a violent contusion, followed by gangrene: the cure was effected in eighteen months, and remained permanent; so that this man was afterwards married, and had a fine child. Lastly, we beg leave to copy an interesting account of a case published by Mr. William Kerr, of Northampton, in vol. vi. p. 577, of Dr. Duncan's Medical Commentaries; from which we may farther presume on the reasonableness of this operation, under certain circumstances of extreme danger.

"A girl, between eleven and twelve years of age, was brought into the hospital, from Kettering, in December last. She had a tumour on the outside of her right thigh, extending from the middle to near the great trochanter; she was very much emaciated, had a constant cough, night sweats, and many more hectic symptoms. She told us that she had been ailing upwards of two years, during which period she had frequently had fevers, and that her lameness had been gradually increasing from her first illness. That at first she had little pain, but a few months before she came into the house, it became very acute from the groin all round the hip, and till then she never observed the tumour before mentioned.

"She suffered great pain upon the least motion of the joint, and upon every such attempt there was a very perceptible grating to be felt. Being engaged myself," says the author, "I directed Mr. Warden, house-surgeon, to open the tumour the day after she came into the hospital; there was discharged about half a pint of ill-conditioned matter, and we had the same kind of discharge, in a very great quantity, at every dressing, from that time till the operation, which was performed the Saturday following.

"Flattering myself that the hectic symptoms might be the effects of absorption, convinced that the joint was diseased, and concluding, therefore, that there was no other method of cure but by amputating the limb at the articulation, I set about it in the following manner:

"Having laid the patient upon the sound side, upon a table of a common height, and putting the diseased thigh at right angles with the trunk, I began my incision immediately behind the top of the great trochanter, carrying it obliquely, backwards and downwards, to the inside of the thigh, and from thence obliquely upwards to within two inches of the crural artery.

"I then began a second incision at the same place with the former, carrying it in an opposite direction over the upper extremity of the trochanter, and from thence obliquely forwards and downwards to within the same distance of the vessel as in the former.

"These incisions were made only through the skin and fat, which being well drawn back by my two assistants, I cut down into the joint, and from thence carried two other incisions through the muscles in the same order and direction,

and to the same extent as those which were made through the outer teguments.

"I then turned the head of the femur out of the acetabulum, that I might with more ease and security accomplish the most important part of the operation, namely, the taking up the artery. From the foregoing description you will easily conceive that a flap about four inches in breadth, consisting of all the integuments with the artery included, was still undivided. This flap I grasped firmly betwixt the fingers and thumb of my left hand, (my fingers on the skin side of it, and my thumb on the muscular) and cut it through immediately below my hand, and between three and four inches from the passage of the artery under the ligamentum fallopii.

"The incision here was made from above downwards, first through the muscular part of the flap, and then through the fat, vessels, and skin. It was done in this manner that the skin might correspond with that which was divided by the first incisions, and that the edges of the wound, we cannot say slump, might thereby be kept neat and uniform.

"The next step was to secure the artery, which I effected by passing a strong ligature round it with a needle, and getting one of my assistants to tie it up; such a compression being all the while made upon it by my left hand in the manner related above, as to prevent the loss of a single drop of blood, and the hæmorrhage from the other arteries was full as inconsiderable as in any other amputation of the thigh. By saving a good portion of skin the wound was much more decent and seemly than you can well imagine; but, to my great mortification, I found not only the acetabulum carious, but also the adjacent parts of the *ossa innominata*, to a very considerable extent. From her almost constant cough, I was under the greatest apprehension that the artery would be forced open; yet no mischief ensued, and the ligature fell off at the fourth or fifth dressing: the aspect of the fore, in the mean while, giving us the most sanguine hopes of her recovery. But about the tenth or eleventh day her respiration became more difficult, expectoration ceased; her mouth and tongue were covered with aphthæ, and she died on the 18th day from the operation. The appearance of the fore, even to the last, was such as to afford good reason to suppose that the immediate cause of death was the daily increase of the hectic symptoms, and that without these the operation would have succeeded; I therefore had her opened, and our supposition was, I think, pretty strongly confirmed by the following phenomena. The lungs were almost totally reduced to matter, especially on the right side, in which there was scarcely a vestige of pulmonary substance remaining. The left lobe also was full of abscesses, and reduced to less than half the natural size. An abscess (commonly called the psoas abscess) was likewise found on the right side, in the abdomen, which communicated, by a corroded opening with the acetabulum, with the joint.

"I have given you an exact narrative of the circumstances of the case, the operation, and the event of it; at least, I do not recollect any other of consequence. I shall not comment farther upon it than just to observe, that the total destruction of the ligamentum rotundum by the supuration within the joint, contributed greatly to the facility with which the operation was accomplished; for I imagine, if that ligament had been entire, the division of it would have been attended with perhaps considerable embarrassment; I think, however, it might be effected in a sound joint.

"With regard to the expediency of the operation, I am so much convinced of it in certain cases, that in such I shall not, for the future, hesitate to perform it when they occur."

Concluding Observations.

It still remains for us to notice two proposals, one of which is directed to the prevention, the other to the improvement, of the operation of amputation. In cases of ferofulous tumours, or, as they are termed, white swellings of the joints; of collections of matter in the cavities of joints, which often supervene upon simple inflammation; of gunshot wounds and compound fractures of the joints; or often also of the most simple, but, at the same time, penetrating wounds, a variety of morbid symptoms take place, which render timely amputation of the limb the only means by which the unfortunate patient's life can be saved. In these diseases, when they affect the knee and elbow-joint, Mr. Park has proposed, instead of amputating the whole limb, as is generally practised, another remedy, which consists in the complete extirpation of the joint, or rather, in the amputation of the extremities of the bones which form the joint, together with the whole, or at least the greater part of the capsular ligament, the cure is afterwards effected by means of callus, which occupies the place of the bones that have been sawn off, or the femur is attached to the tibia by a synostosis. But in the elbow, the humerus synostoses with the radius and ulna, without the joint retaining any perceptible power of motion. With this view he made the following experiment:

Two inches above the upper end of the patella he made an incision, and carried it down to its lower extremity; he then placed the leg in an extended posture, and made a cross incision immediately above the patella, through the tendons of the extensor muscles, down to the bone, and nearly half round the limb, so as to form a right angle with the former incision. The lower angles which were formed by this incision, he widened so as to lay bare the capsular ligament, and took out the patella. The upper angles he likewise widened, so as to lay bare the head of the femur, and to enable him to pass a small knife across the posterior flat part of the bone immediately above the condyles, taking care to keep one of the flat sides of the point of the instrument close to the bone all the way. He then withdrew the knife, and introduced an elastic spatula in its place, to guard the soft parts during the sawing through of the femur. He then carefully dissected out the head of the femur that had been sawn off. The head of the tibia was then easily turned out; this he sawed off, and cut away as much as possible of the capsular ligament, leaving only the posterior part to cover the vessels, which he found, upon examination, to be not only unhurt, but also that they were sufficiently covered with the remaining part of the ligament, and that, during the whole of the operation, they had been sufficiently far from the course of the knife. Although the wound had a formidable appearance, he saw no reason to doubt that nature would be able to repair the breach; as the limb below would not be deprived of its nourishment, and every healthy fresh-incised surface, both of bone and of soft parts, has a natural tendency to granulate.

The next operation he performed upon the elbow-joint. He made an incision, commencing two inches above the tip of the olecranon, and terminating at the same distance below it; he then raised the integuments, and endeavoured to separate the lateral ligaments from each other, in order that he might be enabled to draw the bones asunder. But as he found this to be difficult, he first sawed off the olecranon, whereby he loosened the joint to that degree, that he could very easily draw it asunder, without being under the necessity of making a cross incision. He then turned out the lower end of the humerus, and sawed it off, and afterwards the heads of the radius and ulna. He does not, however,

flatter himself that this method will prove equally successful in all cases; as, in some, amputation is indispensably necessary; for example, when the disease has spread too far, when the soft parts are too much injured, and the caries too extensive. In general, he thinks the operation is more to be recommended in cases of external injury than in serofulous affections.

The other proposal, which has Mr. Wrabetz for its author, refers to the amputating of limbs without the knife, by means of ligatures. Mr. Ploucquet (*Von der unblutigen Abnehmung der Glieder. Tuebingen, 1786, 8vo.*) describes it as follows: Take a fluxen, or rather a cotton cord, of thickness and strength proportionate to the size of the limb; lay it in spirit of turpentine, mixed with fine powder of tobacco-leaves, the seeds of the ruta, cantharides, and camphor; and after it has lain in this liquid for the space of twelve hours, apply it to the limb in the following manner. Draw back the skin as much as possible towards the sound part of the limb, and apply it above the diseased part round some perfectly sound part of the limb; draw it tight with a turn-screw, and secure the latter. About two inches above the cord rub a quantity of the above-mentioned mixture, till small blisters are raised, which must be opened and dressed with a drawing plaster. By this application and by poultices the requisite degree of inflammation is promoted. As long as the cantharides are employed, the use of which is very beneficial to debilitated habits, the patient must drink mucilaginous liquids, with which cordials are to be combined, such as camphor, Peruvian bark, arnica, &c. and, at the same time, blood-letting and refrigerant remedies, especially nitre, are to be administered. As the cord sinks into the flesh, and grows looser, it must be tightened; and the crevice which it leaves above it must be filled up with a fine powder of Peruvian bark, camphor, and alum, in equal parts. This powder may also be made into a liniment with oil of hypericon, and rubbed into the above-mentioned crevice. That part of the limb which we wish to separate should be swathed in a cloth soaked in a mixture of a solution of alum, lime-water, and some aromatic spirit. Mr. Wrabetz has in one case succeeded in amputating the humerus according to this method, and assures us, that he has often separated small limbs by means of ligatures: it is, however, a practice that cannot be recommended for imitation, although Mr. Manguet has endeavoured to demonstrate the advantages of this operation; for, on the one hand, his observations are too defective to prove any thing, and on the other, the operation should only be attempted in a perfectly similar case.

For an account of the means of supplying defective members, see LIMBS, *artificial*.

AMPUZITZA, in *Geography*, a town of Beffarabia, 26 miles west-north-west of Ismael.

AMPYX, in *Antiquity*, a kind of golden chain, which served to bind the hair of the horses on the forehead. Homer describes by this ornament the steeds of the god of war, calling them χρυσάμπυξες. The term was afterwards used more generally to denote a band or fillet, which formed a part of the dress, and which encompassed the hair. It was sometimes encircled with gold and precious stones.

AMRAM, in *Scripture Biography*, was the son of Koath, of the tribe of Levi, and married Jochebed, by whom he had Aaron, Miriam, and Moses. He died in Egypt, aged 137. Exod. vi. 20.

AMRAN, in *Geography*, a town of Arabia, 20 miles north-west of Sana.

AMRAPHEL, in *Scripture History*, was king of Shinar, and confederate with Chedorlaomer, king of Elam, and two

other kings, in making war against the kings of Sodom, Gomorrah, and the three neighbouring cities. The kings, who were in league with him, plundered these cities, and carried off many captives, among whom was Lot, Abraham's nephew; but Abraham pursued them, retook Lot, and recovered the spoil. A. M. 2092, B. C. 1912.

AMRAS, in *Geography*, a castle or palace of Germany, in the county of Tyrol, called by some writers *Arx Ambrosiana*, and also *Ombrafi*, and situate at the foot of a mountain, two miles south east of Inspruck. In the heat of Summer it is a place of retirement for the archdukes. It is famous for its collection of antiquities, gold medals, cameos and intaglios, most of which were sent to it by Charles V. On the walls and ceilings are many curious paintings, and one, in particular, of Noah's ark by Bassano, for which the grand duke of Tuscany is said to have offered 100,000 crowns. Here are also a library, a gallery full of busts, and many pictures of great value. N. lat. 47°. E. long. 11° 40'.

AMRU, or AMROU, EBN-AL-AS, in *Biography* and *History*, a famous Saracen commander, was the dubious progeny of Aasi, of the tribe of Koreith, by a notorious prostitute. In his youth he was impelled by the passions and prejudices of his kindred: his poetic genius was exercised in satirical verses against the person and doctrine of Mahomet; and his dexterity was employed by the reigning faction, to pursue the religious exiles who had taken refuge in the court of the Ethiopian king. From this embassy he returned a secret proselyte, having renounced the worship of idols; and making his escape from Mecca with his friend Caled, he joined the fugitive prophet at Medina. His impatience to lead the armies of the faithful was checked by the reproof of Omar, who advised him "not to seek power and dominion, since he who is a subject to-day may be a prince to-morrow." Amru, having acquired a high degree of military reputation, was the chief in Irak, when Caled summoned all the Arabian generals to his assistance, in the siege of Damascus. In Palestine, he served during the Caliphate of Omar, under Abu Obeidah, who was the commander in chief. On his arrival in this country he was informed, that Constantine, the son of the emperor Heraclius, lay encamped with a body of troops near Cæsarea. As he was advancing towards the siege of this city, this prince deputed some Christian Arabs to reconnoitre the Moslem camp; when one of them was discovered, and cut to pieces. Amru was much offended, and issued orders that all spies should be brought to him for examination, before they were thus punished; alleging, that such spies might probably, in case of conviction, rather embrace Islamism than suffer death. About this time Constantine expressed a desire to have a conference with Amru. When the Arabian chief was introduced to the prince, he declined making use of a seat that was offered him, and took his place cross-legged on the ground, after the Arabian manner, with his sword upon his thigh, and his lance laid across before him. Constantine made overtures for a pacification, but they were rejected with great insolence by Amru, who insisted upon his paying tribute or embracing the religion of Mahomet. This conference closed with a declaration on the part of Amru, "that the Arabians were tired of living in their scorching deserts, and were resolved to re-enter into the possession of the delightful country, which was the inheritance of their progenitors." Accordingly both parties prepared for action; which terminated in the capture of Cæsarea by Amru, and the subjugation of all the maritime towns of Syria, A. D. 638. Upon the death of Obeidah,

Amru assumed the chief command in Syria, in which, notwithstanding the opposition of Othman, he was confirmed by Omar. Determining to proceed to Egypt, he left his station at Gaza, and advanced forward at the head of only 4000 Arabs; but in his progress he was overtaken by a messenger from Omar, with instructions contained in a letter which he did not open, because he entertained some suspicion of its contents, till his tents were pitched within the territory of Egypt. "If you are still in Syria," said the ambiguous mandate, "retreat without delay; but if, at the receipt of this epistle, you have already reached the frontiers of Egypt, advance with confidence, and depend on the succour of God and of your brethren." After perusing this letter in the presence of his officers, he declared his ready obedience to the commands of the Caliph. After a siege of 30 days, he took possession of Parnax or Pelusium, and this key of Egypt, as it has been justly called, unlocked the entrance of the country, as far as the ruins of Heliopolis, and the neighbourhood of the modern Cairo. From Pelusium, he marched to the ancient Memphis, or Misrah, the siege of which was protracted to seven months; and as the invaders were, by this delay, threatened with the inundation of the Nile, they stormed the place and drove the remnant of the Greeks to their boats and the isle of Rouda. On this spot, the eastern bank of the Nile, recommended to the conqueror by its easy communication with the gulf and the peninsula of Arabia, he built a city called Fostat; and the contiguous quarters of Babylon and Fostat are confounded in their present decay, by the appellation of old Misrah or Cairo, of which they form an extensive suburb. After this conquest, the Coptic Christians, or Jacobites, negotiated, by means of their governor, Mokawkas, a treaty of peace and amity with Amru; agreed to pay a stipulated tribute; swore allegiance to the Caliph, and promised an hospitable entertainment of three days to every Mussulman, who should travel through their country. Their patriarch Benjamin, at the earnest request of Amru, emerged from his desert; and, after the first interview, the courteous Arab affected to declare, that he had never conversed with a Christian priest of more innocent manners and a more venerable aspect. In the march from Memphis to Alexandria, the lieutenant of Omar entrusted his safety to the zeal and gratitude of the Egyptians; and in every step of his progress, he could depend on a constant supply of provisions and intelligence. The fugitive Greeks were pursued to Alexandria, and the road thither was laboriously cleared by the victorious Saracens, in 22 days of general or partial combat. After a siege of 14 months, and the loss of 25,000 men, the city was taken A. D. 640. See ALEXANDRIA. During the progress of this memorable siege, Amru "was betrayed by his imprudent valour; his followers, who had entered the citadel, were driven back; and the general, with a friend and a slave, remained a prisoner in the hands of the Christians. When Amru was conducted before the præfect, he remembered his dignity and forgot his situation; a lofty demeanour, and resolute language, revealed the lieutenant of the Caliph, and the battle-axe of a soldier was already raised to strike off the head of the audacious captive. His life was saved by the readiness of his slave, who instantly gave his master a blow on the face, and commanded him, with an angry tone, to be silent in the presence of his superiors. The credulous Greek was deceived; he listened to the offer of a treaty, and his prisoners were dismissed in the hope of a more respectable embassy, till the joyful acclamations of the camp announced the return of their general, and insulted the folly

of the infidels." After the capture of Alexandria, the whole of Egypt soon submitted to the arms of the conqueror; and in the administration of it he balanced the demands of justice and policy. In the management of the revenue he disapproved the simple, but oppressive mode of a capitation, and preferred with reason a proportion of taxes, deducted on every branch, from the clear profits of agriculture and commerce. A third part of the tribute was appropriated to the annual repairs of the dykes and canals so essential to the public welfare. Under his administration the fertility of Egypt supplied the dearth of Arabia; and a string of camels, laden with corn and provisions, covered almost without an interval the long road from Memphis to Medina. The genius of Amru opened the maritime communication which had been attempted or achieved by the Pharaohs, the Ptolemies, or the Cæsars; and a canal, at least 80 miles in length, was opened from the Nile to the Red Sea. From Egypt, Amru extended his conquests to the neighbouring parts of Africa; but on the accession of Othman, he was superseded in his government of Egypt by Abdallah-ebn-Said. The dismissal of Amru was considered as a public loss, and even disposed the Egyptians to revolt. This change in the sentiments of the people induced Constantine, the Greek emperor, to meditate the reduction of Alexandria, and he easily effected his purpose. Upon this loss Amru was restored to his former dignity; and employed in the recapture of the city. After a vigorous resistance, on the part of the besieged, and great slaughter, he took it by storm; and though by his authoritative interposition he restrained the massacre of the inhabitants, he dismantled it, and utterly demolished all the walls and fortifications. After this exploit, he was again displaced by Abdallah, and recalled to Medina; but Othman found it necessary to avail himself of his influence in quelling a sedition, which he was unable to effect.

Upon the accession of Ali, Amru joined the malcontents, and quitting his command in Palestine, arrived at Damascus, which was then the residence of Moawiyah, the competitor of Ali, and swore allegiance to him. When it was proposed to decide the difference between these two rivals, by single combat, Amru persuaded Moawiyah to accept the challenge; but he declined it, and ascribed Amru's recommendation of it to selfish motives, and to his desire of obtaining the caliphate for himself. Notwithstanding this unjust suspicion, Amru maintained his attachment to Moawiyah, and served him in the business of the arbitration between these two competitors. See ALI. He also took possession of Egypt in Moawiyah's name, after having defeated Mahomet-ebn-Abubeker, Ali's governor, whom he took prisoner, and put to death in a barbarous manner. Amru was now considered of such importance, that he was one of the three conspirators, whom the sect of the Kharijites determined to assassinate, with a view of restoring peace to the Saracen empire. Amru fortunately escaped; being prevented, by a fit of the colic, from attending in the mosque on the day when one of the conspirators went to kill him, but Kharijah, a friend whom he appointed to perform the office of Imam, as his substitute, was struck by the conspirator, who mistook him for Amru, and fell down dead with the blow. In the year of the Hegira 43, A.D. 663, during the caliphate of Moawiyah, Amru ended his days in the palace and city, which he had founded on the banks of the Nile. Of him Mahomet is reported to have said, that there was not a Moslem more sincere and steadfast in the faith than Amru. He was justly esteemed one of the greatest men amongst the Arabs of the age in which he lived; distinguished by his

quick apprehension, solid judgment, undaunted courage, and singular resolution, as well as his profound sagacity and penetration; always excellent in his advice, firm in his purpose and speedy in its execution. The two first successors of Mahomet were not insensible of his merit. To his arms they were indebted for the conquest of Palestine; and in all the battles and sieges of Syria, he united with the temper of a chief, the valour of an adventurous soldier. In a visit to Medina, the caliph wished to survey the sword which had cut down so many Christian warriors; Amru unheathed a short and ordinary scymetar; and as he perceived the surprise of Omar, "Alas!" said the modest Saracen, "the sword itself, without the arm of its master, is neither sharper nor more weighty than the sword of Pharezdak the poet." This saying is preserved by Pocock, and justly applauded by Mr. Harris, in his Philosophical Arrangements, p. 350. After the conquest of Egypt, Amru was recalled by the jealousy of the caliph Othman; but in the subsequent troubles, the ambition of a soldier, a statesman, and an orator, emerged from a private station. His powerful support, both in council and in the field, established the throne of the Omniades; the administration and revenue of Egypt were restored by the gratitude of Moawiyah to a faithful friend, who had raised himself above the rank of a subject; and in the possession of this lucrative dignity his life terminated. His dying speech to his children, in which he deplored the errors of his youth, and particularly his offence in satirizing Mahomet, is celebrated by the Arabians as a model of eloquence and wisdom. Ockley's Hist. of the Saracens, vol. i. and ii. Mod. Un. Hist. vol. i. p. 315, &c. Gibbon's Hist. vol. ix. p. 425, &c.

AMSBEG, in *Geography*, a town of Swisserland, in the canton of Uri, seven miles south of Altorff.

AMSDORF, NICHOLAS, in *Biography*, a Lutheran divine, was born at Meissen, in 1483. After studying at Wittenberg, he became a disciple of Luthier, who appointed him minister of Magdeburg, and afterwards of Naumberg. He was distinguished by his opposition to the Roman Catholics, and by his controversy with Melancthon and his adherents, on the subject of good works; in the heat of which he extravagantly maintained, "that good works were an impediment to salvation." From this imprudent and unwarrantable expression, the flame of controversy received new fuel, and broke forth with redoubled fury. The sentiments of Melancthon in opposition to those of Luther and his partizans, were ably defended by George Major, an eminent teacher of theology at Wittenberg; who, in 1552, maintained the "necessity of good works," against the extravagant assertions of Amsdorff; who died at Magdeburg in 1541.

AMSDORFIANS, in *Church History*, a sect of Protestants, in the 16th century; were so denominated from their leader *Amsdorf*. They maintained, that good works were not only unprofitable, but even opposite and pernicious to salvation. Mosheim's Eccl. Hist. vol. iv. p. 328.

AMSEGETES, in *Antiquity*, those whose grounds abuted on the highway. Vide Fest. de Verb. Signif. in voc.

The laws of the Twelve Tables decree, *amsegetes viam muniant*.

AMSMOE, in *Geography*, an island in the German Ocean, near the west coast of Denmark. N. lat. 54° 40'. E. long. 8° 25'.

AMSTEL, a river of Holland, which passes by Amsterdam, and joins the Y or Wye.

AMSTELLAND, a small district of South Holland, takes

takes its name from the river Amstel, which runs through it. Those parts of this district, which are not healthy, afford good pasturage. It contains several villages; such as Ouderkerk, or Guderkerk, called also Altenkerken, which is the burial-place of the Portuguese Jews of Amsterdam; Diemen situate between this city and Muiden, Amstelveen belonging to Amsterdam, &c. The lakes of Diemer and Beilmer are drained and made arable.

AMSTERDAM, or AMSTELDAM, formerly called *Amstelredam*, i. e. the dam or dyke of the Amstel, the capital of Holland and of the United Provinces, is situated at the influx of the river Amstel, from which it derives its name, into the arm of the sea, called Y or Wye, and which forms a port, capable of receiving a thousand large vessels, about two leagues from the Zuyder sea. Although the Pamphus, which is the only channel leading to it from the sea, is shallow, and ships of considerable burden are lightened before they can pass through it; and they are afterwards under a necessity of waiting for an easterly or north-east wind, in order to proceed through the Marsdiep into the North sea; yet upon the whole its commercial situation is advantageous, on account of its easy connection with the other towns of the province, and its small distance from all the ports of North-Holland, Friesland, Overijssel, and Guelderland. The soil, on which this city is seated, is marshy, and therefore its buildings are founded on oaken piles, which gave occasion to the witticism of Erasmus, "that in his country vast multitudes of people lived on the tops of trees." This circumstance restricted the use of coaches to great men and physicians, who paid a tax for this privilege; and goods are conveyed from one part of the town to another on sledges. In the beginning of the 13th century Amsterdam was a very inconsiderable fishing town, containing a few huts that were the residence of persons engaged in this occupation; but its inhabitants were gradually multiplied, and the earls of Holland gave it the title and privileges of a city; nevertheless, till the year 1490, it was surrounded merely by a weak palisado. At this time it was encompassed by a wall of brick, constructed by order of Mary of Burgundy, in order to defend it from the incursions of the inhabitants of Utrecht, who were frequently quarrelling with the Hollanders; but it was soon afterwards reduced to ashes. The people of Guelderland besieged it in 1512; but not succeeding in their attempts to take it, they set fire to the ships in the harbour. In 1525, the town-house of Amsterdam was attacked by a party of wild enthusiasts, under an anabaptist leader; but they were defeated by the citizens, and most of them were cut to pieces. Tumults of a similar kind were renewed by persons of the same description in 1535, (see ANABAPTISTS,) and these were followed by a regular and deep-laid conspiracy against the magistrates of Amsterdam, with a design to wrest the government of the city out of their hands. Van Geelen, the head of these insurgents, marched his fanatical troop to the town-house, on the day appointed, with drums beating and colours flying, and fixed there his head-quarters. He was attacked by the burghers, assisted by regular troops, and headed by several of the burgomasters of the city; and after an obstinate resistance, he was surrounded, with his whole troop, and they were put to death, in the severest and most dreadful manner. In 1578, Amsterdam was besieged by the Hollanders, and after a resistance of ten months, capitulated; on this condition, among others, that the Roman Catholics should be allowed the free exercise of their religion. The condition, however, was not observed by the Protestants; for they drove the ecclesiastics, monks, and nuns, out of

the city, broke the images, and demolished the altars. From this time Amsterdam became the general rendezvous of persons of all sects and nations; and by them it was raised to that degree of opulence and splendour to which it afterwards attained, and which it long continued to enjoy. The city has been frequently enlarged to accommodate its new accession of inhabitants; particularly in 1555, 1593, 1612, and 1673; and in 1675 it was extended to its present size, surrounded by a wall and a large ditch, 80 feet wide, and full of running water, and fortified on the land side with ramparts and 26 bastions, on each of which was afterwards placed a windmill. It has also eight gates towards the land, and one towards the water. The land side of the town may be easily inundated. Amsterdam is intersected by several navigable canals, which divide the town into a number of islands, joined to each other by wooden and stone bridges, and which are connected with the Wye and the Amstel. These canals, on the side of which are generally planted rows of trees, serve the convenience of trade, and contribute to render the streets through which they pass clean and pleasant; though in hot and calm weather they occasionally emit foetid effluvia. Of these canals the principal is that called the Ammarack, formed by the waters of the Amstel, which admits the influx of the tide, and it has on its side two large quays. It has also several bridges; the chief of which, next the sea, is called Pont Neuf, or the New Bridge; it is 600 feet long and 70 broad, with iron balustrades on each side; it has 36 arches, 11 of which are very lofty, and eight are shut up to enclose the yachts. This bridge affords a fine prospect of the city, port, and sea. The port is a mile and a half in length, and above 1000 paces in breadth; and it is filled with a multitude of vessels, the masts of which appear like a forest, and forming a kind of floating city. Towards the side of the Wye, or of the haven, the city is inclosed by double rows of piles, driven into the ground, and connected by large horizontal beams. Between these piles are openings, through which the ships pass in and out, and which are shut every evening at the ringing of a bell. The streets are generally narrow, but well paved, and the houses, which are built of brick or stone, have the air of neatness, peculiar to those of the Dutch. In the interior of the city there are agreeable walks, but the communication with the environs is chiefly by water; though there is a pleasant road to Oudekerk, through gardens and groves. The population of Amsterdam is estimated at 212,000 persons; and its commercial connections supply a very considerable, but fluctuating, accession of foreigners, who resort to this city from all nations, and are tolerated in their religious worship; though the government is restricted to persons of the reformed or Calvinistic profession. For persons of this profession, which is the established religion of the country, there are eleven churches, whose ministers are maintained by the state, and which are allowed the use of bells. The English have also had three churches; one for the Presbyterians, whose ministers have been paid by the magistracy; a second for the church of England, provided for by his Britannic majesty; and a third for the Brownists, who maintain their own ministers. These churches or congregations were formerly estimated to comprehend about a third part of the inhabitants. The Roman Catholics, who had about 27 places of worship appropriated to their use, amounted to another third part of the population; and the other third part included Jews, Lutherans, Arminians, Anabaptists, &c. The Jews had two synagogues, one of which, *viz.* the Portuguese, is the largest in Europe; and annexed to it are several

several school-rooms, in which children are taught the Hebrew language, and instructed in the Jewish religion. The most remarkable of the churches at Amsterdam is that called the New Church, and dedicated to St. Catherine. It is said to have been begun in 1408, or 1414, and not to have been finished for 100 years. The steeple, intended to be constructed before this church, and standing upon a great number of piles, is not yet completed. The pulpit is a curious structure, and is adorned with various kinds of sculpture, particularly that of the four evangelists. The paintings in the glass windows exhibit, amongst other figures, the emperor Maximilian presenting an imperial crown to the burgomasters of Amsterdam, for the crest of the arms of the city. The organ has been much admired and extolled, on account of its size, and its powers of execution. It has a set of pipes that counterfeit a chorus of voices, and has 52 whole stops, besides half stops, with two rows of keys for the feet, and three rows for the hands. Its sound, when it plays, seems to resemble that of the human voice. The grate, by which the chancel is separated from the body of the church, is constructed of Corinthian brass. The branches of the candlesticks are the richest in the seven provinces. In the church is also a marble monument, erected to admiral Ruyter, who was killed at Messina.

The largest and most stately edifice, not only of Amsterdam, but of all the United Provinces, is the Stadthouse, founded in 1648 on 13,659 piles, and comprehending in breadth 282 feet, in depth 235, and in height 116 feet. On the front is a marble pediment, on which is a female figure in relieve, holding the arms of the city, seated in a chair, which is supported by two lions, and bearing an olive branch in the right hand: on each side are four Naiads, presenting her with a crown of palm and laurel, and two other marine goddesses, offering her different sorts of fruit; there is also Neptune with his trident, accompanied with Tritons, a sea-unicorn and a sea-horse. Above are placed three statues in bronze, representing justice, strength, and plenty; and on the top of the structure is a round tower, 50 feet above the roof, adorned with statues, and an harmonious chime of bells, the biggest of which weighs about 7000 pounds; and they are made to play different tunes every month. The entrance into this edifice is by seven doors, intended to represent the seven Provinces. In the great hall are two globes, celestial and terrestrial, made of black and white marble, and inlaid with jasper and copper, 22 feet in diameter, and 69 in circumference. All the chambers are enriched with paintings, carvings, and gildings. Under the stadthouse is the treasury of the bank of Amsterdam, which is strongly secured, and entrusted to the care and inspection of the burgomasters, and opened only in the presence of one of them. In other vaults are the prisons for debtors and criminals, and also the guard-room for the citizens, in which the keys of the city are deposited every night. At the end of the great hall is the chamber of the schoppen or aldermen, where civil causes are tried; and there are also other apartments and offices of various kinds. In the second story is a large magazine of arms; and in the top of the building are six large cisterns of water, as a supply in case of fire, for the prevention of which the chimnies are lined with copper.

Another public building that deserves notice is the bourse or exchange, constructed of free-stone, and standing upon 2000 wooden piles. Its length is about 250 feet, and its breadth 140. The galleries are supported by 26 marble columns, upon each of which are the names of the people that are to meet there. They are all numbered; and there is a place fixed for every merchandise, under some one of

these numbers. A superb staircase on the right hand of the gate leads to the galleries; on one side are several shops, and on the other a place in which cloths are sold. This exchange resembles that of London. The admiralty-office is in a house which formerly belonged to the princes of Orange. The arsenal for their men of war, 200 feet long and 22 feet broad, is in the harbour; and contains, on the ground floor, bullets, on the second the arms and cordage, and on the third, sails, pulleys, flags, &c. and many curiosities. The conservatory of water on the top of the building holds 1600 tons of water, which, in case of fire, may be distributed into 16 different parts, by leaden pipes. Near this edifice is the dock or yard, in which the men of war are built, and which is 508 feet long. The East India company occupy a large building, divided into several offices or apartments, which serve as magazines or warehouses for goods of various kinds. They have also a kind of arsenal, of considerable extent. The academy, called "the illustrious school," is also a good building; it was formerly a convent belonging to the nuns of St. Agnes; it is now devoted to instruction in Latin, the oriental languages, theology, philosophy, history, &c. The lawyers and physicians have likewise their schools. Besides these, there are several hospitals, or houses for the accommodation and relief of the aged, of orphans, of sick persons, of persons infected with the plague, and of lunatics, &c. The principal houses of correction are the rasp-house and spin-house. In the former offenders are employed in sawing and rasping Brazil wood; and those who will not perform their task are placed in a cellar, into which the water runs, so that if they neglect to work the pump, they are exposed to the danger of being drowned. The spin-house is appropriated to debauched women; in this they are employed in spinning wool, flax and hemp, and other work. The hospitals are maintained partly by voluntary contributions, for receiving which the poor's boxes are fixed in different parts of the city, and partly by taxing all public diversions. Those who have the management of these public charities, are called, "deacons." The governors are selected from the most considerable persons in the city, and are nominated by the magistrates. The places of diversion appropriated to the lower classes are called, "spiel houses," in which the amusements are music and dancing. To this city belong two suburbs, one at the gate of the regulars, and the other extending as far as Overtoon, a village at a small distance, where boats that come from Leyden are forwarded over land upon wooden rollers.

Amsterdam is governed by a senate or council, called Vroedschap, and composed of 36 persons, who represent the whole body of the people, and are invested with the supreme power. Their office is for life, and the survivors supply vacancies occasioned by death. This senate elects deputies to be sent to the states of Holland, and appoints the chief magistrates, called "burgomasters," or "echevins," resembling our aldermen. Their number is 12, and four of these are annually chosen to execute the office, and are denominated "burgomasters regent." Three are discharged every year, and three new ones supply their places. During the term of the office of each, which is three months, they may be compared to the lord mayor of the city of London. To them it belongs to dispose of all offices, that become vacant during their regency. They have likewise the direction of all public works, which concern the safety, peace, and embellishment of the city. The keys of the bank of the city are in the custody of these magistrates.

The college consists of new burgomasters, who are judges
in

in all criminal affairs, without appeal; but in civil causes they may appeal to the council of the province. There are two treasurers, a bailiff, and a pensionary. The bailiff continues in office three years, and it is his business to search after criminals, to take care of their prosecution, and to superintend the execution of sentence. The pensionary is the minister of the magistracy, and is supposed to be well versed in the laws; and it is his province to defend the interests of the city. Amsterdam has in former times contributed to the public income tax above 50,000 livres per day, besides the excise of beer, flesh, and corn, which amounts to above 1,600,000. a year; and this sum is more than the amount of the payments of all the other provinces; and yet Amsterdam bears only the fifth rank in the assembly of the states of Holland, with this distinction, that as the other cities send two members, this sends four.

The militia of Amsterdam is considerable, and has usually consisted of 60 companies, each of which has from 200 to 300 men. From this service the Jews and Anabaptists are excluded, as they are not allowed to bear arms; but they are obliged to contribute to the maintenance of the city-guard, which is composed of 1400 soldiers, and to the night-watch, who patrol about the streets, and proclaim the hour. Besides these, there are trumpeters on every church steeple, who sound every half hour; and if a fire happens, they ring the fire bells, and announce where it is. The trade of Amsterdam, before the late war, and the revolutions and changes that have attended it, was very great; and it was justly regarded as the magazine or store-house of Europe. What alterations may take place in its internal government or foreign relations, in consequence of the peace that has been lately established, cannot now be ascertained. Amsterdam is distant 44 leagues from Brussels, 49 from Liege, and 112 from Paris. N. lat. 52° 22' 45". E. long. 4° 45' 30".

AMSTERDAM, now called TONGATABOO, an island in the South Pacific ocean, said to have been discovered by Tasman, a Dutch navigator, in 1643. It was visited by Captain Cook, and other later navigators. Its extent is about 16 miles in length, and its greatest breadth about eight. It is about six leagues west of Middleburgh. S. lat. 21° 9'. W. long. 174° 46'.

The shore of this island is surrounded by a coral rock, and its most elevated parts are not above six or eight yards above the level of the sea. Its interior parts are highly and universally cultivated, the whole island consisting of inclosures, with reed fences, about six feet high, intersected with innumerable roads; and its plantations supply some of the richest productions of nature. It abounds with bread-fruit, cocoa-nut trees, plantains, bananas, shaddock, yams, sugarcanes, and a fruit like a nectarine, called by the natives "fig-hega." Casuarinas, pandangs, and wild sago palms appear here with their various tints of green, and barringtonia of the size of the largest oaks. As the coral rock, which forms the basis of this spot, is but thinly covered with mould, the bread-fruit does not thrive with the same luxuriance as at the Society islands; neither does this island afford an equal supply of water, though the ships were furnished with as much as they wanted from a pool to which they were directed by the chief.

The men and women are of the common European size; their colour is that of light copper; and they are well shaped, have regular features, and are lively and active. They have fine eyes, and in general good teeth even to advanced age. The women are merry and talkative; many of them are modest, and others of a different character. They swarm about the ships, without any covering, like

amphibious creatures; and were easily persuaded to come on board; though they would not stay after sun-set, but returned to pass the night on shore with the other inhabitants, under the shade of the wood that lined the coast, where they had large fires, and were heard conversing together almost during the whole night. Their hair is black, and worn short, excepting a lock on the top of the head, and a small quantity on each side. The men shave their beards close by means of two shells; and the hair of many was observed to be burnt at the ends, and strewed with white powder, which was found to be lime made of shell or coral, which had singed the hair; some used blue powder, and others an orange-coloured powder, made of turmeric. The dress of both sexes consisted of a piece of cloth or matting, wrapped round the waist, and hanging below the knees. From the waist upwards they were generally naked; and it seemed to be a custom with them to anoint those parts of the body every morning. The practice of tattowing, or puncturing the skin, prevailed amongst them; the men performed this operation from the middle of the thigh to the part above the hips; the women performed it slightly and only on their arms and fingers. The ornaments worn by men as well as women, were amulets, necklaces, and bracelets, the bone, shells, and beads of mother-of-pearl, tortoise-shell, &c. The women also wear on their fingers neat rings, made of tortoise-shell, and occasionally pieces in their ears, about the size of a small quill. They have also a curious apron, made of the cocoa-nut shell, and composed of a number of small pieces, so disposed as to form stars, half-moons, little squares, &c. and studded with beads and shells, and covered with red feathers, so as to produce an agreeable effect. They have cloth similar to that of Otaheite, but not so fine; and they have a method of glazing it, which renders it more durable, and capable, for some time, of resisting rain. Their colours, which they procure from vegetables, are black, brown, yellow, purple, and red. Of matting they have different sorts, used for cloathing, for bedding, and for sails to their canoes; they have also several kinds of baskets made of the same materials with their mats, or of the twisted fibres of the cocoa-nut, which they form of different colours, and stud with beads made of shell or bones. They appear to be ingenious in designing and executing various articles of this kind. Their fishing implements are much the same with those of the other islands; their nets are formed of strong though slender threads. Although their disposition is friendly, they possess very formidable weapons; some of their spears being furnished with many barbs. This island is often stained with the blood of human victims; nor do the ideas of property, which prevail among the inhabitants, prevent their stealing from strangers. The Missionaries, in their voyage, some of whom were left on this island, imparted useful arts to the natives; but the rats were found very destructive to the European plants. These, with hogs, dogs, and guanos, were the only quadrupeds in the islands, till cats were left there in 1797. The morais are here called fiatookas; and are constructed in the form of terraces, with high steps, and the material of which they are formed is coral. In the missionary voyage of 1797 there is an interesting map of this island.

AMSTERDAM, an uninhabited island in the Frozen Sea, near the west coast of Spitzbergen. This is also the name of an island in the Indian Sea. S. lat. 38° 42'. E. long. 76° 54'. (for an account of which, see ST. PAUL); and of another in the Chinese Sea, between Japan and the island of Formosa.

AMSTERDAM, NEW, a name originally given by the Dutch to the city of New York, in America. Amsterdam

is also the name of a new township in Montgomery county, New York; containing 235 inhabitants, who are electors.

AMSTOTTEN, a town of Germany, in the arch-duchy of Aultria, eight miles south-west of Ips.

AMTITZ, a feignory of the circle of Guben, in Lufatia, containing the market town of Amtitz, with a citadel, and several villages.

AMTRUSTIO, in *Ancient Charters*, denotes a sworn or liege tenant, or vassal, of the ancient French or German kings.

The word is also written *antruffio*. Spelman derives it from the German *ampt*, *office*, *business*, and the English *trustee*.

AMTSZELL, in *Geography*, a town of Germany, in the circle of Swabia, eight miles east of Ravensburg.

AMU, or AMOL, or AMU-DARIA, called also GIRON, and said to be the *Oxus* and *Badrus* of the ancients, a river of Independent Tartary, in Bucharía, which formerly discharged itself by two channels or mouths into the Caspian sea; but these are become dry, and the stream has been diverted by art into the sea or lake of Aral. In the reign of Cyrus it was the boundary of the Persian monarchy, and some authors have supposed it to be the Araxis of the ancients. Its source is in the mountains of Paropamisus.

AMU. See AMOL.

AMUDA, in *Ancient Geography*, a town of Syria, distinguished in the *Notitia Imperii* from *Anida*; but its situation is not known.

AMUDARSA, a town of Africa Propria, in the territory of Bizacium, mentioned by Antonine, and placed by M. d'Anville north of Septimunia. It was an episcopal see.

AMULET, AMULETUM, formed from *amoliri*, to remove, a kind of external medicament, to be worn about the neck, or other part of the body, for preventing or removing diseases. Such are quills of quicksilver, or arsenic, which some hang on the neck, or wear under the shirt, against the plague, and other contagious diseases; as also the bloodstones worn by others against hæmorrhages; and that worn by the women of the East Indies to bring the *menfes*.

Amulets are also frequently no other than a sort of spells, or charms; consisting of quaint words and characters, supposed to have the virtue of warding off mischief, witchcraft, and disease, and to which credulity and superstition have annexed wonderful properties. Pliny makes frequent mention of them.

Persons of all ages and nations have used them. The materials of which they were formed, the characters inscribed upon them, and the superstitious ceremonies with which they were prepared, were very various. Amongst the ancient Egyptians they were very common, and those denominated abraxas were peculiarly distinguished. The Persians, having observed in Egypt the practice of suspending to the neck small cylinders, adorned with figures and hieroglyphics, adopted a similar custom, and instead of the Egyptian deities, they substituted representations of subjects deduced from their history and theology, and annexed to them hieroglyphical characters, disposed in the form of a prayer, which, in their opinion, gave a secret virtue to these amulets. A similar practice prevailed also among the Etruscans. The Jews confided in their efficacy for driving away diseases, and they are prohibited by the *Mischna*, unless they had been effectual in the cure of at least of three persons. Christians also in former ages had recourse to amulets, made of the wood of the cross, or ribbands with texts of scripture written on them, as preservatives against diseases.

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The Greeks called this kind of remedies *φιλакτηρια*, *phylacteries*; *πειρακτηα*, *periakta*, *αποτελεσματικα*, *περισματικα*, *βεβησια*, and *εγκολπια*. The Latins call them *amulata*, *apprusa*, *pentacula*, &c.

Some think this word derived from *amula*, a small vessel with lustral water in it, anciently carried in the pocket by the Romans, for the sake of purification and expiation. This last opinion appears the more probable, in that some amulets were made in the shape of little vessels, as appears from the testimony of Pliny, who observes, that pieces of amber, cut in form of little vessels, were hung about children's necks for amulets.

Amulets are by some considered as a natural species of *talismanians*. Others rather make talismanians a species of amulets. The *bullæ*, worn by the ancients; the *abraxas* of the Basilidians, &c. were also amulets. See ABRAXAS, ABRACADABRA, and TALISMAN.

The ancients made great use of gems for amulets; the whole East, according to Chifflet, wore a kind of jasper for this purpose.

That species of amulets compounded of poisons, used as preservatives from the plague, are more particularly denominated *zencucha*.

Under amulets, some also include medical or other substances fixed to brutes, or even plants, to preserve them from certain diseases and dangers.

Charms, words, scrolls, magic figures and numbers, make a large class of amulets, to which the Turks are still greatly devoted. Their amulets, called *chaimaili*, are little bits of paper of two or three fingers breadth, rolled up in pieces of silk, containing short prayers or sentences cut out of the Alcoran, with circles and other figures, in which they inscribe the name of Jesus, the figure of the cross, &c. They hang them about their necks, or place them under their arms-pits, or in their bosom near their hearts, and especially when they go to war, as a preservative against the dangers of it.

The pope is supposed to have the virtue of making amulets, which he exercises in the consecration of *Agnus Dei's*.

Amulets are now much fallen from the repute they were anciently in; yet the great Mr. Boyle alleges them as an instance of the ingress of external effluvia into the habit; in order to shew the great porosity of the human body.—He adds, that he is persuaded some of these external medicines do answer: for that he himself, having once been subject to bleed at the nose, and reduced to use several remedies to check it, found the moss of a dead man's skull, though only applied so as to touch the skin till the moss was warm thereby, the most effectual of any. The same Mr. Boyle shews how the effluvia, even of cold amulets, may, in tract of time, pervade the pores of a living animal; by supposing an agreement between the pores of the skin, and the figure of the corpuscles. Bellini has demonstrated the possibility of the thing in his last propositions, *De Febribus*; and the like is done by Dr. Wainwright, Dr. Keill, &c. However, these are principally used at present by empirics, women, and credulous superstitious persons.

AMULET, in a more particular sense, is restrained to such medicines as do not operate by any physical virtue, or to those wherein there is no proportion between the cause and effect.

In this sense medicines, which operate by effluvia, odours, and the like, do not belong to the class of amulets.

In this sense also those essence-vessels worn by hysterical women on their breasts, called by the Greeks *καρδιοφυλακια*,

and by the Latins *domus pectoris*, were not properly amulets.

AMULET is sometimes also applied, in a more extensive sense, to all medicines, whether internal or external, whose virtue or manner of operation is *occult*.

AMULET, in *Cookery*. See OMILET.

AI-ULETICS, in *Medicine*, is used by some writers for what is more frequently called an *amulet*.

Amuletics amount to the same with what are otherwise called *sympathetics*, and have been chiefly used in late times to stop bleeding; such are the *perforaria*, *lapis hematites*, dried toads, &c. also against warts, *farcomae*, &c.

Sir Kenelm Digby's sympathetic powder is one of the principal amuletics in cases of hemorrhages; and with many the *ancora sacra*.

AMUNCLA, in *Ancient Geography*, a town of Africa Propria, situate between the two Syrtis.

AMUND, in *Ancient Writers*, denotes a person free or discharged from tuition or wardship. The word is also written *amund*, *amod*, and *amont*; and is compounded of the privative *a*, and the Saxon *mund*, *defence*, *tuition*.

AMUR, or AMOOR, in *Geography*, a river of Asiatic Russia, or rather of Chinese Tartary, is formed of two rivers, Argoon and Shilka, and first takes this name on their conjunction in the Chinese territory, E. long. 121° 14', and discharges itself into the Pacific ocean, opposite to the island of Sakhalen, E. long. 142° 14'. N. lat. 53°. The Shilka rises in the Yablonnoy mountains, E. long. 109° 14'. N. lat. 49°, being formed of the tributary streams, called Ingoda, Onona, and Nertcha, passes by Nertchinsk, through the Nertchinskoi district, and joins the Argoon. The Argoon has its source in a lake upon the frontier that parts Russia from China, and forms the border all the way to its exit, in the Shilka. By the treaty of 1727 the Amoor belongs entirely to China; otherwise, the ship-building on the sea of Okhotsk would be much facilitated to the Russians, as great part of their materials might then be brought by water, which are now conveyed by land at a great expence.

AMULO, in *Biography*, was born in France, and after having been deacon of the church of Lyons, under Agobard, was on his death raised to the archbishoprick of that see in 841. He condemned the veneration that was paid to relics as an occasion of error and superstition; he also wrote a letter against Goteschaleus, and some other pieces upon Grace, Predestination, and Free-will; and "a book against the Jews," addressed to king Charles, the brother of the emperor Lotharius. Amulo, considering the time in which he lived, and his high rank in the church, was a man of distinguished liberality and moderation; he was much esteemed on account of his talents and eloquence; and shared in an eminent degree the favour of Charles the Bald. He presided in the council of Lyons in 845. His book against the Jews was published in 1656 by Father Chifflet, under the name of Rabanus Maurus. All his works, except this, were published by Baluze, with notes, at the end of his edition of Agobard, whence they were transferred to the Bibliotheca Patrum. Trithemius says, that Amulo was well skilled in the scriptures and ancient writers, very conversant in secular learning, famous for his knowledge of the Hebrew as well as Latin tongue, and of a quick and lively genius. Cave, H. L. tom. ii. p. 29. Mosheim, vol. ii. p. 332.

AMURACORY, in some *Writers of the Middle Age*, denotes a kind of Turkish soldiery belonging to the corps or order of janizaries.

They seem to be the same with those otherwise called *Scraparii* and *Paciliatores*.

AMURATH, or MORAD, I., in *Biography* and *History*, Sultan of the Turks, was the son of Orchan, and the brother of Solyman, and succeeded his father, A. D. 1360. In pursuing the conquests of the Greek empire, he subdued without resistance the whole province of Romania or Thrace, from the Hellespont to mount Hemus, and the verge of the capital, and made choice of Adrianople for the royal seat of his government and religion in Europe. He afterwards marched against the Sclavonian nations, between the Danube and the Adriatic, *viz.* the Bulgarians, Servians, Bosnians, and Albanians, and having vanquished these hardy and warlike tribes, he converted them by a prudent institution into the firmest and most faithful supporters of the Ottoman greatness. Being reminded by his vizir, that, according to the Mahometan law, he was intitled to a fifth part of the spoil and captives, and that the duty might be easily levied, by stationing vigilant officers at Gallipoli to watch the passage, he selected for his use the stoutest and most beautiful of the Christian youth, and educated many thousands of the European captives in religion and arms. This new militia was consecrated and named by a celebrated dervish, who, standing in the front of their ranks, stretched the sleeve of his gown over the head of the foremost soldier, and pronounced his blessing in these words: "Let them be called Janizaries, (*yenghi cheri*, or new soldiers); may their countenance be ever bright! their hand victorious! their sword keen! may their spear always hang over the heads of their enemies! and wherefoever they go, may they return with a white face!" Such was the origin of the JANIZARIES. By the assistance of these troops, Amurath extended his conquests in Europe and Asia; and he succoured the emperor, John Palaeologus, against the Bulgarians. When a rebellion was concerted by the eldest sons of these two sovereigns against their fathers, Amurath punished his own son by depriving him of his sight, and insisted on the same penalty being inflicted on the son of the emperor. After a prolonged course of success, Amurath was opposed by a formidable league of the Walachians, Hungarians, Dalmatians, Triballians, and Arnauts, under the command of Lazarus, prince of Servia. By the battle of Cossova, Lazarus was defeated and taken prisoner, and the league and independence of the Sclavonian tribes were finally crushed. But as the victor walked over the field, viewing the slain, and triumphing in his success, a Servian foldier started from the crowd of dead bodies, and pierced Amurath, at the moment of his exultation, in the belly with a mortal wound. Others have attributed his death to a Croat, who is said to have stabbed him in his tent; and this accident was alleged as an excuse for the unworthy precaution of piioning, as it were between two attendants, an ambassador's arms, when he was introduced to the royal presence. Amurath died in the 71st year of his age, and 30th of his reign, A. D. 1389. His character has been highly extolled by the Turks, and he has been represented as mild in his temper, modest in his apparel, temperate in his mode of living, and a lover of learning and virtue; he was reproached, however, by the Moslems for his absence from public worship, and he was corrected for his negligence by the firmness of the musti, who refused to admit his testimony in a civil cause. The sultan, it is said, proscribed by the reproof, and atoned for his fault by erecting a magnificent mosque at Adrianople. Gen. Dict. Gibbon's Hist. vol. xi. p. 444. &c.

AMURATH, or MORAD, II., succeeded his father Mahomet I., in 1422, at the age of 18 years. His reign commenced

meaced with the capture and death of an impostor, who pretended to be Multapha, the son of Bajazet, and who was supported by the Greek emperor. He then invested Constantinople; but his attention was diverted by the rebellion of Multapha, his younger brother, who was imprisoned and strangled in his presence. In 1424 he restored the discipline of the Janizaries, and reformed the abuses of the Spahis; and in 1426 he laid waste the isle of Zante, belonging to the Venetians. In the next year he invaded and subdued the Morea, and obliged the Grecian emperor to pay him tribute; and having taken Thessalonica, or Saloniki, he compelled the Venetians to make peace. In 1434 he suppressed the rebellion of Karaman-Ogli; and when a war broke out between the Ottoman empire and the king of Hungary, in which the famous Hungarian general, John Huniades, gained several victories, Amurath crossed the Danube, and laid siege to Belgrade, but Huniades obliged him to raise it. He also invaded and subdued Servia, which was restored in the peace between Hungary and Poland; and on this occasion it was stipulated, that neither party should cross the Danube in a hostile manner into the dominions of the other. Amurath, having awed Karaman-Ogli, who was renewing his attacks, into submission, and granted him peace in compliance with the intreaties of his wife, found his dominions in a state of tranquillity; and formed a resolution of abdicating the Turkish throne. Accordingly, in 1445, at the age of 40 years, perceiving the vanity of human greatness, he resigned the empire to his son, Mahomet, and retired to Magnesia, where he joined the society of dervises and hermits, and adopted all their austerities and fanatic rites. If his motives in this extraordinary proceeding had not been debased by an alloy of superstition, we might have extolled his magnanimity. From this dream of enthusiasm, as it may be justly called, he was soon roused by the Hungarian invasion. Ladislaus, the king of Hungary, and his auxiliaries, instigated by Karaman-Ogli, the inveterate foe of the Turkish empire, penetrated into the Mussulman territories, and Amurath, urged by the earnest intreaty of his son, and the wishes of the people, consented to take the command of the army. Advancing by hasty marches from Adrianople, at the head of 60,000 men, he met the Christians at Warna; and on the first onset the Turkish wings were broken; and Amurath perceiving the flight of his squadrons, despaired of his fortune, and that of the empire. During the heat of the engagement, a copy of the treaty of peace between himself and the Hungarian king, was displayed in the front of the ranks, and it is said, that the sultan in his distress, lifting his eyes and hands to heaven, implored the protection of the God of truth, and called on the prophet Jesus himself to avenge the impious mockery of his name and religion. Whilst the battle was in suspense, the young king of Hungary rushed forward in the confidence of victory, till his career was stopped by the impenetrable phalanx of the Janizaries. If we may credit the Ottoman annals, his horse was pierced by the javelin of Amurath; he fell among the spears of the infantry; and a Turkish soldier proclaimed, with a loud voice, "Hungarians, behold the head of your king!" The death of Ladislaus was the signal of a total defeat. Ten thousand Christians were slain in the disastrous battle of Warna; and of the number was cardinal Julian Cæsarini, distinguished by his talents and learning, and by a volatile genius, equally adapted to the school, the camp, and the court. The circumstances of his death are variously related; but it is believed, that a weighty incumbrance of gold impeded his flight, and tempted the cruel avarice of some

Christian fugitives. However, it is allowed, that he fell a just victim to that pernicious casuistry by which he quieted the mind of Ladislaus in the violation of his oath, and absolved him in the pope's name from the guilt of perjury. The loss of the Turks, more considerable in numbers than that of the Christians, bore a smaller proportion to their total strength, and yet Amurath himself was not ashamed to confess, that his ruin must be the consequence of a second and similar victory. This battle happened on the 10th of November, A. D. 1444; and was followed by the retirement of Amurath a second time to the stillness and devotion of private life. In 1445 he was again called forth to public service by an insurrection of the Janizaries, who filled Adrianople with rapine and slaughter. Having quelled this tumult, he turned his arms against the famous Scanderbeg, prince of Epirus, who had revolted; and followed him to Albania, at the head of 60,000 horse and 40,000 Janizaries. The conquests of the sultan were confined to the petty fortrefs of Sfetigrade; and he retired with shame and loss from the walls of Croya, the castle and residence of the Castriots. Amurath, by the alternative of death or the Koran, converted all the Epirots to his own faith. The Hungarians renewed their invasion of the territories near the Danube; and Amurath fell in with them near Cossova, the place where Amurath I. had been victorious. The result of many partial but bloody actions was the route of the Christian forces, and the capture and imprisonment of Huniades, the supreme captain and governor of Hungary, in his retreat. Amurath returned to Adrianople; and having given up all thoughts of resignation, he married his son Mahomet to the daughter of the prince of Elbistan, and appointed him to the government of Asia Minor. By his disappointment at Croya, and the fatigues of his retreat, his last days were not only embittered, but probably shortened; for on his arrival at Adrianople he was seized with a disorder in his head, which terminated his life in the 47th year of his age, and the 29th of his reign. According to Cantemir, the historian of the Othman empire, he lived 49, and reigned 30 years, six months, and eight days. According to this historian, "he was a just and valiant prince, of a great soul, patient of labours, learned, merciful, religious and charitable; a lover and encourager of the studious, and of all who excelled in any art or science; a good emperor, and a great general. No man obtained more or greater victories than Amurath: Belgrade alone withstood his attacks. Under his reign, the soldier was ever victorious; the citizen rich and secure. If he subdued any country, his first care was to build mosques and caravanferas, hospitals, and colleges. Every year he gave a thousand pieces of gold to the sons of the prophet, and sent 2500 to the religious persons of Mecca, Medina, and Jerusalem." It should be considered, however, that cruelty and violence have been sanctioned by zeal in propagating the Mahometan faith; and that, in the hands of the Turks, the scymetar was the only instrument of conversion; after all the abatements that ought to be made in the preceding panegyric, it is generally allowed that the moderation and justice of Amurath have been attested by his conduct. In the vigour of his age and military power, he seldom engaged in war till he was justified by a previous and adequate provocation; when victorious, he was disarmed by submission; and in the observance of treaties, his word was sacred and inviolate. Mod. Univ. Hist. Gibbon's Hist. vol. xii. p. 150, &c.

AMURCA, in *Pharmacy*, a medicine made of the refuse or recement of expressed OLIVES.

Amurca, being boiled in a copper vessel to the consistence

of honey, becomes a drug of some use in medicine, being reputed an astringent and drier; and as such sometimes prescribed in ulcers, as well as against diseases of the teeth, eyes, &c.

Hippocrates applies the term amurea to a crude, immature, putrid state of the liver.

Some authors have also given the name amurea to the juice of fluid found in the *RENES fucenturiati*.

AMUSKEAG FALLS, in *Geography*, are on Merrimack river, in New Hampshire, America, 16 miles below Concord, and seven below Hookset falls. There are three of them, one below the other, so that the water falls about 80 feet in the course of half a mile. In the middle of the upper part of the second fall is a rocky island, in which are found several excavations or pits, by the circular motion of small stones, impelled by the force of the descending water, which are capable of holding several tons of water. A little below the falls is a bridge 556 feet in length, and 20 in breadth, consisting of 2000 tons of timber. N. lat. 42° 59'.

AMUTRIUM, in *Ancient Geography*, a town of Dacia, according to Ptolemy.

AMUY, in *Geography*, a town of India, beyond the Ganges, near the western bank of the lake Chamai, on the confines of the kingdom of Kanduana.

AMWELL, a village of England in the county of Herts, 21 miles north of London, and one south-west of Ware, in which is the spring of the New River, that supplies a considerable part of London with water. This river or canal was projected by Sir Hugh Middleton, in 1606.

AMY, N. in *Biography*, advocate in the parliament of Aix, in France, died in 1760, and is known by some valuable works, in natural science, viz. "Experimental Observations on the Waters of the Seine, Marne, &c." 12mo. 1749; "New Filtrating Fountains." 12mo. 1757. "Reflections on Copper, Lead, and Tin Vessels," 12mo. 1757.

AMY, in *Law*, the person next of kin to an orphan, or infant, who is to be intrusted for him; properly called *PROCHEIN amy*.

The word in French literally signifies *friend*.

AMY, *alien*, is a foreigner here, subject to some prince, in friendship with us.

AMYBUS, in *Ancient Geography*, an island of the Red Sea, supposed to be the same with AMICUS, or *Amici Insula*.

AMYCI CAMPUS, a name given by Polybius to a plain in the midst of which runs the river Orontes, between Libanus and Antilibanus.

AMYCI PORTUS, was situated on the Thracian Bosphorus, north of Nicopolis, and south of Fanum Jovis. It derived its name from Amycus, an ancient king of the Rebrices, who was killed in a combat with Pollux, and on whose tomb was planted a laurel, Gr. *Daphne*, whence the port was called *Daphnis portus*.

AMYCLÆ, a city of Peloponnesus, in Laconia, situate south-west of Sparta, and near it. Although small, it was famous for its fruit-trees, so that it was called by Statius (Theb. ix. v. 769.) "virides Amyclæ." According to Polybius, the temple of Apollo in this place was the most celebrated in Laconia, whence it was denominated by Statius, "Apollinæ Amyclæ;" and it was pretended that Leda, the mother of Castor and Pollux, resided in this place, whence Silius Italicus, (lib. xi. v. 434.), describes it thus:

"Lædis veniens victor Xanthippus Amyclis.

Venus had also a statue in this place, executed by Gitiades. When this part of Laconia was attacked by the Romans, Q. Flaminius encamped near Amyclæ, and ravaged its territory; and the city was afterwards destroyed. In the time of Pausanias, there were some remains of its ancient magnificence.

AMYCLÆ was also a town of Italy, in Upper Calabria, said to have been peopled by a colony from Amyclæ, in Laconia, but its situation has not been ascertained; though it is supposed to have been between Cajeta to the south-east, and Terracina to the north-west. Pliny and Solinus say, that the inhabitants were so infested with serpents, as to be under a necessity of abandoning their dwellings. The Amyclæ were distinguished among the ancient poets by the epithet, "taciti," or silent, as some say, because it was built by the Lacedæmonians, who, having adopted the system of Pythagoras, recommended silence; or, according to others, because a law was enacted in this place, for the purpose of preventing false rumours, by which the people were alarmed, which prohibited any person from reporting the approach of an enemy; but this law was in the end the cause of the ruin of the city; for the Dorians arrived unexpectedly at the walls, and took the city. To this circumstance Silius refers, lib. viii. v. 530:

"—Quaque evertere silentia, Amyclæ.*"

AMYCLÆI, a people of Africa, who, according to Dionysius Periegetes, inhabited Cyrenaica.

AMYCLÆUM, a town and port of the island of Crete, according to Eustathius.

AMYDON, a town of Macedonia, upon the Axius, in Pæonia, mentioned by Steph. Byz.

AMYGDALA, in *Natural History*, a species of ECHINUS, in the class mollusca of worms, so called, because in shape it resembles an almond.

AMYGDALÆ, in *Surgery*, denotes superfluous flesh growing at the root of the tongue.

AMYGDALÆ, in *Anatomy*. See ALMONDS.

AMYGDALATE, an artificial milk, or emulsion, made of blanched almonds, &c.

AMYGDALÆ. See ALMOND.

AMYGDALIS SIMILIS,* in *Botany*. See THEOBROMA.

AMYGDALOID, in *Natural History*. See TOADSTONE.

AMYGDALUS, in *Botany*, a genus of the *icosandria monogynia* (*polyandria monogynia*, Gmelin,) class and order, of the natural order of *pomaceæ* and *rosaceæ* of Jussieu; its characters are, that the *calyx* is a perianthium, one-leaved, tubulous, inferior, quinquefid, deciduous, divisions spreading and obtuse; the *corolla* of five petals, oblong-ovate, obtuse, concave, inserted into the calyx; the *filamina* have filaments about 30, filiform erect, shorter by half than the corolla, inserted into the calyx, anthers simple; the *pyllium* has a roundish, villose germ, simple style, of the length of the stamens, and headed stigma; the *pericarpium* is a roundish, villose, large drupe, with a longitudinal furrow; the *seed* is a nut, ovate, compressed, acute, with prominent sutures on each side, reticulated with furrows, and dotted with small holes. Obs. the nut of the almond is covered with a dry skin; that of the peach with a small pulp. There are seven species. 1. *A. persica*, with all the serratures of the leaves acute, and the flowers sessile and solitary. There are two varieties, viz. the *peach-tree*, with downy fruit, and the

nectarine,

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nectarine, with smooth fruit. For a particular account of both these, their varieties, and different qualities, and the method of their culture and propagation, See *AMYGDALUS*, in *Gardening, infra*. 2. *A. communis*, the almond tree, with the lower serratures of the leaves glandulous, and the flowers sessile and in couplets. Some reckon three varieties, *viz.* *α.* *A. sylvestris*, the common or wild almond; *β.* *fativa*, sweet or Jordan almond; and *γ.* *A. amara*, bitter almond. Miller makes three species of the almond, *viz.* 1. *A. communis*, or common *A.* cultivated more for the beauty of its flowers, than for its fruit; of which there are two varieties, one with sweet, the other with bitter kernels, which often arise from the fruit of the same tree. 2. *A. dulcis* or Jordan *A.* the nuts of which are frequently brought to England; these have a tender shell, and a large sweet kernel. The leaves are broader, shorter, and grow much closer than those of the common sort, and their edges are crenate. The flowers are very small and of a pale colour, inclining to white. These trees have been often raised from the almonds which came from abroad, and the plants have been found to maintain their difference from the common almond. 3. *A. fativa*, with narrow sharp pointed leaves, flowers much smaller than those of the common almond, and white; the shoots of the tree smaller and joints closer than those of the common sort; and the tree is less hardy, and should therefore have the advantage of a warm situation, otherwise it will not thrive. This sort flowers in the Spring, and rarely produces fruit in England. From an old tree, placed against a wall, with a south aspect, the fruits have some years been ripe, and well flavoured, but their kernels have been small.

Duhamel gives seven species and varieties of the almonds, *viz.* 1. Common *A.* with a small fruit. 2. Sweet *A.* with a tender shell. 3. Bitter *A.* with a tender shell; a variety of the preceding. 4. *A.* with a small fruit, and a tender kernel: *Amande-sultane*,—and, with a still smaller fruit, *amande-pistache*. 5. Sweet *A.* with a large fruit. 6. Bitter *A.* with a large fruit, a variety of the preceding. 7. Bitter *A.* probably a variety of the first. He also mentions another, which he calls *amandier-pecher*, and supposes to have been produced from the impregnation of the almond, by the farina of the peach.

The common almond has leaves which resemble those of the peach, but the lower serratures are glandular; they proceed from buds both above and below the flowers, and not as in the peach, from the ends of the shoots above and not below the flowers. The form of the flowers is not very different, but they usually come out in pairs, and vary more in their colour from the fine blush of the apple-blossom to a snowy whiteness. The chief obvious distinction is in the fruit, which is flatter, with a coriaceous covering, instead of the rich pulp of the peach and nectarine, opening spontaneously when the kernel is ripe. The shell is not so hard as in the first species, and is sometimes tender and very brittle; it is flatter, smoother, and the furrows or holes are more superficial. This tree is a great object in some parts of Italy, and in the south of France, and there are large plantations of it in Provence and Dauphiné. It is common in China, and most of the Eastern countries; and also in Barbary, where it is a native. In the time of Cato it seems not to have been cultivated in Italy; for he calls the fruit *nuces graeca*, or Greek nuts. With us it is valuable as an ornamental tree in clumps, shrubberies, &c. within view of the mansion; for it displays its delicate red-purple bloom in the month of March, when few other trees have either leaves or flowers. An almond-tree, covered with its beautiful

blossoms, is one of the most elegant objects in nature. In a forward Spring, they often appear in February; but in this case, the frost generally destroys them, and they bear little or no fruit; but when they flower in March, they seldom fail to bear plenty of fruit, very sweet, and fit for the table when green, but they will not keep long.

3. *A. pumila*, *perfica africana nana*, &c. of Herm. lugdb. *A. perfica nana*, &c. of Pluk. phyt. *perfica amygdalus* of Miller, double-flowered dwarf-almond, with leaves veined-wrinkled, or leaves lanceolated and double serrated, Willd. The branches are smooth, two or three feet high, and dark-purple; the flowers are generally two in a bud and sessile; the calyx reddish; the petals emarginate (acuminate, Reichard), red, longer than the tube of the calyx; filaments paler; germ and style pubescent at bottom; stipules linear and very deeply serrate; varies with double flowers; and its native country is Africa. These shrubs make an agreeable variety amongst low flowering trees, in small wilderness quarters; the single sort flowering in the beginning of April, and the double commonly three weeks later. It was cultivated by Miller in 1731. 4. *A. nana*, *A. indica nana* of Pluk. and Miller, *prunus inermis*. &c. of Gmelin, *Sibir, armeniaca perficæ solis*, &c. of Amm. Ruth. common dwarf almond, with leaves attenuated at the base. The leaves are lanceolated, subpetiolated, scattered, somewhat rigid, smooth, the serratures very sharp and somewhat spinose; the stipules linear, long and deciduous; the flowers very abundant on the twigs, appearing with the first leaves from all the buds; the calyx subsessile and reddish; segments acute, green, and very finely serrulate; petals of a fine rose-colour: stamens about 20, the inner ones gradually shorter; pistil very villose; fruit usually solitary, sessile, somewhat compressed, very hirsute, with a harsh yellowish wool, the size of a hazel nut, which is of a sharp ovate form, yellowish-grey colour, and grooved at the sutures; the kernel resembles that of the peach and colour in taste; but the trunk seldom an inch in thickness. It varies much in size; on the banks of the Volga, it is annually set on fire, and never rises to any height, but is low and shrubby, creeping very much at the root, and obstructing the plough. In Cherson it scarcely attains a span in height, but in the Ukraine it grows a fathom high, as it does in gardens, where the leaves are broader, and sometimes five inches long. It blooms in April, when all the young shoots are covered with flowers of a peach-blossom colour, and makes a fine appearance among shrubs of the same growth. It is a native of the northern parts of Asia, abounds in Calmuc Tartary, and is very common on the banks of the Volga; cultivated in Kew garden by Mr. Sutherland, in 1683. See *AMYGDALUS infra*. 5. *A. incana*, hoary dwarf *A.* with leaves lanceolate, serrate, wrinkled, subsessile, white tomentose beneath. It may be doubted whether this be not a variety of the preceding species. 6. *A. orientalis*, *A. argentea* of La Marck, silvery-leaved *A.* with leaves lanceolate, quite entire, silvery, perennial, and petiole shorter. The flowers are small, and are not succeeded by fruit in England. It was found growing near Aleppo, whence the fruit was sent to the duke d'Ayen, in France, who raised several plants in his garden at St. Germain's, and sent some to Mr. Miller, who cultivated them at Chelsea, in 1759. It is a native of the Levant. 7. *A. cochinchinensis*, with leaves ovate, quite entire, and racemes, small, and subterminal. This is a large tree, with spreading branches, acuminate, waved, shining, and alternate leaves, white corolla, drupe about half an inch in diameter, and kernel like the common almond, in form.

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form and fruct; a native of the vast woods of Cochinchina. In the culture and propagation of almonds, see *AMYGDALUS* in *Gardening, infra*.

For the diætic and medicinal properties and uses of Almonds, see *ALMONDS*.

AMYGDALUS Æthiopia. See *BRABEUM*.

AMYGDALUS Indica. See *TERMINALIA*.

AMYGDALUS, in *Gardening*, is applied to the *almond, peach, and nectarine trees*; the class, order, and genuine characters, as well as the different species of which, have been given above. In order to render their culture and modes of propagation as clear and intelligible as possible, it may be proper to consider each of them separately.

1st. *Amygdalus, almond-tree.* This sort of tree is cultivated both for the advantage of the fruit, and as being highly ornamental in shrubberies, plantations, and other descriptions of pleasure ground, from its coming into bloom early in the Spring. It is, however, less important in the former than the latter point of view, as the fruit is often liable to miscarry in this climate. All the species and varieties of this tree are deciduous, and of a hardy nature, thriving well in most common garden soils. Those of the tree kind frequently rise to fifteen or twenty feet in height, dividing in many spreading branches, which ultimately form beautiful heads, that are generally well adorned in the beginning of March with innumerable flowers, which continue in full bloom for a fortnight or three weeks, and are followed by the leaves, which are long and narrow, and the fruit takes its growth. This is downy, rather large, and of an oval form, consisting of a thick, tough, leathery substance that embraces an oblong nut or stone, in which the kernel or almond is inclosed, which is the only part of the fruit that is capable of being made use of.

The dwarf shrubby sorts of this tree do not, however, in general, exceed three or four feet in height, having slender stems, which send forth a great number of small branches near to the ground; and in the single-flowered kind various suckers are frequently sent up from the root. And in both the double and single flowered almond tree, all the young branches are thickly beset with flowers in the Spring, which, from their having a fine pale red colour, and continuing some time in blow, are highly ornamental. The single sort have their flowers coming out about the end of March, and the double kind in the beginning of April, each remaining about a fortnight in blow.

The sorts chiefly cultivated for use in this country, are, according to Mr. Forsyth, the *tender-shelled almond*, the *sweet almond*, the *common or bitter almond*, the *sweet Jordan almond*, and the *hard shelled almond*. Those propagated only for ornament are the *dwarf* and the *double-flowering almonds*.

Methods of Propagation, &c.—These are either by budding them upon plum, almond, or peach stocks, or by sowing the stones of the fruit. It is observed in the “*Universal Gardener*,” that in the first way they much sooner form full and regular heads, and attain the state of flowering and producing fruit; and that if it be intended to continue the *sweet-kernelled*, or any other particular sort, it can only be effected with certainty by inoculation, as when raised from seed they are apt to vary, all the varieties often proceeding from the fruit of the same tree. This operation is generally performed about July or August, and may be done either for dwarfs, half, or full standards. Mr. Forsyth remarks, that the Spring after being budded they may be trained for standards, or let grow for half-standards; but that the most common method is to bud them at such a height as the stem is designed to be; and the second year afterwards to plant

them out for good. If they are to be transplanted into a dry soil, it is recommended to be done in October, when the leaves begin to decay; but if into wet ground, in the month of February. Such as are budded on plum stocks are found to grow the best in wet soils, and those on almond and peach stocks in dry ones.

In raising trees of this kind from the stones, it is best to plant them in the early Autumn or Spring months, as October and November, or February and March, being careful to chuse those of the last Summer's growth, drilling them in, in a bed of good light ground, two or three inches in depth. The plants appear in the Spring, and in the Autumn or Spring following, may be transplanted into the nursery, and put in rows for the purpose of being trained for standards, half-standards, or dwarfs, according to the intention of the planter.

When it is intended to bud any of them with peaches or almonds, they will some of them be in a proper state for the operation; for dwarfs the first, and all of them the second Summer after transplanting; but for standards, in order to be trained with proper stems, they should constantly have three years growth.

The dwarf sorts, besides being propagated by budding upon plum or almond stocks, may be easily raised by suckers from the roots, and by layers. The common method in pruning trees of this sort is, in the Spring, to shorten the first shoot from the bud to four or five eyes, in order that the trees may put forth lateral shoots in proper quantity, so as to form regular full heads. But it is advised by Mr. Forsyth, that when the young trees are brought from the nursery, they should never be cut till the young shoots begin to break. And, that, as after wet Autumns, when the wood is not well ripened, hard Winters are apt to kill the shoots, they should in such cases be cut down to the sound wood, care being taken to prune out all such cross shoots as rub against others, leaving the tree open in the middle, cutting the shoots about the same length as for apricots, and in proportion to their strength. The canker parts and decayed wood must always be wholly cut out and removed.

Whether made use of as standards or half-standards, it is recommended that they be planted in sheltered situations, which have a southern aspect. In some cases it may be necessary to protect them by some sort of light covering, against the injury that may be expected from the frosts in February and March. Trees of this sort are also sometimes planted against walls and on espaliers.

The fruit of the almond-tree, after being properly dried, may be preserved in either bran or sand.

2d. *Amygdalus-Perfica*, or *peach-tree*. Its native country is not known. It came to the Romans from Persia, as its Latin name, *Malus Perfica*, indicates; and it has been cultivated from time immemorial in most parts of Asia; it has been adopted by almost every nation of Europe, and now flourishes abundantly in America, where it has been introduced by the Europeans. Of this tree we have only one distinct species, but there are a great many varieties, and by producing them from the seed or kernel, they may be almost indefinitely increased. But though they are capable of being greatly augmented in this manner, it is probable that but very few possess the necessary qualities, as nurserymen seldom cultivate more than twenty or thirty sorts. As in the cultivation of this sort of tree much expence is constantly required in walls or other suitable buildings, none but such as produce fine fruit should be attended to.

This sort of trees will grow to a considerable height as standards, but in order to produce and ripen fruit, requires the shelter of warm walls. They flower early in the Spring

in common, the flowers appearing before the leaves, mostly on the shoots of the preceding year, and either singly or in pairs along their sides. They are formed each of five small petals, with many stamina in the middle, and a small round germen that becomes the peach.

The fruit is distinguished into two sorts, the *peach* and *prive*, from the circumstances of the flesh or pulp quitting or adhering to the stone, as in the former it easily separates, while in the latter it adheres firmly.

There are various sorts of peaches that may be cultivated, but for small gardens Mr. Forsyth recommends the following as the most suitable; the *early avant*, *small mignonne*, the *Anne peach*, *royal George*, *royal Kensington*, *nobleffe*, *early Newington*, *Gallant*, *early purple*, *chancellor*, *nivette*, the *Catharine*, the *late Newington*.

Against north and east walls he thinks the *early avant*, *early Anne*, *early Mignonne*, *royal George*, *red Magdalen*, *royal Kensington*, *nobleffe*, *gros mignonne*, and *Millet's mignonne* are by much the best. In this method a regular succession of fine peaches, may, it is conceived, be procured until the late sorts against the south and west walls come in. But late sorts should never be planted on a north or east wall.

Methods of Culture and Propagation.—It is observed by Mr. Forsyth, that peaches require a lighter soil than either pears or plums, and that a light, mellow loam is the most proper for them. Where the natural soil is a strong brick mould, inclining to clay, it will be necessary to take some of it away in first preparing the borders for the trees, in order to be mixed with some light mould, sand, or old lime rubbish. And in making them up, where the trees are to be planted, the earth should be taken out to the depth of three feet, and the breadth of four, and the rest worked well together with rotten leaves or street dung, and the above mixture, throwing them up as soon as convenient into rough ridges, to be exposed to the action of the frost, and the influence of the atmosphere.

The borders, when it is intended to plant these trees against walls, should never be narrower than three or four feet, and when made six or seven feet, they are more proper. The most advantageous aspects for trees of this description, are those which have the most command of the south sun, but on an eastern or western aspect, they sometimes answer tolerably well.

Where the soil is wet, drains laid deep are recommended by Mr. Forsyth to be made across the borders, to draw the water from the roots of the trees. These may be filled with old bricks or stones at bottom, and above with gravel, having the depth of two feet of good mould upon the latter. And when water is retained after rains from the stiffness of the ground, the borders should be formed with suitable slopes for the same purpose.

If the soil be a four, moist clay, he advises brick-bats to be thrown into the bottoms of the borders, and to be covered with lime rubbish, or the core from the screenings of lime; which should be then watered, and, when nearly dry, well rammed to form a solid surface, and prevent the roots of the trees from penetrating the wet earth below, as well as to assist in taking off the water.

When water is permitted to stagnate near the roots of tender trees, in strong land, it is remarked, that it is certain to bring on the mildew, and thereby totally spoil them. They may, however, in some instances, be recovered by moving them to another aspect. All the French peaches, it is observed, are extremely liable to this disease on lands of the strong adhesive kind.

The propagation of peach-trees is accomplished either by

setting the seed, or by budding upon plum-stocks. The fine varieties of this fruit have been mostly obtained in the first method, though it is tedious, and often attended with but little success, from the great tendency to deviate from the nature of the variety from which the seed was taken.

The manner of proceeding in this way is to sow or set the seeds, in beds of good mould, in small drills two or three inches deep, about October or November; or where this cannot be done, to preserve them in sand till February. They will be up in the Spring following; and after one or two Summers' growth, according to circumstances, they will be fit to be transplanted into the nursery, which should be done in rows, either in the Autumn or Spring months. After having remained about twelve months in this situation, some of them may be taken out, and planted against a paling or other proper fence, in order to be trained.

But the most certain method of propagation for preserving the variety, according to the authors of the "Universal Gardener," is that of budding, as by this means peach-trees are produced that afford fruit in size, colour, and taste, exactly similar to that of the tree from which the bud was taken. Beside, in this way, the trees become much sooner in a bearing state. Though peaches may be budded on different sorts of stocks as those of their own kind, the almond, the apricot, and the plum, yet the plum is always to be preferred for the purpose, as being more hardy and suitable for continuing the trees in a prosperous and full bearing condition. It is also more adapted to grow well in different kinds of soil. The muscle plum-stock is by much the best, where it can be procured.

Stocks for this use may be raised from the different varieties of plums, as well as from peaches, almonds, and apricots, by sowing the seed or stones in the manner that has been already described. The true muscle-plum cannot, however, be produced with certainty in this way, as it is liable to great variety when raised by seed. The only mode of procuring it with certainty is by layers in the Autumn, or suckers from peach or other trees that are known to have been worked upon that sort of plum-stock. These are to be collected in October or November, or in the early Spring months, such being chosen as are about the size of the little finger; the knots of old wood adhering to the roots, and the side branches being then trimmed off, they are to be planted in rows two feet and a half distant, and the following Summer some of them will be ready to bud for dwarfs. For forming dwarfs, the most proper sized stocks for budding upon are those from half an inch to an inch in thickness; but for half or full standards the stocks should be allowed to stand till the stems are an inch thick at the bottom, and four or five feet in height. See STOCK.

The best season for budding them is August, though some gardeners perform the operation in June or July; but when budded too early the buds are liable to shoot weakly the same season, and to be so greatly injured by the Winter, as to make but little progress. See BUDDING and INOCULATION.

As it is mostly necessary that trees of this kind are trained against some sort of fence, they should be principally budded so as to form dwarfs, that their branches may come out low. Where the fences are high, they may, however, be budded for half or full-standards, and trained accordingly. In performing this business, care should constantly be taken that only one bud be inserted into each stock, the head of which should remain perfect until the Spring; when about March the whole of the heads should be cut over, in a sloping direction, just above the places where the buds were inserted. Shortly after this the buds mostly shoot out, producing each a strong

ereft shoot, which by Autumn has generally attained a confiderable height, and the tree, have obtained their firft ftate of formation. They fhould, therefore, in the early Autumn or Spring months, as October and November, or February and March, be tranfplanted either againft fuitable walls, where they may remain, or againft fome fence, merely with the view of being properly trained before they are finally planted out into their intended fituations; but in either cafe, in the Spring, they muft have the firft fhoot from budding head'd down to a few buds or eyes, in order that a proper fupply of lateral fhoots may be produced below. In two or three years they are generally in a ftate to bear fruit. See HEADING DOWN TREES.

Planting the Trees.—In chufing this fort of tree, Mr. Forfyth well obferves, that fuch plants fhould be preferred as have the ftrongeft and cleaneft ftems; and if fuch as have been headed down, and are of two or three years growth, they will bear and fill the walls much fooner than thofe that have not been managed in this way. Where they have only one ftem they are better than with two, as, in the latter cafe, one of them muft be cut off; for, if planted with both, the middle of the tree would be left naked, and a large portion of the wall remain uncovered. He is aware that it is frequently the practice to chufe the trees with the fmalleft ftems; but, he thinks, they always afford weaker fhoots than the others.

The feafons of planting are either the Autumn or the Spring. In dry, warm foils, October or November, as foon as the leaves begin to fall, may be the belt periods for this bufinefs; but in very moift or wet foils the Spring months, as February and March, are to be preferred.

In whatever feafon the work is done, if the borders be new, the ground fhould be well trenched before the trees are planted; and where they are to fupply the places of fuch as have been removed, or where the trees have died, the whole of the old roots fhould be carefully removed, and freft mould put into the place where the old tree was removed from; the new earth being raifed fufficiently above the old, as where this is not the cafe, the trees are frequently injured by being planted too deep. Where they are not kept at firft above the level of the old ground, Mr. Forfyth fays, they feldom thrive well. After the trees have been planted, the roots fhould be well watered in order to fettle the mould round them, letting it remain in that ftate for feveral days till the whole of the water has been taken up. The earth is then to be well trodden round them, and the holes filled up to the top. The freft planted trees fhould remain without being pruned until the Spring when planted in the Autumn. The authors of the “*Univerfal Gardener*,” however, advife, that trees of this fort, as well as moft others that are defigned for walls, be planted out into their permanent fituations, when they are only of one year's growth from the bud, and with their heads entire, as in this way they may be more perfectly pruned and trained the two firft years, which are the chief points in forming good wall-trees. Where walls are to be immediately covered, trained trees from the nurfery muft, however, be procured, and of fuch fizes as may be the moft fuitable to the views of the planter. The proper diftance of planting peach trees is about fifteen feet from each other. Where the walls are high, half or full ftandards may fometimes be planted between the dwarfs to fill up the upper parts, until the dwarfs grow up fo as to cover them. The general rule is, where the walls are not more than fix or eight feet high, to plant none but dwarf trees at the diftance mentioned above; but when they are nine feet in height, half ftandards of three or four feet

ftem may be put betwixt; and when the walls are ten or twelve, full-ftandards of five or fix feet ftem may be had recourfe to, in order to cover the top parts; the lower branches of the ftandard trees being annually removed, as the branches of the dwarf trees advance, and the trees themfelves at laft wholly taken away, to admit the dwarfs to fpread over the whole fpace.

In removing the trees from the nurfery great care fhould always be taken to preferve their roots as much as poffible, and that fuch parts as are bruifed be cut away. The long fmall roots may alfo be a little fhortened. The trees are then to be planted three or four inches from the wall, with the buds outwards, and the heads inclining to the fence, to which they fhould be immediately tacked, in order to prevent the winds from injuring them. When the enfuing Spring proves dry, they fhould be moderately watered once or twice a week, according to circumftances. See PLANTING OF FRUIT-TREES.

When planted with their heads entire, they fhould be headed down about March, when they juft begin to bud. This is done by fhortening the firft main fhoot within a few eyes of the bud, in a floping direction next the wall, as before directed. This muft be done to all the trees that are to be planted againft fences, whether dwarfs, half, or full-ftandards; as by ftopping their upward direction, it induces them to fend out lateral fhoots near the parts where they are budded from, which, by proper training, are formed into good trees. Where this operation is then omitted they run up, leaving the ftem naked to fome height. The next thing is to attend to the fhoots that are made from the few eyes that were left, rubbing fuch off clofe, as come out *fore-right*, either from the front or back of the branches, only retaining thofe that are fent off laterally, which, about June, when of fufficient length to be laid in, ought to be nailed well to the fence, keeping them to it, without being fhortened during the Summer.

About November, when the leaves have fallen, or in the March following, they fhould have their firft Winter pruning. This is to be performed according to the number of fhoots that have been produced from the heading down. If there fhould be two fhoots, one on each fide, both of them may be retained, being fhortened to eight, ten, or more inches, in proportion to their ftrength, to promote a further fupply of wood, nailing them horizontally to the fence. When there are three fhoots, the middle one, if not regularly placed, or of too ftiong growth, fhould be cut out clofe to its origin, the others being fhortened and nailed as above; but when of a moderate growth, and regularly placed, it fhould be fhortened and nailed in an upright direction. When there are four fhoots, they muft be fhortened as above, and trained regularly two on each fide; the principle to be chiefly attended to at this period of their growth, being that of keeping the fhoots of as equal a ftrength as poffible, and of equal number and regularity on each fide; which is belt accomplifhed by leaving only two or four good branches, to be trained with exactnefs both to the right and left, as thefe will fupply others to cover the fence in an upward direction. See WALL-TREES.

In the fecond year's pruning, during the Summer, all the fhoots that proceed from the upper or under fides of the horizontal branches of the former year, are to be retained entire and trained, the whole of the *fore-right* fhoots arifing from both the front and backs being carefully rubbed off as ufelefs, referving all fuch as are regular to be trained in at full length, as in Summer the fhoots fhould, but in few inftances, be fhortened.

The second Winter pruning may be performed about the same periods as the first, in which the branches are to be shortened as directed above, and kept in as much regularity and uniformity as possible, both in number and size, by removing such shoots as are weak. By constantly keeping the lowest branches the most extended, where there are five, six, or eight branches on a side, and these trained at the distance of four, five, or six inches from each other, very handsome trees will be formed, from which some fruit may be expected in the summer following.

The trees being by these means brought to the proper form for bearing, they are to be preserved and kept in order by proper Summer and Winter pruning. It may be observed, that both the peach and nectarine trees constantly produce their fruit on the former year's shoots, or the shoots that are formed each Summer bear fruit the next; and that the same shoots seldom bear more than once, except sometimes, on very short casual lateral spurs; nor farther do the same shoots, after the first year, furnish a regular supply of successional bearing wood; it is most generally afforded by the year old shoots. Hence the great object in pruning is to procure an annual succession of young wood, in every part of the tree. This is principally effected by the shortening of each year's branches in the Winter prunings, as by this means they are made to afford both a supply of bearing wood and a crop of fruit.

The manner of pruning and training, so as to render these trees regular and uniform in their shape and appearance at first, has been already explained.

But the general Summer prunings chiefly consist in reforming the irregularity of the numerous shoots then produced, and training, to the wall at full length, in every part, an abundant supply of all the regularly placed ones as successional wood for the next year's bearing; and the general Winter prunings are intended to reform generally the branches and shoots of all ages, sizes, and situations, so as to render the trees healthy, beautiful, and productive. The times of performing these different prunings have been mentioned above. See PRUNING OF FRUIT-TREES.

After the trees have been pruned they should be immediately nailed to the fences, and the best method is to nail them as the pruning advances, that is, as soon as a tree is pruned to secure the branches by nails, before another is begun. In performing the operation care is to be taken that the branches be laid with order and regularity in a horizontal direction, having their extremities but very little higher than their bottoms, where there is sufficient room between the trees. And in other cases the degrees of obliquity should be as little as the nature of the situations will admit. Where more wood has been left than can be laid in, it must either be cut out altogether or down to an eye, for the purpose of a shoot the next year. See NAILING OF FRUIT-TREES.

Peach trees are very liable to be affected with the blight, a disease in which the leaves are shrivelled, or curled up, and considerably thickened. This arises from insects and other causes, and is to be remedied by removing the leaves that are most diseased, and washing the trees in hot weather well with water, by means of a garden engine, afterwards letting them be well fumigated with tobacco smoke, or sprinkled over with the powder of it. See FUMIGATION, and DISEASES OF FRUIT-TREES.

As these trees come into blossom early, it frequently becomes necessary to protect them from the effects of the frosts, in order to secure the fruit. For this purpose various means have been attempted, but those that seem the most effectual are either thin light mats nailed over them, or a strong open canvass. These should be nailed up in the

evenings, and removed during the sunny part of the day. Or in severe weather they may be kept on the whole day.

From the fruit of these trees setting too thick, or in clusters, it often becomes necessary to thin them, which should always be done according to the vigour and strength of the tree, and the size of the fruit. Where the trees are strong, and the fruit small, they may be left thicker than where they are weak and the fruit large. In each case the largest, fairest, and those that are best placed should be left; and where the leaves cover the fruit too much, they should also be thinned away, by being pinched off. Trees of this kind, from the period of their being headed down, to their sixth or seventh year, may be considered in the state of training, though in their second or third they will generally begin to bear fruit. When properly managed they are also much more durable than is commonly supposed, as they will continue thirty or forty years. It is likewise of much utility in the culture of peach trees, to dig a little dung occasionally into the borders in which they are situated, and to permit none but the smaller kind of garden plants to be grown about them.

Peach and nectarine trees are often cultivated in *houses*, *frames*, and *hot walls*, in order to obtain their fruit early. For these purposes the early sorts should always be procured. See PEACH HOUSE, FORCING FRAMES, and HOT WALLS.

The *double blossomed* and *dwarf peach trees* are mostly planted out in shrubberies and pleasure grounds, as beautiful or ornamental trees; the latter sometimes in pots, as being curious.

3. *Amygdalus Nuciperfica*, or the *Nectarine Tree*. This is now generally considered as a variety of the peach, but the two trees cannot by any circumstances in their growth, wood, leaves, or flowers, be distinguished from each other with any degree of certainty. The fruits are, however, readily discriminated in all their different stages of growth, that of the nectarine having a smooth, firm cuticle, or rind, while in the peach it is covered with a soft downy substance. Besides, the pulp or flesh of the former is much more firm than that of the latter.

There are many varieties of the nectarine that may be cultivated; but those that chiefly deserve attention are the *Fairchild's*, the *violet*, the *Elrouge*, the *Newington*, the *Roman*, the *Temple*, and the *Virmasls*. The white nectarine may also be cultivated both for the goodness of its fruit, and as being a curious variety.

The culture and management of this tree is, in every circumstance, the same as that of the peach. It also requires the same sort of soil and situation. See AMYGDALUS *Perfica*.

AMYLACEOUS, formed from "Amylum, starch;" a term applied to the fine flower of farinaceous seeds, in which consists their nutritive part.

AMYLON, in *Ancient Writers*, a kind of aliment answering, as some apprehend, to our firmity.

The word is Greek, *αμυλον*, thus called, because made *fine mola*.

AMYLUM. See STARCH.

AMYNTA, in *Literary History*, a beautiful pastoral comedy, composed by Tasso; the model of all dramatic pieces, wherein shepherds are actors. The *Pastor Fido*, and *Filli di Sciro*, are only copies of this excellent piece.

AMYNTÆ, in *Ancient Geography*, a people of Thesprotis. Steph. Byz.

AMYNTAS, in *Entomology*, a species of HESPERIA in the Fabrician system, with tailed wings: above blue, margin black; beneath cinereous with black points. Two ferruginous spots at the anal angle of the posterior wings. This is

a small insect, and inhabits Austria. Fabricius.—This is the *PAPILIO TIRESIAS* of Esper.

AMYNTICA *emphyltra*, in *Pharmacy*, defensive, or strengthening plasters.

AMYNTOR, properly denotes a person who defends or vindicates a cause. The word is *αμυντορ*, formed of the verb *αμυνω*, *I defend or avenge*.

In this sense Mr. Toland entitles his defence of Milton's life, *Amyntor*, as being a vindication of that work against Mr. Blackhall, and others, who had charged him with questioning the authority of some of the books of the New Testament, and declaring his doubts that several pieces under the name of Christ and his Apostles, received now by the whole Christian church, were supposititious.

AMYNTOR, in *Entomology*, a species of *HESPERIA*. Wings indented, tailed, black: a fulvous spot at the base, and yellow stripe at the tip. The wings are entirely black above, except the fulvous spots and yellow stripes: beneath yellow, with an arched black band; posterior end of the lower wings black with white dots. A native of India. Fabricius.

AMYOT, JAMES, in *Biography*, was born at Melun in 1514, and rose from an obscure original to the high station of bishop of Auxerre, and great almoner of France. At the age of ten years he fled, for fear of chastisement, from the house of his father, who, as some say, was a currier; but according to Thuanus and others, a butcher; and being taken ill on the road, he was removed to the hospital at Orleans, where he was not only restored to health but charitably furnished with 16*l.* for defraying the expence of his journey home. This relief was requited, on his subsequent prosperity, by a legacy of 1200 crowns to the hospital. He was afterwards a diligent student in the university of Paris, where he was maintained either by the industry of his parents or the charity of a lady, whose sons he attended at college; and at the age of 19 he attained the degree of Master of Arts. In 1537 he left Paris and accompanied the abbot of St. Ambrose to Bourges; and being recommended as preceptor to the children of William Bouchetel, secretary of state, he was thus introduced to the patronage of the princess Margaret, sister of Francis I. who obtained for him the chair of public lecturer in Greek and Latin at the university of Bourges, where, for ten years, he read two lectures a day, one in Greek and the other in Latin. Here he translated the ancient Greek romance of Heliodorus, intitled, his "Ethiopic History, or the Loves of Theagenes and Charicles," which performance was much admired, and procured for him the abbey of Bellofana. At Venice, whither Amyot went in pursuit of preferment, after the death of Francis I. he was employed on a commission to the council of Trent, and having executed it with honour, he spent two years at Rome, prosecuting his studies, and ingratiating himself with those who were likely to serve him. By Cardinal de Tournon he was recommended to the king of France, and undertook the charge of educating his two sons in 1558. When the eldest of these pupils succeeded his father, under the name of Charles IX. in 1560, he immediately upon his accession to the throne, advanced Amyot to the dignity of great almoner, appointed him curator of the university of Paris, and conferred on him the honours and emoluments of the abbey of St. Corneille, and the bishopric of Auxerre. When the younger of his pupils, Henry III. came to the crown, Amyot was continued in his other offices, and in 1578 appointed master of the order of the Holy Ghost, then instituted. During the commotions and civil war which ensued, he remained in his diocese, and closed his life in 1593, in the 79th year of his age. In

proof of the avarice, with which Amyot has been accused, and which enabled him to amass 200,000 crowns, it is alleged, that, when he was soliciting from Charles IX. another benefice, in addition to the lucrative dignities which he possessed, the king said to him, "How now, master? you told me, if you had 1000 crowns a year, you would be satisfied: I believe you have that and more."—"True, sire," replied the bishop; "but appetite comes by eating." Of the learning of Amyot we have ample evidence in his translation of Heliodorus, and also of Plutarch's Lives, which is still held in high estimation in France; the best edition is that of Vacossan, printed in 1567 and 1574, in 13 volumes, 8vo.; and Racine says of it, that this old translation possesses a grace not to be equalled in modern language. As an apology for not complying with the request of those who wished him to write a history of France, he humorously urged, "that he loved his masters too well to write their lives." Amyot translated seven books of Diodorus Siculus, some Greek tragedies, and the pastoral of Daphnis, of which a beautiful edition, with plates, in 8vo. was published in 1718. His miscellaneous works were printed in 8vo. at Lyons, in 1611. Gen. Dict.

AMYRALDISM, in *Ecclesiastical History*, a name given by some writers to the doctrine of universal grace, as explained and asserted by Amyraldus, or Moses Amyraut, and his followers, among the reformed in France, towards the middle of the seventeenth century.

This doctrine principally consisted of the following particulars, *viz.* that God *desires* the happiness of all men, and none are excluded by a divine decree; that none can obtain salvation without faith in Christ; that God refuses to none the *power of believing*, though he does not grant to *all* his assistance, that they may improve this power to saving purposes; and that many perish through their own fault. Those who embraced this doctrine were called UNIVERSALISTS, though, it is evident, they rendered grace universal in words, but *partial* in reality, and are chargeable with greater inconsistencies than the SUPRALAPSARIANS.

Amyraldism is said to have been a system formed with a view of producing a reconciliation with the Lutherans.

AMYRAUT, MOSES, in *Biography*, an eminent protestant divine, was born of a good family at Bourgueil in Touraine in 1596. He was designed by his father for the profession of the civil law, which he assiduously studied in the college of Poitiers; but preferring that of a divine, he applied himself to theology at Saumur in 1626, and obtained the professorship of divinity in the university of this place. With his two colleagues in office he lived in perfect harmony; and the three professors cordially concurred in their exertions for the credit of the seminary in which they presided. In 1631 he was deputed by the protestant synod at Charenton to present to the king their complaints concerning the violation of the edicts which had been passed in their favour; and being instructed not to deliver his address on his knees, which had been the usual mode, he was allowed to decline it; and the ability and address with which he conducted this business were admired by Cardinal Richelieu. His treatise "On Grace and Predestination," written at the request of a Roman catholic of rank, who was favourably disposed towards the protestants, excited much attention. This attempt, on the part of Amyraut, for reconciling the doctrine of predestination with that of universal grace, was violently opposed by the Calvinistic divines, and particularly by Du Moulin. Although Amyraut was enjoined silence with regard to these subjects of debate by the synod of Alençon, he persevered in the contest; and such was, ultimately, his success, that the sentiments which he inculcated, and which

which nearly coincided with those of the Pelagians and Arminians, were received in all the universities of the Hugonots in France, and disseminated by the French protestants, who fled from the rage of persecution, through all the reformed churches of Europe. The talents, learning, and moderation of this able polemic, were much respected by the clergy and laity of all professions. His political opinions, which were favourable to the high pretensions of absolute monarchy, and which militated against those which were generally avowed by the Hugonots, and the advocates of religious liberty, served to recommend him to the particular notice and esteem of Cardinal Mazarine. In his Apology for the Protestants of France, published in 1647, he declares, that he will not pretend to justify the taking up arms against one's prince on any occasion whatever; and that he always believed it to be much more agreeable to the nature of the gospel and the practice of the ancient church, to have recourse to no other arms than patience, tears, and prayers. In his book "On the Sovereignty of Kings," published in 1650, on occasion of the tragical death of Charles I. he expresses, in the strongest terms, his approbation of the doctrine of passive obedience. He excepted, however, those cases of conscience, in which he regarded the authority of God as superior to that of man: and he so strenuously resisted an order of the council of state, which required all the protestants to put out hangings before their houses on Corpus Christi day, that the order was soon revoked.

The principal works of Amyraut, besides those that have been already mentioned, are, "A Treatise on Religions," published in 1631; "On the Nature and Extent of the Gospel," 1656; "The Elevation of Faith, and Abatement of Reason," 1641; "A Defence of Calvin in relation to the Doctrine of Absolute Reprobation," in Latin and French, 1644; "Paraphrases on the Scriptures;" "An Apology for the Protestants;" "A Treatise on Free-will;" "On Separation from the Church of Rome," in Latin, in 1647; "Irenicon," for promoting a reunion of the Lutherans and Calvinists," in 1648; "Of the calling of Pastors," 1649; "Christian Morality," in 6 vols. 8vo. 1652; "A Treatise on Dreams;" "A Treatise on the Millennium;" "The Life of La Noue;" and a poem intitled, "St. Stephen's Apology to his Judges;" these pieces are written in French; those excepted which are mentioned to be in Latin.

Amyraut was eminently distinguished both by his writings and character. His moderation and candour secured the respect of persons of different sects; and his liberality to the poor comprehended alike the catholics and reformed, and it was so extensive, that he distributed in charity the whole salary of his ministry during the last ten years of his life. He died, much respected and regretted, in 1664, bearing testimony, in his last moments, to the truth and importance of those religious principles, by which the course of his life had been uniformly regulated. Gen. Dict. Mosheim's Eccl. Hist. vol. v. p. 364, &c.

AMYRBERIS, in *Botany*, a name used by some authors to express the *Barberry-tree*.

AMYRIS, a genus of the *oëandria monogynia* class and order, and of the natural order of *terebintaceæ*, Jusseu. Its characters are, that the *calyx* is a perianthium, one-leaved, four-toothed, acute, erect, small, and permanent; the *corolla* consists of four, oblong, concave, and spreading petals; the *filamina* have awl-shaped, erect filaments, anthers oblong, erect, of the length of the corolla; the *pyfillum* has a germ, superior ovate, style thickish, of the length of the stamens, and stigma four-cornered; the *pericarpium* is a drupaceous and roundish berry; and the *seed* is a round, shining nut.

Martyn, in his edition of Miller, enumerates 9, and Gmelin, in his Linneus, 13 species. 1. *A. elmsifera*, cornus of Plum. icariba of Marcgr. frutex trifolius of Catesby, with leaves ternate and pinnate, with five lobes, downy underneath. The height of this tree is about six feet; the leaflets pointed, stiff, and shining; and leaves opposite on peduncles two inches long; at the ends of the branches grow four or five slender stalks, set with many very small white flowers, in a little corymb; the petals are inflex at the tip. It has a small trunk, covered with a smooth, grey bark, and grows almost in the manner of a beech-tree. The fruit is of the size and figure of an olive, and the colour of a pomegranate, having within it an odoriferous pulp. A native of Carolina and Brazil. The resin of this tree is the *Gum ELEMI*. 2. *A. sylvatica*, with leaves ternate, crenate, and acute. This is an erect, leafy shrub, from 2 to 15 feet high, according to the soil and situation, abounding with a turpentine of a strong disagreeable smell: it is found plentifully about Carthage in woods near the sea, and flowers in August. 3. *A. maritima*, small, shrubby sweet-wood, with leaves ternate, crenulate, and obtuse. This is a dwarf shrub, yielding a juice like that of the former, but more agreeable, and smelling like rue: the berry is of the size of black pepper, black when ripe, inclosing a globular, brittle nut, in which is a white kernel. Swartz doubts whether the preceding be a distinct species from this. It grows in very barren coppices, in a calcareous rocky soil, both near the sea, and on the interior mountains of Jamaica, Hispaniola and Cuba; and flowers from June to September. 4. *A. Gileadensis*, balsam of Gilead-tree, with leaves ternate, quite entire, and peduncles one-flowered, and lateral. This species is a shrub with purplish branches, having protuberant buds loaded with balsamic resin: the flowers proceed from the same buds by threes; the bracte minute and slightly bifid. It is doubted whether this be distinct from the next species. See *BALSAM of Gilead*. 5. *A. Opobalsamum*, balsam of Mecca tree, balsamum of Bellon. and Alpin, opobalsamum, or balsamum Judaicum of Geoffroy, has pinnate leaves, and sessile leaflets. See *BALSAM of Mecca*, and *OPOBALSAMUM*. 6. *A. toxifera*, poison ash, elemifera of Linn. Hort. Cliff. toxicodendron of Catesby and Miller, with leaves pinnate, and leaflets petiolate and plane. Catesby describes his poison-wood as a small tree, with a light-coloured, smooth bark, the mid-rib of the leaf, as seven or eight inches long, and the pedicles as an inch in length; the fruit as hanging in bunches, shaped like a pear, of a purple colour, covering an oblong hard stone; from the trunk distils a liquor as black as ink, which the inhabitants say is poison: birds feed on the fruit. It is a native of America. 7. *A. protium*, protium Javanicum of Burm. tingulung of Rumph. with leaves pinnate, and leaflets petiolate and waved. It is perennial, and a native of the East Indies. 8. *A. ambrosiaca*, icica heptaphylla of Aubl. Guian. with leaves pinnate and petiolate, and panicles crowded and axillary. This is a tree, with a trunk 30 feet high, branching at the top, with brancklets leafy and showery: leaves alternate, with two or three opposite, ovate leaflets on each side, ending in long points, smooth, entire, on short-petioles, gibbous at the base; flowers yellowish white, axillary, and corymbed; perianth very small and four-toothed; petals lanceolate, spreading at the tip; filaments filiform, half as long as the calyx, inserted into the tube; germ, superior, subglobose, style cylindrical; stigma capitated, depressed and four-cornered: fruit ovate, oblique, four-celled, resembling that of the laurel; the nucleus involved in a brittle covering, four-celled, with four stones wrapped up in a viscid red pulp, having a balsamic smell and taste, hardening into a grey resin, and used for burning as a perfume. The whole tree is very

sweet-scented, and yields a very odoriferous balsam from the wounded trunk or branches, which is used in the dysentery; the dose is one dram in red wine; it is also used in houses and churches for burning as a perfume. It grows in the wood of Guiana, and by the sea-shore, flowering and fruiting in September. The Caribbee name is arouaou, and the French *arbre de l'Encens*. 9. *A. balsamifera*, lucinium of Plak. Sweet amyris, white candle-wood, or rosewood, with leaves two-paired. This grows to a considerable size, and is one of the most valuable trees in the island of Jamaica; the wood is white, and of a curled grain when young, but grows of a dirty, clouded ash colour with age, bearing a fine polish, and having a pleasant smell; it is heavy, and much esteemed among cabinet-makers. All the parts of this tree are full of warm aromatic particles, and may be used in baths and fomentations; the berries are oblong, and have the taste of the balsam Copaiba. An infusion of the leaves has a pleasant flavour, is highly cephalic, strengthens the nerves, and is particularly restorative to weak eyes. In Jamaica there are several species of *amyris*, the leaves and bark of which yield a fine balsamic juice; and if the body were tapped at the proper season, a thick liquor would transude, resembling that of the Gilead balsam, to which the taste of the bark and wood of the smaller branches bears a very exact relation. Dr. Wright apprehends that this wood, by distillation, would yield a perfume equal to the oleum rhodii. 10. *A. kataf*, with leaves ternate, ferrate at the tip, and dichotomous peduncles. Fork. Fl. Æg. Arab. 11. *A. balsamea*, with leaves ternate, and pinnate, with five lobes, and flowers fasciated and pentapetalous. Gleditch. Schr. Berl. Naturf. 12. *A. Zeylanica*, with leaves pinnate, petiolated and smooth, racemes interrupted and axillary, and flowers involucred and hexandrous. Koenig apud Retz Obf. Bot. 13. *A. Guianensis*, with leaves pinnate, the pinnae two-paired, and ovate-oblong, and racemose berries. Sloan. Hist. Jam. Gmelin's Linnæus, and Martyn's Miller.

AMYRIS. See XIMENIA.

AMYRUS, in *Ancient Geography*, a town of Greece in Thessaly; its precise situation is not known. There was also a river of the same name.

AMYSTIS, a river of India, so called by Arrian.

AMYTHAONIA, a district of Elis, so called from Amythaon. Steph. Byz.

AMYTON, a town of Caria, according to Ptolemy.

AMYTRON, a town of Thrace, according to Hesychius.

AMYZON, a town of Asia Minor, in Caria, according to Strabo.

AMZEL, in *Ornithology*, the name of a bird found in the northern parts of Great Britain; but which is better known by the name of ring-ouzel. This is the *Turdus torquatus* of Linnæus. See *TORQUATUS*.

ANA, in *Commerce*, the name of an Indian coin, in value somewhat more than one penny sterling.

ANA, ANAH, or ANNA, in *Geography*, a town of Asia, in Arabia Deserta, situate on the Euphrates, in a pleasant and fertile country, which produces plenty of corn, olives, dates, oranges, lemons, pomegranates, figs, &c. It is under the government of an emir, tributary to the grand signior. It is the general resort of the robbers, who plunder the caravans that pass to and from Bagdad, Aleppo, Damascus, &c. 260 miles east of Damascus, and 300 south-east of Aleppo. N. lat. 33° 35'. E. long. 42° 4'.

ANA, ãã, in *Medicine*, denotes an equal quantity of any things, whether in liquid, or in dry measure.

Hence *anatica proportio* is used by some writers to signify the *ratio*, or *proportion of equality*.

ANA, in *Matters of Literature*, a Latin termination, adopted into the titles of several books in other languages. *Anas*, or *books in ana*, are collections of the memorable sayings of persons of learning and wit; much the same with what we otherwise call *TABLE-talk*.

Wolffius has given the history of books in ana in the preface to the *Casauhoniana*. He there observes, that though such titles be new, the thing itself is very old; that Xenophon's books of the deeds and sayings of Socrates, as well as the dialogues of Plato, are *Socraticana*; that the apophthegms of the philosophers collected by Diogenes Laertius; the sentences of Pythagoras, and those of Epictetus; the works of Athenæus, Stobæus, and divers others, are so many *anas*. Even the *Gemara* of the Jews, with several other oriental writings, according to Wolffius, properly belong to the same class. To this head of ana may likewise be referred the *Orphica*, the *Pythagoreæ*, *Æsopica*, *Pyrrhoneæ*, &c.

Scaligerana was the first piece that appeared with a title in ana. It was composed by Jan de Vassan, a young Champenois, recommended to Jos. Scaliger, by Casaubon. Being much with Scaliger, who was daily visited by the men of learning at Leyden, De Vassan wrote down whatever things of any moment he heard Scaliger say. And thus arose the *Scaligerana*, which was not printed till many years after, at Geneva, in 1666. Patin. Let. 431. Soon after came the *Perroniana*, *Thuana*, *Naudæana*, *Patineana*, *Sorberiana*, *Menagiana*, *Anti-Menagiana*, *Furetiana*, *Chevæana*, *Leibnitziana*, *Arlequiniana*, *Poggiana*, &c.

Ana is used among some occult philosophers to denote the human mind. Hence, according to some, is derived the word *anasapta*, a dæmon invoked to the assistance of a sick person.

ANAB, in *Scripture Geography*, a town of Palestine, situate in the mountainous parts of the tribe of Judah. Josh. xi. 21. xv. 50.

ANABAGATAS, in *Ancient Geography*, a city of Asia, and the see of an archbishop under the patriarch of Antioch.

ANABAO, in *Geography*, one of the Molucca isles south west of Timor, from which it is separated by a canal capable of receiving vessels of any burden. At the extremity of this canal are two points; the southern, called *Gupang*, belongs to Timor; and that on the northern side to Anabao.

ANABAPTISM, see ANABAPTISTS, *infra*.

ANABAPTISTON. See ABAPTISTON.

ANABAPTISTS, in *Ecclesiastical History*, a name given to Christians who maintained that baptism ought always to be performed by immersion; that it ought not to be administered to children before the age of discretion, or that at this age it ought to be re-administered to those who have been baptized in their infancy, because they say the administration of this sacrament is neither valid nor useful, if it be done by sprinkling only, and not by immersion; or if the persons who receive it be not in a condition to give the reasons of their belief.

The word *Anabaptist* is compounded of *ana*, *new*, and *βαπτιστης*, a *baptist*, and this general denomination has been indiscriminately applied to people of very different principles and practices; though many of them object to the name, because the baptism of infants by sprinkling, is, in their opinion, no baptism; and they hold nothing in common excepting some one or other of the above mentioned opinions concerning BAPTISM.

The NOVATIANS, the CATAPHRYGIANS, and the DONATISTS, may be considered as a kind of Anabaptists in the earlier ages, though not then denoted by this name; for they contended that those Christians of the catholic church, who joined themselves to their respective parties, should be rebaptized.

rebaptized. But we must not class under the same denomination those bishops of Asia and Africa, who, in the third century, maintained, that baptism, administered by those whom they called heretics, was not valid; and therefore that such of them as returned into their churches ought to be rebaptized. Nor does it appear that there is sufficient authority to affirm, that the *Vaudois* and the *Albigenses* were predecessors of the modern *Anabaptists*; though some of them adopted the practice of adult baptism.

It was not till a little after the time when the Lutherans separated from communion with the Romish church, that the Anabaptists began to make a noise in Germany. Storek, Stubner, and Munzer, were the first disciples of Luther, who, about the year 1521, were styled Anabaptists. But well knowing that their opinions were very different from Luther's doctrine, they availed themselves of his absence to disseminate them in Wittemburgh, and had the address to over-reach the piety of Melancthon. Their principal purpose was to gain over the populace, and to form a considerable party. To effect this, says Bayle, they were industrious and active, each in his own way. Storek, wanting knowledge, boasted of inspiration; and Stubner, who had both genius and erudition, laboured at commodious explications of Scripture. Not contented with discrediting the court of Rome, and decrying the authority of consistories, they taught, that men being entitled under the Gospel to equal liberty, could not be justly subjected to any civil power, nor erect superiorities over each other; that, as all magistracy was an usurpation on Christian freedom, no true Christian could be either magistrate or subject, nor consequently pay any impost, give any oath, or bear arms; that violence and arms ought never to be made use of, excepting against princes, and people in power, from whom they were permitted to revolt, as from so many usurpers, who were to be pulled down, in order to erect the kingdom of God. They pretended that Christians, being all free, equal, and independent, there ought to be no tribunal among them, nor laws, nor any distinction of property, but that every thing should be in common, nor any restraints with regard to the number of wives whom they might marry. In other respects they affected singular austerity, recommending macerations, fastings, and the utmost simplicity of apparel. Their sermons were, for the most part, declamations against the communion of the reformed; and they were incessantly exhorting every body to join with them, who, as they said, were sent of God, to re-establish the kingdom of his Son. They made high promises to all who would unite with them to exterminate the impious, if this massacre proved the epocha for the commencement of Christ's reign upon earth, when the just, meaning themselves, were to reign also, instead of the unrighteous usurpers of authority. They moreover affected to speak with a kind of contempt concerning external worship, the sacraments, the ministry, and even the word of God, with a view to enhance the merit of the extasies, visions, and inspiration, to which they pretended, and on which they valued themselves. They dealt much in predictions, especially concerning the nearness of the last judgment; and, finally, to give a greater eclat to their party, they rebaptized all those who joined them; and to make their practice succeed, they taught that baptism administered to infants was void.

Munzer took the lead of this party; and, in 1525, assembled a numerous army of associates; but this insurrection was soon suppressed, and Munzer put to an ignominious death. Many of his followers, however, survived, and propagated their opinions through Germany, Switzerland, and Holland. In the year 1533 they formed a new community

at Munster, under the direction of two Anabaptist prophets, John Matthias, a baker of Haerlem, and John Blockholdt, a journeyman tailor of Leyden. Having made themselves masters of the city, they deposed the magistrates, confiscated the estates of such as had escaped, and deposited the wealth they amassed together in a public treasury for common use. They made preparations of every kind for the defence of the city, and sent out emissaries to the Anabaptists in the Low Countries, inviting them to assemble at Munster, which was now dignified with the name of Mount Sion, that from hence they might be deputed to reduce all the nations of the earth under their dominion. Matthias, who was the first in command, was soon cut off in an act of phrensy by the bishop of Munster's army; and was succeeded by Blockholdt, who was proclaimed, by a special designation of heaven, as he pretended, king of Sion, and invested with legislative powers, like those of Moses. The extravagancies of Blockholdt were too numerous to be recited: it will be sufficient to add, that the city of Munster was taken after a long siege and an obstinate resistance; and Blockholdt, the mock monarch, was punished with a most painful and ignominious death. The *Baptists* in England and Holland, or, as they are there called, the *Mennonites*, are very different from those who first gave rise and name to the sect.

It must be acknowledged, that the first insurgents in Germany had been grievously oppressed; and that they took up arms principally in defence of their civil liberties; nor should subsequent extravagancies of violence be attributed to their religious principles, much less charged on their successors.

The sequel of their history, and distinguishing tenets, may be seen under the article ANTI-PÆDO-BAPTISTS, BAPTISTS, MENNONITES, WATERLANDIANS, &c.

ANABASII, in *Antiquity*, the couriers who travelled on horseback, or in chariots, for the greater expedition.

The word comes from the Greek *αναβασις*, mounting.

ANABASIS, in *Botany*, a genus of the *pentandria digynia* class and order, of the natural order of *holoraceæ* and *atriplices* of Jussieu: its characters are, that the *calyx* is a three-leaved perianthium, the leaflets roundish, concave, obtuse, and spreading; the *corolla* five-petalled, petals ovate, equal, less than the calyx, and permanent; the *stamina* have filaments filiform, longer than the corolla, and anthers roundish; the *pistillum* has a germ roundish, acuminate, ending in two styles, and obtuse stigmas; the *pericarpium* is a berry, roundish, surrounded by the calyx and dilated; the *seed* is single and serew-shaped. There are four species. 1. *A. aphylla*, leafless *A. fassola* baccifera of Gmel. Siber. kali bacciferum of Buxb. without leaves, and the joints emarginate. This is a perennial plant, and has been found wild on the shores of the Caspian. The berry, in a state of maturity, is large; it is red, the pulp is watery, and it dyes a yellow colour. Gmelin makes the anabasis retacea of Pallas and Gærtner a variety of this species. 2. *A. foliosa*, leafy *A. fassol. foliis incrassatis*, &c. of Gmel. and Pallas, kali bacc. fol. clavatis of Buxbaum, with leaves subclavate. It is seldom more than half a foot high; annual; found wild on the shores of the Caspian. 3. *A. tamariscifolia*, tamarisk-leaved *A.* with awl-shaped leaves and juiceless pericarpia. This is a shrub with white branches, very smooth; a native of Spain. 4. *A. spinosissima*, thorny *A.* shrubby, branches without leaves, but full of spines: the native place of growth is unknown.

ANABASIS, in *Medicine*, the state of a disease in its growth.

ANABASIUS, a name given by Pliny to a plant, which he calls also *ephedra*, and describes as hanging down
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from the branches of large trees, in form of tufts of hair. The plant described by Pliny, and others of the ancients, under this name is the *USNEA*, or long hairy tree moss.

ANABATA, in *Ancient Customs*, a cope, or sacerdotal veil, to cover the back and shoulders of the priest.

It is otherwise called *anabolium*, formed of *αναβαλλομαι*, to *cover*.

The word *anabala* seems to be used in the same sense.

ANABATHRA, from *αναβαινω*, *I ascend*, in *Ancient Writers*, denote a kind of steps or ladder, whereby to ascend some eminence. In this sense we read of the *anabathra* of theatres, pulpits, &c. *Anabathra* appears to have been sometimes also applied to ranges of seats rising gradually over each other.

ANABATHRA is more particularly applied to a kind of stone-blocks raised by the highway sides, to assist travellers in mounting or alighting, before the use of stirrups was invented. The first author of this contrivance, among the Romans, was C. Gracchus, brother of Tiberius.

ANABIBAZON, in *Astronomy*, the *DRAGON'S tail*.

ANABIS, in *Ancient Geography*, a town of Spain, in the territory of the *Lacetani*, according to Ptolemy. Eusebius mentions a village of Egypt under this name, in which a man was the object of worship.

ANABLATA, a town of Palestine, near Bethel.

ANABLATUM, in *Botany*, a name used by some authors for the *squammaria*, or tooth-wort, called *dentaria* by others.

ANABLEPS, in *Ichthyology*, a species of *COBITIS*, having a depressed head, prominent eyes, and two beards; one at each angle of the mouth. Linn. This fish inhabits the sea shore of Surinam, and is described by Seba and Gronovius. It has six rays in the gill membrane, seven in the dorsal fin, twenty in the pectoral fin, seven in the ventral fin, and nine in the anal fin.

In the system of Fishes of Artedi, ANABLEPS is a genus of the malacopterigious kind.

ANABOA, in *Geography*, a small island situate near the coast of Loango in Africa, in S. lat. 1° and E. long. 8° 30'. This island has several fertile vallies, in which are produced bananas, oranges, lemons, pine-apples, citrons, cocoa-nuts, &c. and abundance of cotton. It has two high mountains, almost always covered with clouds, which occasion frequent rains.

ANABOLEUM, in *Antiquity*, denotes any kind of upper garment worn over the coat or tunic.

This is otherwise called *anabole*, from *ανα* and *βολω*.

ANABOLEUS, among the *Ancients*, a servant whose office was to assist in mounting on horseback. These were in use before the invention of stirrups, or of those stones called *anabathra*.

ANABOLEUS is also used by Eustathius, to denote a small piece of iron, whereon the foot was set, in order to mount; from which Budeus infers, that the ancients had stirrups or foot-boards; to which Lipsius objects, that it does not appear this *anaboleus* was any pendant part fixed to the saddle, after the manner of our stirrups, but rather a portable engine brought by a servant, and placed by the horse's side.

ANABROCHISMUS, from *ανα*, *upwards*, and *βροχος*, a *loop*, in the *Ancient Physic*, the operation of taking away offensive hairs in the eye lids.

The manner of performing the *anabrochismus* is described by Gorræus.

ANABROSIS, *αναβροσις*, q. d. *erosio*, in *Medicine*, otherwise called *diabrosis*, the issuing of blood at a hole worn in a vein by corrosion.

ANABUCIS, in *Ancient Geography*, a place of Africa,

situate, according to Antonine, in the route from Carthage to Alexandria. As it lay to the east of *Macomades*, it must have been in the Cyrenaic territory.

ANABUM, a town of Germany, situate, according to Ptolemy, in an island of the Danube.

ANABURA, a town of Phrygia in Asia Minor, probably the same which some authors have placed in Pisidia.

ANACA, in *Ornithology*, the name of a species of *PSITTACUS*, or parrot, that inhabits Brazil and Guiana, and is called at the latter place the common parrot, being the most frequent species of that genus. It is green, beneath ferruginous-brown, crown of the head chestnut, spot on the back, and tail pale brown, margins of the wings red. Linnæus, Gmel.

This is ANACA BRASILIENSIS of Ray and Willoughby; ANACA of Buffon, and chestnut-crowned parakeet of Latham. It is likewise *la petite perruche brune du Bresil*, of Brisson. It is the size of a lark. Bill and orbits brown; crown of the head chestnut, throat cinereous: hind part of the neck, back, rump, sides, thighs, scapulars, upper wing and tail coverts, green: breast, belly, and under tail coverts, rufous brown: legs and claws blackish.

In the British Museum there is a specimen, which varies in having the spot on the back of a deep chestnut; no red on the edge of the wings: tail green, the upper tail coverts brown, and the under tail coverts of a brown still paler. Vide Dr. Latham Gen. Svn.

ANACALYPTERIA, in *Antiquity*, feasts celebrated among the Heathens on the day that the bride was permitted to lay aside her veil, and to be seen in public.

They were thus called from *ανακαλυπτειν*, to *uncover*.

According to Suidas, it also means the presents which were made to the bride by her husband's relations and friends on that day.

ANACAMPSEROS, in *Botany*. See CLAYTONIA, PORTULACA, and SEDUM.

ANACAMPTERIA, in *Ecclesiastical Antiquity*, denote little hospitals, or inns, for the entertainment of the poor and strangers, built adjoining to the ancient churches.

ANACAMPTIC, from *ανα* and *καμπη*, *flexio*, *I bend*, signifies as much as *reflecting*; and is frequently used in reference to echoes, which are said to be sounds produced *anacampically*, or by reflection.

Hence, also *anacampitics* is used by some for the science of reflecting rays; otherwise called *CATOPTICS*.

ANACANDAIA, in *Zoology*, the name of a species of serpent found in the island of Ceylon, and very mischievous among the cattle, whence it is called *BUBALINUS*.

ANACARDII, in *Entomology*, a species of *PAPILIO* of the tribe *Paraffius*. The wings are transparent, or glassy and greenish. Posterior pair brown at the tips, with two eye shaped spots. Inhabits South America. Linn. and Fabric.

ANACARDIUM, formed of *ανα*, *without*, and, *καρδια*, *heart*, because the pulp of the fruit, instead of having the seed inclosed, as is usually the case, has the nut growing out at the end of it, in *Botany*, *acajou* of Tournefort, *acajuba* of Gærtner, a genus of the *polygamia monoecia* class and order, (*enneandria monogynia* of Gmelin and Willdenow,) of the natural order of *boloraceæ*, and *terebinaceæ* of Jussieu; its characters are, that it has hermaphrodite flowers and male flowers, either mixed with the hermaphrodites, or on a distinct tree. The *calyx* of the former is a perianthium five leaved, leaflets ovate, concave, coloured, erect, and deciduous; the *corolla* has five petals, lanceolate, acute, three times as long as the calyx, upright at bottom, reflex at the end; the *stamina* have ten filaments, united at the base and upright, nine of them capillary, shorter than the calyx,

calyx, one thicker, double the length of the others, lying on the germ in front, anthers roundish, in the longer filament large and fertile, in the rest small; the *pyllium* has a germ kidney-shaped, obliquely emarginate in front, style subulate, bent in, the length of the corolla; stigma small, roundish, depressed, and concave; no *pericarpium*; receptacle fleshy, very large and obovate; the *seed* a nut kidney-shaped, large, at the top of the receptacle, with a thick shell, cellular within, and abounding in oil. The *calyx*, *corolla*, and *stamina* of the male flowers as in the hermaphrodites; the *pyllium* has either no germ, or one that is abortive. There is one species, viz. *A. occidentale*, acajuba occidentalis of Gærtner, acajou of Piso, acajuba of Marcgrave, cassivium of Rumphius, cashou of Merian, kapa-mava of Rheed, anacardium fructu obversè ovato nucce reniformi, racemis terminalibus of Browne, Jamaic. Cashew-nut, castu or acajou. The cashew is an elegant tree, 12 or 16 feet high, spreading much as it rises, and beginning to branch at the height of five feet, according to Browne; but Long affirms, that in good soils it spreads to the size of a walnut tree, which it resembles in the shape and smell of the leaves: the trunk seldom exceeds half a foot in diameter; the leaves are coriaceous, subovate, shining, entire, petioled, and scattered alternately; the panicles corymbd, diffused, and terminating, containing many small, sweet-smelling flowers, on an oblong receptacle, scarcely distinguishable from the peduncle; the corolla red, with commonly 10 stamens, one of which has no anther, but it has frequently eight or only seven all fertile; and there are sometimes female flowers entirely destitute of stamens. The fruit has an agreeable subacid flavour, in some degree restraining; in some of a yellow, and in others of a red colour, which difference may be probably owing to the soil or culture. The juice of the fruit, fermented, affords a pleasant wine, and distilled, yields a spirit exceeding arrack or rum, and serves to make punch, and also to promote urine. The ripe fruit is sometimes roasted, and sliced, and thus used for giving an agreeable flavour to punch. The restraining of the juice has recommended it as a remedy in dropical habits. From one end of the apple proceeds the nut, which is kidney-shaped, inclosed in two shells, the outer of an ash-colour, and smooth, and the inner covers the kernel. Between these shells is lodged a thick, inflammable, and very caustic oil, which, incautiously applied to the lips and mouth, inflames and excoriates them. This oil has been successfully used for eating off ring-worms, cancerous ulcers, and corns; but it should be very cautiously applied. Some of the females have used this oil as a cosmetic, in order to remove the freckles and tan occasioned by the scorching rays of the sun, but it proves so corrosive as to peel off the skin, and cause the face to inflame and swell; but after enduring the pain of this operation for about a fortnight, their new skin, as it may be called, appears fair like that of a new-born infant. This oil also tinges linen of a rusty iron colour, that can hardly be got out; and when smeared on wood, it prevents decay, and might therefore serve for preserving house timber and ships' bottoms. The fresh kernel has a delicious taste, and abounds with a sweet milky juice; it is an ingredient in puddings, &c. and is eaten raw, roasted, and pickled. The negroes of Brazil, who are compelled by their masters, the Portuguese, to eat this nut, for want of other sustenance, obtain relief from this involuntary use of it in various disorders of the stomach. When the kernel is ground with cacao, it improves the chocolate; but if it be kept too long it becomes shrivelled, and loses its flavour and best qualities. The milky juice of the tree, obtained by tapping or incision, will stain linen of a deep black, which cannot be washed out; but whether this

has the same property with that of the eastern anacardium, has not yet been fully ascertained; for the inspissated juice of that tree is the best sort of lac which is used for staining black in China or Japan. Phil. Trans. vol. xlix. part ii. p. 872. Lewis Comm. Phil. Techn. p. 329, &c. This tree annually transudes from five to ten or twelve pounds weight of a fine semi-transparent gum, resembling gum-arabic, and not inferior to it in virtue or quality, except that it has a slight astringency, which may probably, in some respects, render it more valuable. It is a native of both Indies, *e. g.* Malabar, Ceylon, Brazil, Guiana, Jamaica, and the Caribbee islands; and was cultivated in Kew Garden in 1699, by the dukes of Beaufort.

Culture.—The cashew tree is easily raised in its native country from the nut; and it is of quick growth, bearing fruit in two years after it has been planted. But in England the plants are preserved with difficulty. They are easily raised from the nut supplied from America; and they should be planted in small pots filled with light sandy earth, and plunged into a hot-bed of tanner's bark, which should be preserved from moisture. Fresh nuts will yield plants in about a month, and in two months these will be four or five inches high, with large leaves, but they seldom advance much farther in the same year. The plants must be constantly kept in the stove, as they are too tender to live abroad in England, even in the warmest seasons. They should have little water in Summer, and in Winter, water once in a fortnight will be sufficient. When they are transplanted, the pots should be broken, that the earth which cleaves to their roots may not be disturbed; and they should then be put into larger pots, filled with light sandy earth, and plunged into the hot-bed. They must not be removed oftener than once a year, and the pots should not be too large, for unless their roots are confined they will not thrive. With this management they may be kept several years, but they seldom exceed two feet and a half in height, and are seldom half as high. Martyn's Miller. Murray's Mat. Med. vol. iv. p. 413.

ANACARDIUM Orientale. See *AVICENNIA*.

ANACARDIUM Officinorum. See *SEMECARPUS*.

ANACATHARSIS, in *Medicine*, properly denotes a purgation by spitting; in which sense it stands contradistinguished from *catharsis*, or evacuation downward.

In this sense is the word used by Hippocrates and Galen; agreeably to this Blasius restrains *anacatharsis* to expectoration. Only Blancard, on what authority does not appear, extends *anacathartic* medicines to all those which work upwards, by the glands of the head, whether vomitories, sternutatories, or masticatories.

ANACATHARSIS is also a name given by *civil lawyers* to the *Basilicon repetita Prelectionis*, made by order of the emperor Constantine Porphyrogenitus.

It was thus called, as being a review or correction of the *Basilicon*.

ANACATHARSIS, among *Divines*, denotes the clearing up some obscure passage, by a spiritual or analogical interpretation.

ANACATHARTIC, from *ανω*, upwards, and *καθαρσις*, I purge, is usually understood of a vomit, or a purging medicine that works upwards.

ANACEIA, an Athenian festival in honour of the Dioscuri. It took its name from those deities, who were also called *Ανακτες*, and honoured with a temple called *Ανακειον*, *Anaceum*. The Anaces, Anaetes, or Dioscuri have been thought by some writers to be the same with the Cabiri of the ancient Carthaginians, but others are of a different opinion. However this may be, they were undoubtedly descended from the Anakims of Moses; and Inachus was also

of this race, as his name imports. Some have supposed, that the appellation Anactes was given to those princes of the line of Itachus, who had distinguished themselves by their heroic actions.

The sacrifices offered at that time were named *ἑπισημαίαι*, because those deities were *ξένοι*, or *strangers*; and consisted of three offerings, which were called *ἑπισημαίαι*. Athenæus mentions plays acted in honour of these deities.

ANACEPHALÆOSIS, formed of *ἀνα*, which in composition signifies *again*, and *κεφαλήν*, *head*, in *Rhetoric*, a recapitulation, or a short and summary repetition of the heads of a discourse.

ANACHARSIS, in *Biography*, a Scythian philosopher, was the son of a Scythian chief by a native of Greece, and flourished about 600 years before Christ. Having acquired an early acquaintance with the Greek language, he was entrusted by his sovereign with an embassy to Athens; and in the first year of the 47th Olympiad, i. e. 592 B. C. he was conducted by Toxaris, one of his countrymen, to the house of Solon. Anacharsis availed himself of the opportunities which free and familiar intercourse with Solon afforded him for gaining wisdom: he was introduced to the society of the principal persons at Athens, and he was the first stranger upon whom the Athenians conferred the honour of citizenship. After the death of Solon, and probably not before, Anacharsis left Athens, and travelled into other countries; and at last returned to Scythia, with a design of communicating to his countrymen the knowledge he had acquired, and of establishing among them the deities and the worship of Greece. But his attempts were ineffectual. Whilst he was performing sacred rites to Cybele, in fulfilment of a vow which he had made upon his way home, he was killed by an arrow levelled against him, as report says, by the king's own hand; so that he fell a sacrifice to the envy and folly of his countrymen, who would not condescend to be instructed by Grecian wisdom. The phrase, "Scythian eloquence," was derived from the manly and nervous kind of language for which he was distinguished. He is said to have been the inventor of the anchor and potter's wheel, but these instruments were known before his time; however, he might have introduced the use of them among the Scythians. Of his ingenious sayings that are recorded, the following deserve to be mentioned: "The best method of teaching a youth sobriety is to set before his eyes a drunken man." "The vine bears three sorts of fruit: the first, pleasure; the second, intoxication; the third remorse." "An ape is by nature ridiculous; man, by art and study." To an Athenian of infamous character, who reproached him for being a Scythian, he said, "My country may be a disgrace to me; but you are a disgrace to your country." As he was one day considering the thickness of the planks of a ship, he cried out, "Alas! those who go to sea are but four inches distant from death." Being asked what was the most secure snip, he replied, "That which is arrived in the port." He often repeated, "That every man should be particularly careful to make himself master of his tongue and his belly." Being asked what was the best and what the worst part of a man, he answered, "The tongue." "It is much better," said he, "to have but one friend, if he be faithful to us, than a great number of those who are always ready to follow the change of fortune." He used to compare laws to spider-webs; and to ridicule Solon, who pretended to restrain the passions of mankind by pieces of writing. He observed, "That the prince who is wise is happy; and that that city is best wherein all things else being equal, virtue hath the better condition, vice the worse." The epistles that bear his name are probably spurious. Herodotus, lib. iv. Plut. Vit. Solon, apud Opera, tom. i. p. 80. Diog. Laertius,

lib. i. tom. i. p. 64. Strabo, lib. vii. tom. i. p. 461. Brucker's Hill. of Philos. by Enfield, vol. i. p. 104. The Travels of Anacharsis the Younger in Greece, by the Abbé Barthelemi, comprised in seven volumes, 8vo. with a volume of maps, &c. in 4to. is a work in high estimation.

ANACHIMOUSSE, in *Geography*, a province of the island of Madagascar, having on the east the river Jonghainon, which runs through it, the country of Manan Loule on the south, on the west large and lofty mountains, and on the north the river Mangharac and the country of Eringdrata. This province produces great quantities of rice and yams, with plenty of cattle, and other necessaries of life, and is extremely populous.

ANACHIS, in *Mythology*, one of the four deities, to whom the Egyptians imagined the peculiar care of each person was committed at his birth: the other three were *Dymon*, *Tyche*, and *Heros*. They were also called *Dynamis*, *Tyche*, *Eros*, and *Ananche*; i. e. Power, Fortune, Charity, and Necessity.

ANACHORESIS, denotes a withdrawing from society, or retiring into solitude. The anachoresis was not allowed to persons before they had spent thirty years in the community.

ANACHORET, from *ἀναχωρέω*, *I retire into a solitary place*, a hermit or devout person, living alone in some desert, to be farther out of the reach of the temptations of the world, and more at leisure for meditation. Such were St. Anthony, St. Hilarion, &c. Paul the Hermit was the first of the tribe of anachorets.

When many of the habitations of anachorets were placed together in the same wilderness, at some distance from one another, they were all called by one common name *laura*, which, as Evragnius informs us, differed from a *canobium*, or *convent*, in that a *laura* consisted of many cells divided from each other, where every monk provided for himself; but a *canobium* was one habitation, where the monks lived in society, and had all things in common. Anachorets, popularly anachorets, were very numerous among the Greeks, consisting principally of monks; who not caring for the fatigues and offices of the monastery, purchased a little spot of ground, with a cell, whither they retreated, and never appeared in the monastery again excepting on solemn days. These are sometimes also called *ascetes* and *solitaries*.

They had their chapel, and after prayers applied themselves to the culture of their vineyards, olives, fig-trees, and the like, which afforded them provision for the year.

These anachorets only differed from the conventual monks, in that they had less intercourse with the world, and lived but in small bodies.

The anachorets of Syria and Palestine retired into the most obscure and unfrequented places; hiding themselves under rocks and mountains, without either tents or cottages, reposing wherever the approach of night happened to find them, and living on the spontaneous productions of the earth. This course of life they pursued, that they might avoid the view and the society of mortals.

There have also been anachorets in the West. Peter Daimon, who was of the order of hermits, frequently speaks of them with great praise. He represents them as by far the most perfect sort of monks; holding them in much higher opinion and veneration than the *canobites*, or monks residing in monasteries.

Many of these retire, with the leave of their abbots, and have an allowance from the monastery. The people, on account of their piety, present them with good sums of money, which they carefully hoard up, and at their death bequeath to the monastery they had belonged to.

ANACHORETA, in *Entomology*, a species of *PHALÆNA*, of the *bombyx* tribe, which, till lately, was confounded

with phalæna curtula, from which it chiefly differs in having a white streak across the brown spot at the tip of the anterior wings. Its specific character is, wings grey, with white streaks; at the tip a ferruginous-brown spot, marked with a waved streak of white. Fabricius. Feeds on the willow and poplar in the larva state. The larva is hairy, brown with a flesh-coloured stripe along the back; two elevated warts, and lateral dots of rufous colour. Inhabits Austria.

ANACHORITA, in *Ecclesiastical Writers*, a name sometimes given to the cells of recluses.

By the ancient canons, no anachorita could be erected without consent of the bishop.

ANACHRONISM, compounded of *ανα*, higher, and *χρονος*, time, in *Chronology*, an error in computation of time; whereby an event is placed earlier than it really happened.

Such is that of Virgil, who placed Dido in Africa at the time of *Æneas*; though, in reality, she did not come there till 300 years after the taking of Troy. An error on the other side, whereby a fact is placed later or lower than it should be, is called a *parachronism*; though this distinction is not commonly observed.

ANACHYTIS, in *Natural History*, a species of *ECHINUS*, of the second order of *VERMES*, *Mollusca*; it is heart-shaped, rather oblong, and somewhat conic, base flatish. Spaces and divisions ten; mouth subrotund, surrounded with an elevated margin; vent oval, notched below. Klein and Linn. Found in a fossil state.

ANACIUM, in *Ancient Geography*, a mountain of Attica, on which was a temple of Castor and Pollux.

ANACLASTIC glasses, *vitra anaclastica*, a kind of sonorous phials or glasses, chiefly made in Germany, which have the property of being flexible, and emitting a vehement noise by the human breath. They are also called vexing glasses, by the Germans *vexier glaser*, on account of the fright and disturbance they occasion by their respiration.

The anaclastic glasses are a low kind of phials with flat bellies resembling inverted funnels; whose bottoms are very thin, scarce surpassing the thickness of an onion-peel: the bottom is not quite flat, but a little convex. But upon applying the mouth to the orifice, and gently inspiring, or as it were sucking out the air, the bottom gives way with a horrible crack; and from being convex becomes concave. On the contrary, upon expiring or breathing gently into the orifice of the same glass, the bottom with no less noise bounds back on its former place and becomes gibbous as before.

The anaclastic glasses first taken notice of were in the castle of Goldbach; where one of the academists *Natura Curiosorum*, having seen and made experiments on them, published a piece expressly on their history and phenomena. Rosini Lentilii Oribasii Sched. de Vitris Anaclasticis. Vid. Ephem. Acad. N. C. Dec. 2. Ann. 3. p. 489, seq. Their figure may be seen in the book above cited.

They are all made of a fine white glass. It is to be observed in these, 1. That if the bottom be concave at the time of inspiration, it will burst, and the like will happen if it be convex at the time of expiration. 2. A strong breath will have the same effect even under the contrary circumstances.

ANACLATICS, or ANACLASTICS, derived from *ανα*, and *κλω*, *I break*; that part of *OPTICS* which considers refracted light, and is the same with what we more usually call *DIOPTRICS*.

ANACLETERIA, formed of *ανα*, and *κλεω*, *I call*, in *Antiquity*, solemn feasts celebrated in honour of kings and

princes when they came of age, and took upon them the administration of the state, and made a solemn declaration thereof to the people.

ANACLETICUM, in the *Ancient Art of War*, a particular blast of the trumpet, whereby the fearful and flying soldiers were rallied, and recalled to the combat.

ANACLETUS, or CLETUS, or ANENCLETUS, *i. e. irreprehensibile*, in *Biography*, a pope, reckoned by Roman Catholics the third; succeeded Linus as bishop of the church of the Romans; and, according to Eusebius, (*Hist. Eccl. lib. iii. c. 13. 15.*) in the second year of the reign of Titus, or in 79, A. D. and governed that church 12 years. This bishop has been enrolled among the saints and martyrs, though there is no satisfactory evidence of his martyrdom. Dupin. *Bower's lives of the Popes*, vol. i. p. 13.

ANACLETUS was also the name of a competitor for the popedom against Innocent II. He was the grandson of a circumcised Jew, named Peter of Leon. When Innocent II. was acknowledged as successor to the papal chair by the emperor Lotharius II. upon the death of Honorius II. in 1130, Roger, King of Sicily, did homage to Anacletus, who was for some time master of Rome. After the defeat of Roger, upon whom he had conferred the title of king of Naples and Sicily, he was obliged to yield to his more fortunate competitor. He died in 1138, and his memory has been reproached with scandalous vices. Dupin.

ANACLINOPALE, from *ανα*, *κλινω*, *I incline*, and *σπλον*, *arms*, in *Antiquity*, a kind of wrestling, wherein the champions threw themselves voluntarily on the ground, and continued the combat by pinching, biting, scratching, and other methods of offence.

The anaclinopale stood contradicting with the *ortobopale*, wherein the champions were erect. In the anaclinopale, the weaker combatant sometimes gained the victory.

ANACLITES, the denomination of those Britons, who are placed by most of our antiquaries in that district of Berkshire which is adjacent to Henley.

ANACLINTERIA, in *Antiquity*, a kind of pillows on the dining-bed, whereon the guests used to lean.

The ancient triclinary beds had four *επιπλατα*, one at the head, another at the feet, a third at the back, and a fourth at the breast. That on which the head lay was properly called by the Greeks, *ανακλινητρον*, or *ανακλινητρον*; by the Romans *fulcrum*, sometimes *phuteus*.

According to other writers, anaclinteria is more properly understood of the backs of chairs whereon we lean.

ANACOINOSIS, from *ανα* and *κοινω*, *I communicate*, *communicatio*, a figure in *Rhetoric*, when we consult the adversary, or appeal to the judges what ought, or could have been done on such an occasion.

Such is that of Cicero, *Quero, si te hodie domum tuam redeuntem, coacti homines et armati, non modo limine tesloque adiumtuarum, sed primo aditu vestibuloque prohibuerint, quid acturus sis?* Cicero pro Cecin.

ANACOLLEMA, formed of *ανακολλω*, *conglutino*, in *Physic*, denotes a liniment or other medicine applied to the forehead, to stop or prevent defluxions of the eyes.

Anacollemata make a species of medicines called *frontalia*.

The qualities required are, to be drying, cooling, thickening, astringent, conglutinant, &c.

To the class of anacollema belong bran, manna, myrrh, terra sania, acacia, &c.

Junker describes an *anacollema frontale* for stopping hæmorrhages at the nose.

ANACOLUTHON, from *ανακολουθος*, *incoherent*, among *Ancient Grammarians*, denotes an incoherence, or a construction which does not accord. This is usually signified by

the appellation of a figure which ought rather to be denominated an inaccuracy.

ANACONDA, in *Zoology*, a name given in the isle of Ceylon (and adopted by some naturalists) to a very large and terrible snake, which, it is said, often devours the unfortunate traveller alive, and is itself accounted excellent and delicious fare. This creature is described as a species of rattlesnake, but it is far more probable that it is not of that genus. It is generally believed that rattlesnakes are altogether peculiar to the American continent; nor is there any known species of rattle-snake that corresponds with the description of this tremendous creature; the largest kinds scarcely exceeding four, five, or at most six feet in length.

Perhaps the snake in question may be *boa constrictor* of Linnæus, which it is known sometimes grows to the length of twenty or thirty feet, and is of such prodigious strength, that it is able to destroy almost any other animal. It is a species found in the Indian islands, and is eaten by the inhabitants.

ANACOPHA. See *ΑΝΚΗΑΣ*.

ANACREON, in *Biography*, a Greek lyric poet, was born at Teos, a sea-port of Ionia, and flourished during the reign of Polycrates, tyrant of Samos, at whose court he resided, in the sixth century before Christ. His fame was such, that Hipparchus, the son of Pisistratus, as we are informed by Plato, (in Hipparchus) sent a vessel of 50 oars to bring him to Athens. After the death of Hipparchus he returned to Teos, and afterwards removed to Abdera, the place of his youthful residence, where he died at the age of 85 years. Report says, that his death was occasioned by a grape-stone, which choked him whilst he was drinking new wine. He was a professed voluptuary, and habituated to the unrestrained gratifications of wine and love. He is censured even by Ovid for devoting his chief attention to Bacchus and Venus—

“ Quid, nisi cum multo Venerem confundere vino
Præcipit lyrici Teia musa Senis ?”

His attachment to Cleobulus is recorded by Maximus Tyrius, (Orat. ii.) and the ardour of his passion for Bathyllus is mentioned by Horace. *Epod. xiv. v. 9.*

“ Non aliter Samio dicunt arsisse Bathyllo
Anacreonta Teium,
Qui persæpe cava testudine flevit amorem.”

Ælian (in his *Var. Hist. lib. ix. c. 4.*) has endeavoured to vindicate his character; but the charges against him are too well founded to admit of refutation. During his residence at Samos, Polycrates made him a present of 5 talents, equal to about 5625l. sterling. Unaccustomed to the possession of such a sum, he could not enjoy his usual repose, and he therefore hastened to restore it to the generous donor, alleging, that while he had so great a charge in his custody, he should never be able to write or sing again. The poems of Anacreon, that are extant, consist chiefly of Bacchanalian songs, and love-sonnets. They are mostly composed in verses of seven syllables, or rather of three and a half feet; spondees and iambs, and sometimes anapests; and hence verses in that measure are sometimes called *Anacreontics*, or *Anacreontic verses*. The odes of Anacreon abound in suavity, sprightliness, and elegant fancy; they are sweeter, says Scaliger, than Indian sugar; and, according to Mad. Dacier, the chief beauty and excellence of Anacreon consisted in his imitations of nature, and in his following reason; so that he presented to the mind no images that were not noble or natural. The odes of Anacreon, says Rapin, are flowers,

and perpetual graces; it is familiar to him to write what is natural and to the life; and he possessed an air so delicate, easy, and graceful, that, among all the ancients, there is nothing comparable to his method, nor to the kind of writing which he pursued. He flows, adds this writer, soft and easy, diffusing the joy and indolence of his mind through his verse, and tuning his harp to the smooth and pleasant temper of his soul. The character of his writings is justly given by the God of Love, directed to speak by Mr. Cowley:

“ All thy verse is softer far
Than the downy feathers are,
Of my wings, or of my arrows,
Of my mother's doves and sparrows;
Graceful, cleanly, smooth, and round,
All with Venus' girdle bound.”

The authenticity of some of those poems, which have been distinguished by his name, has been suspected, but they have been acknowledged by ancient writers; nor is it probable that imitations, composed at different times by different authors, should invariably retain the same style and dialect. Of these odes we have had translations and imitations in various languages. Of the original the best editions are those of Barnes and Pauw; and the free versions of Cowley are the most approved English imitations. The odes of Anacreon have been lately, in 1801, translated into English verse, with notes, by Thomas Moore, Esq. 4to. Gen. Dict.

ANACRISIS, from *ἀνα* and *κρίσις*, *I judge*, among the *Ancient Greeks*, is used for a kind of trial or examination, which the archons, or chief magistrates of Athens, were to undergo before their admission into that office. The anacrisis stands distinguished from the *docimasia*, which was a second examination in the forum. The anacrisis was performed in the senate-house. The questions here proposed to them were concerning their family, kindred, behaviour, estate, &c. Some maintain that all magistrates underwent the anacrisis.

ANACRISIS, in the *Civil Law*, denotes a search or inquiry into the truth by examination of witnesses.

ANACROSIS, in *Antiquity*, denotes a part of the Pythian song, wherein the combat of Apollo and Python is described.

The anacrosis was the first part, and contained the preparation to the sight.

ANACTON *padon*, a festival held at Amphyssa, the capital of Locris, in honour either of the Dioscuri, or of the Curetes, or Cabiri, about which authors are not agreed.

ANACTORIA, now *Vonizza*, in *Ancient Geography*, a town of Acarnania, at the extremity of the peninsula, at the entrance of the gulf of Ambracia. Stephanus Byz. says, that it was founded by a colony of Corinthians. Augustus transported its inhabitants to Nicopolis.

ANACUIAS, in *Geography*, a people of America, in Brazil, on the borders of the country possessed by the Portuguese, under the appellation of *Capitania de Seragippe*.

ANACYCLUS, *santolinoides* of Vaillant, and *cotula* of Tournefort, in *Botany*, a genus of the *syngenesia polygamia superflua* class and order, of the natural order of *compositæ discoideæ*, and *corymbifera* of Jussieu; its characters are, that the *calyx* is common, hemispherical, and imbricate, with many ovate, flat sharp scales; the *corolla* is compound and radiate, with numerous hermaphrodite corollas in the disk, from five to ten females in the ray, scarcely higher than the disk; hermaphrodites funnel-shaped, with a quinquefid, spreading

Spreading border; females with a flatted tube, and an ovate entire border; the *stamina* in the hermaphrodites; filaments five, capillary, and very short; anther cylindrical; *pisillum* a germ flatted, stigma bifid, in the hermaphrodites, with a membrane on each side, style, filiform, of the length of the corollet, and two slender reflex stigmas in the stocules; no *pericarpium*, calyx unchanged; *seed* in the hermaphrodites solitary, oblong, compressed, naked, or without down; in the females with a very broad, membranaceous wing on each side, and emarginate at top, but without down; the *receptacle* chaffy, chaffs obtuse with a point. There are four species. 1. *A. creticus*, cotula cretica, &c. of Tournefort, *fontaniloides annua*, &c. of Vaillant, trailing anacyclus, "with leaves decomposed, linear, and folioles divided and flat." 2. *A. orientalis*, chamæmelum orientale, &c. of Tournefort, eastern a. "with leaves compound, bristly, acute, and straight." These two species grow naturally in the islands of the Archipelago, from whence their seeds were sent by Tournefort to the Royal Garden at Paris: their seeds have been also received from Portugal. They are low plants, with branches trailing on the ground. The first sort has fine-cut leaves, like those of chamomile; the flowers are small, white, and grow single, with their head declining, like those of the common May weed. The second has leaves like those of the ox-eye; the flowers are white, and like those of chamomile. 3. *A. aureus*, chamæmelum luteum capite aphylo of Bauhin, anthesis chrysanthemum of Lob. golden-flowered a. "with leaves bipinnate, roundish, hoary, and hollow-dotted." This species is a native of the south of Europe and the Levant, and was cultivated here in 1570. 4. *A. valentinus*, chrysanthemum valentinum of Clafius, buphtthalmum lanuginosum, foliis millefolii of Bauhin, chamæmelum tenuifolium, flore bulbato aureo of Barr. "with leaves decomposed and linear, folioles divided, roundish, and acute; the flowers stoculose." This grows a foot and a half high, sending out many side-branches; the leaves are finely divided and hairy; the flowers are single at the end of the branches, and are of a bright yellow colour, with a silvery, fealy calyx; they are as large as those of the ox-eye. It is a native of Spain and Italy; cultivated in 1636 by Tradescant; flowering in June and July.

Culture.—All these plants are annual; the seeds should be sown early in the Spring, in a border of light earth, where they are designed to remain, and need no other care than to be thinned and kept free from weeds; they flower in July and August, and their seeds ripen in September. Martyn's Miller.

ANADARA, in *Conchology*, a name by which some naturalists have distinguished the species of ARCA, called *antiqua* by Linnæus. Adanf. Seneg.

ANADAVADÆA, in *Ornithology*, the name of a small bird of the East Indies, which has the beak of a chaffinch, and the feet of the lark. It is sometimes brought over to England alive in cages, and will live here very comfortably.

ANADEMA, formed of *αναδισμας*, to be bound round, among the *Ancients*, denotes an ornament of the head, wherewith victors at the sacred games had their temples bound.

Some confound the *anadema* with the *diadema*, worn by the ancient Persian kings.

Anademata are also mentioned by ancient writers among the ornaments of the heads of women.

According to some, *αναδεμα*, answers to what the Latins call *redimiculum*.

ANADIPILOSIS, *αναδιπλωσις*, from *ανα*, again, and *δι-*

πλω, I double, in *Rhetoric* and *Poetry*, denotes a repetition of the last word of the former verse or member in the beginning of the next; *e. gr.*

"Addit se sociam timidisque supervenit Ægle.

Ægle Naiadum pulcherrima—

—sequitur pulcherrimus Astur,

Astur equo fidens—"

"If children, then heirs, heirs of God, and joint heirs with Christ."

ANADIPILOSIS, in *Medicine*, denotes the redoubling or return of the paroxysm of a fever, chiefly of a semitertian.

This is otherwise called *epanalepsis* and *epanadiplosis*.

ANADOSIS, from *ἄνα* and *δίδωμι*, I give, in the *Ancient Medicine*, denotes the distribution of the aliment by the vessels of the body.

In this sense, anadosis makes a part of nutrition or DIGESTION.

ANADROMOUS, in *Ichthyography*, a term of distinction applied by some early naturalists to those migratory fishes that have their stated times of going from the fresh-water to the salt, and afterwards returning back to the fresh water again.

The word is derived from *ανα*, back again, and *δρομος*, a course. Many of the *salmo* genus are of this kind, and particularly *salar*, or the common salmon, whose periodical returns from the sea to deposit its spawn in fresh-waters is well known. The method nature has appointed for their course of changes seems to be this: they are first produced from the spawn in fresh-water rivers; they live there till they acquire some strength and size, and then seek the salt-water to feed more at large in, and grow to their full extent; at which period they return to the fresh-water again to lay their spawn, that the young brood may have the same advantages which they had before, of being placed in fresh-water. Some use the word *catanadromi* in the same sense.

ANADUOMENE *Venus*, in the *Grecian Mythology*, answered to the *Sea-Venus* in the Roman, and was the appellation given to one of the chief deities of the sea. The most celebrated picture in all antiquity was that of this goddess by Apelles; and the famous Venus of Medici is a *Sea Venus*.

ANADYR, in *Geography*, a river of Siberia, that rises in the country of the Tchuktchi, out of a lake (N. lat. 68° 20'. E. long. 179° 14') among the frontier mountains which are a continuation of Stanovoi-Krebet, and discharges itself into that part of the Eastern or Pacific Ocean, which is called the *Sea of Anadyr*, Anadyrskai gulf, or bay of Anadyr. N. lat. 65°. E. long. 177° 34'. This river receives many streams, besides the brook Yablona, which gives the name of Yablonoï-Krebet to the range of mountains where it springs, but none of them are very large. Its bed is in general sandy, and its current by no means rapid; its channel is very broad, and contains a considerable number of islets, but of so little depth, that it can scarcely be crossed in any part with the common ferry-boats of that country, called *shitiki*, which are sewed together, have no iron in their construction, and draw no more than two feet of water. From the source of the Anadyr to the brook Yablona, the country is mountainous and bare; below the Yablona are some stripes of meadow-land and some poplar-trees; and on the mountains to the left, for at least 100 versts above Anadyrskoi-ostrog, are thin woods of larch trees and dwarfish Siberian cedars. The whole of the northern region, as far as the Anadyr, is in general destitute of standard trees, and has scarcely any pieces fit for pasture;

whereas, south of the river, at no great distance, especially about the head of the main, the Peninsula, and the Aklan, are forests of tall timber in abundance. From the Anadyr to the Kolyma and the Frozen Ocean, and throughout the whole country of the Tchuktehi, no more forest has been discovered; the meadow shrubs scarcely shoot above a span high, as in the whole tract along the northern coast of Siberia. But so much the more frequent are the flats, overgrown with yellow and white moss, on which innumerable herds of wild rein deer find pasture. Tooke's View of the Russian Empire, vol. i. p. 229.

ANADYSKAJA GULF, a bay of the Pacific Ocean, on the coast of Siberia, extending from Cape Apofrola Thadra, E. long. $178^{\circ} 14'$. N. lat. 63° , to the bay of Saint Lawrence, E. long. $187^{\circ} 14'$. N. lat. 65° .

ANADYRSKOI, a fortified town of Siberia, on the river Anadyr. E. long. $165^{\circ} 14'$. N. lat. 66° .

ANADYSIS, among *Ancient Divines*, denotes the ceremony of the emersion in BAPTISM.

In which sense *ανανυσις*; stands contradistinguished from *ανανυσις*, or immersion.

ANÆA, in *Ancient Geography*, a town placed by Stephan. Byz. in Caria, opposite to the isle of Samos, which took its name from one of the Amazons who was buried there; and which was the birth-place of Menelas, a peripatetic philosopher and celebrated historian.

ANADÆIA, in *Antiquity*, a denomination given to a silver stool placed in the aræopagus, on which the defendant or person accused was seated for examination.

The word is *ανανδεια*, which imports *impudence*; but according to Junius's correction, it should rather be *ανανια* q. d. *innocence*.

The plaintiff or accuser was placed on an opposite stool, called *hybris*, or *injury*; here he proposed three questions to the party accused; to which positive answers were to be given. The first, are you guilty of this fact? The second, how did you commit the fact? The third, who were your accomplices?

ANAERETA, in *Astrology*, a place in the heavens, at which the *apheta* arriving, an infant born at that time, is pronounced by astrologers in danger of death.

The word is Greek, and literally imports a *cutler off*.

In this sense, *anaereta* stands opposed to *apheta*.

ANAERETA, among the Greek *Astrologers*, amounts to the same with what the Arabs call *ahazin*.

ANAESTHESIA, *αναισθησια*, in *Medicine*, a privation of sense, or of the faculty of perceiving external objects. The species or degrees of this are *stupor*, *habetudo*, *depravatio*, &c. The sense of feeling may be injured by any thing that obstructs the nervous influence, or prevents its being regularly conveyed to the organs of touch, as pressure, extreme cold, &c. It may likewise be impaired by too great a degree of sensibility, when the nerve is not sufficiently covered by the cuticle or scarf-skin, or where there is too great a tension of it, or it is too delicate. Whatever disorders the functions of the brain and nerves hurts the sense of touching; and hence it seems to proceed from the same general causes, as palsy and apoplexy, and requires a similar treatment. In a *stupor*, or defect of touching, which arises from an obstruction of the cutaneous nerves, the patient must be first purged, and then recourse should be had to such medicines as excite the action of the nerves, or stimulate the system. For this purpose the spirit of hartshorn, either by itself or combined with essential oils, horse-radish, &c. may be taken inwardly; and the disordered parts may, at the same

time, be frequently rubbed with fresh nettles, or spirit of sal-ammoniac. Blisters and sinapisms applied to the benumbed parts will likewise be of use; and also warm bathing, especially in the natural hot-baths.

ANÆTHETUS, in *Ornithology*, a name which has been sometimes given to a species of tern found in Jamaica, and described by Brown. This is *STERNA SOLIDA* of Linnæus, which see.

ANAFÀ, or DAR BEYDA, in *Geography*, a town of Africa, on the western coast of Morocco, situate in one of the most beautiful parts of the kingdom, formerly possessed by the Portuguese, and populous, but now a heap of ruins; 30 miles south-south-west of Sallee.

ANAGADA, an island in the West Indies, so low as to be almost covered with high tides. N. lat. $18^{\circ} 38'$. W. long. $64^{\circ} 18'$.

ANAGALLIDASTRUM, in *Botany*. See CENTUNCULUS.

ANAGALLIS, derived from *αναγελαιω*, to laugh, because, as it is said, by curing the spleen it disposes persons to be cheerful, a genus of the *pentandria monogynia* class and order, of the natural order of *rotaceæ*, and *lysimachia* of Jussieu. Its characters are, that the *calyx* is a perianthium five-parted, sharp, and permanent, and divisions keeled; the *corolla* is wheel-shaped, border five-parted, divisions ovate-orbiculate, with the claws connected; the *filamina* have erect filaments, shorter than the corolla, shaggy below, anthers simple; the *pisillum* is a globose germ, style filiform, slightly bending, and stigma capitate; the *pericarpium* is a globose, one-celled capsule, opening transversely; the *seeds* are very many and angular; the *receptacle* globose, very large, (fungose, alveolate, and free, G.) Martyn enumerates 7, Willdenow 6, and Gmelin 8 species. 1. *A. arvensis*, A. flore phœniceo of Ray, and A. mas of Ger. common or scarlet pimpernel, with leaves undivided, stem procumbent, and corolla finely notched; or with stem procumbent, leaves ovate-lanceolate, and segments of the calyx serrated; or, according to Dr. Smith, with leaves ovate, punctated underneath, and stem procumbent. Dr. Smith reckons three varieties, viz. *β. A. phœnicea*, foliis amplioribus ex adverso quaternis of Ray; *γ. A. fœmina* of Ray and Ger. A. cerulea of Abbot, blue pimpernel; and *δ. A. terrestris* flore albo of Ray. The root is small; the stem procumbent, very branching at the base, tetragonous, smooth, and foliose; the leaves opposite, (those of *β* in a rich soil being four) sessile, ovate, entire, smooth, and underneath dotted with purple; the peduncles axillary, solitary, one-flowered, longer than the leaves; the lacinia of the calyx lanceolate, acuminate, membranaceous at the margin; the corolla deeply quinquefid, minutely ciliated, mostly scarlet, with a violet mouth; the stamina hairy and violet; the anthers yellow; the stigma obtuse and crenated; the capsule globose and diaphanous, (marked with five lines as if the seams of so many valves, but always separating transversely into two parts, Withering); the seeds angular, and heaped together; the flowers in the variety *γ* are blue, but Dr. Smith has perceived scarcely any other difference. Dr. Withering observes, that every part of this plant is singularly beautiful; and will amply repay the trouble of a minute examination. It is an annual plant, frequent in ploughed grounds and gardens, particularly in sandy soils, and flowers in June and July. The variety *γ*, female or blue pimpernel, grows wild in Sweden, Germany, and Switzerland, and is found between Stockwell and Camberwell, near London, near Mitcham in Surrey, and Histon in Cambridgeshire, on Bredon-hill, in a corn-field at the top of Oyerbury-wood in Worcestershire, at Dawlish in Devonshire.

shire, and between Bath and Bradford. Ray, Linnæus, and others, take the blue pimpernel to be only a variety of the red. Haller, after Blair and Boehmer, and followed by Allioni and Gmelin, considers it as a distinct species; observing, that it is a taller plant, with smaller leaves and larger flowers; that the capsule is more ovate, but the divisions of the calyx are narrower, and the petals ferrate about the edge. Haller mentions a blue sort, with three and four leaves together. The variety δ has been found in Cowley field. The blossoms of the male or common pimpernel open about eight in the morning, and close in the afternoon; and from this circumstance it is denominated the *shepherd's*, or *poor man's weather-glass*. But with rain, or much moisture in the air, the flowers either do not open, or close up again. Small birds are very fond of the seeds; swine and goats feed on it, but sheep are said (in the *Amæn. Acad.*) to refuse it, whereas Schreber says, that sheep eat it readily. It was formerly celebrated for its medicinal qualities, and given in maniacal cases, and in the hydrophobia. It is now fallen into disuse, though Lewis observes, that it is not wholly destitute of medicinal powers; as the expressed juice of the leaves, on being depurated by settling, and then inspissated to the consistence of an extract, affects the organs of taste with a pungent saline astringency; and therefore these herbs have some claim to the resolvent and detergent virtues ascribed to them by some writers, though neither a decoction, nor tincture of them, nor their juice in its dilute state, and much less their distilled water, can exert those virtues in any considerable degree. Murray has cited several cases, adduced by Gelin, which favour the efficacy of the anagallis as an antidote to the bite of mad animals. It has also been recommended as affording relief in cancerous complaints. 2. *A. monelli*, upright pimpernel, with leaves undivided, and erect stem. This is a very beautiful, small plant, and produces a great number of fine blue flowers in April and May. It is a native of Verona, and cultivated in 1648 in the Oxford garden. 3. *A. latifolia*, broad-leaved P. with leaves heart-shaped, stem-clasping, and stem compressed. This is nearly allied to the first species, but distinguished by its large broad leaves and compressed stem. It was sent to Mr. Miller in 1759 from Spain, and is a trailing annual plant. 4. *A. linifolia*, flax-leaved P. with leaves linear, and stem erect. A native of Spain and Portugal. 5. *A. tenella*, lysimachia tenella of Sp. Pl. Hudson, Miller, and Dickson; nummularia minor, flore purpurascente of Ray, Gerard, and Parkinson, bog P. or purple-flowered loose-strife, or money-wort, with leaves ovate and sharpish, and creeping stem. This has the habits of lysimachia, the corolla almost of centunculus, but the stamina and fruit of the anagallis. It is not uncommon on wet heaths and turfey bogs in France, Italy, and England, in Suffolk and Staffordshire, is perennial, and flowers in July and August. 6. *A. verticillata*, verticilled P. with stem-leaves verticilled, and stem erect. 7. *A. pumila*, dwarf P. with stem erect, and leaves roundish, acute and sessile. It is annual and a native of Jamaica in the high mountains and marshes.

Culture.—The four first sorts being annual, are propagated from seeds which should be soon sown after they are ripe. The first, though beautiful, is a common weed, and never cultivated except in botanic gardens. The second, third, and fourth require being sheltered from extreme cold. The fifth is a bog-plant, and cannot be cultivated in gardens, but will flourish well enough in pots of bog-earth plunged in water. The sixth, if it be a distinct species, has not yet been cultivated with us. Martyn's Miller. Smith's Flor. Brit. Willdenow. Gmelin's Linn.

ANAGALLIS. See CENTUNCULUS, EVOLVULUS, LYSIMACHIA, and PÆDEROTA.

ANAGALLIS *Aquatica*. See GRATIOLA, MONTIA, PEPPLIS, SAMOLUS, and VERONICA.

ANAGALLIS *Carulca*. See GRATIOLA.

ANAGLYPHA, in *Ancient Writers*, denote vessels, or other things adorned with sculpture in *basso relievo*; and hence the *anaglyphic* art is the art of carving, chasing, engraving, or imbossing plate.

ANAGLYPHICE, or ANAGLYPTICE, denotes that species of sculpture wherein the strokes or figures are prominent, or imbossed; and is contradistinguished from *diaglyphice*, where the strokes are indented.

The word comes from the Greek *ανηγλυφω*, *exculpo*.

ANAGNIA, in *Ancient Geography*, a town of Italy, in Latium, south east of Terracina, the capital of the Hernici; distinguished among the ancients by the appellation of rich, noble, and illustrious. It submitted, after a feeble resistance, to the Romans, and obtained the freedom of the city. It was afterward by Drusus Cæsar walled round, and its territory assigned to the veterans. It is now *Anagni*, about thirty-six miles east from Rome. N. lat. 42° 48'. E. long. 13° 45'.

ANAGNOSES, or ANAGNOSMATA, from *ανα* and *γνωσκω*, *I know*, in the *Greek Church*, denotes an ecclesiastical book, containing the lessons read at divine service in the several feasts, &c. of the year.

ANAGNOSTA, or ANAGNOSTES, among the *Ancients*, denotes a kind of servant retained in the families of persons of rank to read to them at meals.

These are called by the Greeks *αναγνωσται*, and by the Romans *lectores*; sometimes also a *studius*.

Even private families who lived in any degree politely, were not without this kind of literary servants. Servius makes mention of a female agnosta, under the denomination of *lectrix*. Sometimes the master himself performed the office of reader. The emperor Severus himself read at table. Martial mentions one Ligurinus, who read his own poems at dinner to the great disgust of the guests.

Among the Greeks there were also anagnostæ in their theatres for public reading of the poets.

Some speak of the anagnostæ as a species of acroamata, from which, however, in propriety, they differed.

Cornelius Nepos relates of Atticus, that no acroama was ever heard at his meals, but an agnostes. He never supped without reading, so that the minds of his guests were no less agreeably entertained than their appetites. The same custom, Eginhard observes, was kept up by Charlemagne, who at table had the histories and acts of ancient kings read to him. This custom seems to have been a relique of that of the ancient Greeks, who had the praises of great men and heroes sung to them, while at table. The ancient monks and clergy kept up the like usage, as we are informed by St. Augustin. Sidonius praises a man of quality in his time, who, in this respect, lived a clerical life, though he was no priest.

Bilbergius, and Th. Raynaud, have dissertations express on anagnostæ.

ANAGNOTSA, JOHN, in *Biography*, a Byzantine historian, flourished in the reign of the emperor John Palæologus, and was present in Thessalonica in the year 1430, when that city was besieged by Sultan Morad, and reduced under the Turkish yoke. As he relates events that occurred two or three years after that siege, he must have lived at least to the year 1433. His work "De rebus Constantinopolitanorum Macedonicis," records the particulars of the siege of Thessalonica and its surrender to the Turks. This history was published in Greek, with a Latin translation, by Allatius in Svo. at Cologne. A. D. 1653.

ANAGNOSTIC, in *Middle Age Writers*, is sometimes used for an epistle, or other writing.

ANAGOGIA, in *Antiquity*, solemn sacrifices to Venus at Eryx, in Sicily, where she was honoured with a magnificent temple.

The name of this solemnity was derived, *απο της αναγωγης*, i. e. *from returning*; because the goddess was said to leave Sicily, and return to Africa at that time.

ANAGOGICAL, *transporting*, something that raises the mind to things eternal and divine; the great objects of the next life.

The word is derived from *αναγωγη*, *carrying away*, which is formed of the preposition *ανα*, *upwards*, and *αγωγη*, *leading*.

The term is principally used in speaking of the divers senses of Scripture.—The *literal* sense is the first, and natural sense; the *mystical* sense is founded on the natural sense, from whence it is taken by analogy or comparison, by similitude or resemblance of one thing to another; and is divided into several kinds.

Where it regards the church, and matters of religion, it is called the *allegorical* sense. Where it regards our morals, it is called the *tropological* sense; and where it regards eternity, or the life to come, it is called the *anagogical* sense.

ANAGOGY, ANAGOGE, a rapture or elevation of the soul, to things celestial and eternal.

Anagogy, in a more particular sense, denotes the application of types and allegories of the Old Testament to subjects of the New; thus called, because the veil being here drawn, what before was hidden is exposed to open sight. Some of the fathers place *αναγωγη* in opposition to *ιστορικη*, *history*.

ANAGOGY, in *Medicine*, denotes a return of humours, or the rejection of matter upwards, or by the mouth.

Anagogy amounts to the same with what is otherwise called *anabol*.

ANAGOGY, *αναγωγικη*, in *Ancient History*, denotes a loose education or discipline.

ANAGOMBRI, in *Ancient Geography*, mountains of Africa, placed by Ptolemy in Marmarica. M. d'Anville places them west of the temple of Ammon.

ANAGRAM, ANAGRAMMA, formed from *ανα*, *backwards*, and *γραμμα*, *letter*, a transposal of the letters of a name, with a combination thereof in some new manner, so as to exhibit one or more words, either to the advantage or disadvantage of the person to whom it belongs.

Thus the anagram of Galenus is *angelus*; that of Logica, *caligo*; that of Alstedius, *sedulitas*; that of Sir Edmundbury Godfrey, *I find murdered by rogues*; or, *by Rome's rude finger die*; that of Loraine, is *alerion*, on which account it was, that the family of Loraine took *alerions* for their armoury.—Calvin, in the title of his Institutions, printed at Strasburgh in 1539, calls himself *Alcuinus*, which is the anagram of Calvinus, and the name of an eminently learned person in the time of Charlemagne, who contributed greatly to the restoration of learning in that age. Barclay, in his *Argenis*, anagrammatizes Calvinus by a less creditable name *Ufivalca*; and Rabelais, to be revenged of the same Calvin, who had made an anagram of his name, found in that of Calvin, *Jan. Cul*.

Such as keep close to the definition of anagram take the liberty to omit or retain the letter H, and that letter only; but such as stand up for the poetical licence, make hold sometimes to use E for Æ, V for W, S for Z, and C for K; and *vice versa*.

This way of writing was scarcely known among the ancients: Daurat, a French poet in the reign of Charles IX.

is usually said to be the first that broached it; yet Lycophron, who wrote under Ptolemy Philadelphus, about 280 years before Christ, appears to have been no stranger to the art of making anagrams. Canterus, in his *Prolegomena* to Lycophron, gives us two of his pieces in this kind; the first on the name of king Ptolemy, *Πτολιμαχος*, in which he found *απο μαλιτος*, *of honey*; to insinuate the sweetness and mildness of that prince; the second was on queen Arsinoe, *Αρσινω*, of whom he made *το ιτεας*, *Juno's violet*.

There are two ways of making anagrams: for, 1. Some only consist in dividing a single word into several: thus the *enigma* of the God Terminus, mentioned by Anulus Gellius, lib. xii. cap. 6. is founded on the anagram *TER MINUS*; and thus *syllineumus* yields *sus tinea mus*. This kind alone seems to have been used among the Romans.

The second is, where the order and situation of the letters are changed; such are those above mentioned; and also these, *Roma, Maro, Amor*; *Julius, Livius*; *Corpus, Porcus, Procus, Spurco*.

To find all the anagrams any name will admit of, *algebraically*, see *COMBINATION*.

The finest and happiest of all the anagrams extant, is that on the question put by Pilate to Jesus Christ; *Quid est veritas?* which anagrammatically makes *Est vir qui adijt*: the anagram here is the best and justest answer that could possibly be given.

Besides the ancient kind of anagrams, there have been new ones invented: as, the mathematical anagram, invented in 1680, by which the abbot Catelan found, that the letters of the name Lewis XIV. made *vrai heros*, i. e. *true hero*.

We are now likewise furnished with the numerical anagram, more properly called *chronogram*; where the numerical letters (i. e. such as in the Roman cyphering stood for numbers) taken together, according to their numerical values, express some epocha: of which kind is that distich of Godart on the birth of Lewis XIV. in the year 1638, on a day wherein there was a conjunction of the eagle with the lion's heart:

*eXorIensDeLpblnaqVILæCorDIsqVeLeonIs
CongressVgaLLospeLatItIaqVereseCit.*

ANAGRAMMATIST, a maker or composer of anagrams; Thomas Billon, a Provençal, was a celebrated anagrammatist, and retained by Lewis XIII. with a pension of 1200 livres, in quality of anagrammatist to the king.

Lipenius gives a long list of anagrammatists.

Thomas Billon has given a set of prophecies in anagrams; Gul. Blancus, the art of composing anagrams.

ANAGROS, or ANEGROS, a measure for corn used in some cities in Spain, containing somewhat more than the Paris *mine*.

Four *anegros* make a *cabi*, four *cabis* a *tanega*, and 46 *anegros* are equal to about 10½ quarters of London.

ANAGYRIS, in *Botany*, a genus of the *decandria monogynia* class and order, and of the natural order of *papilionacea*, or *leguminosa*: its characters are, that the *calyx* is a bell-shaped perianthium, mouth five-toothed, the upper pair of teeth more deeply divided; the *corolla* papilionaceous, standard obcordate, straight, emarginate, broader than the other petals, twice as long as the calyx, wings ovate-oblong, flat, longer than the standard, keel straight and very long; the stamina have filaments parallel, distinct, rising, anthers simple; the *pistillum* is an oblong germ, the style simple and rising, the stigma villose; the *pericarpium* an oblong, large, roundish, obtuse legume, a little reflex; the *seeds* six or more, kidney-form. Obs. The essential character consists in the very short, straight standard, and in the great length of the

the keel. Martyn enumerates three species, which are hardy deciduous flowering shrubs. 1. *A. fetida*, stinking bean trefoil, with leaves ovate and flowers axillary. This is the only species mentioned by Gmelin in his edition of the Linnæan System, and also by Willdenow. It grows wild in the South of France, Spain, Italy, and Sicily, and also about Smyrna. It rises to the height of eight or ten feet, and produces its flowers in April and May; they are of a bright yellow colour, growing in spikes, somewhat like those of the laburnum; the seeds are never perfected in this country, and therefore it is scarce in England; it was cultivated in 1570 by Mr. Hugh Morgan. 2. *A. cretica*, with leaves oblong, and racemes longer. This is a native of Candia, and some of the islands of the Archipelago, and is at present very rare in English gardens; it has longer leaves than the former, and flowers later in the Summer, so that it never produces seeds; and it is probably only a variety. 3. *A. inodora*, with leaves pinnate, calyxes inflated and coloured, legumes compressed and straight, racemes terminating and oblong. This is equal to a middle sized tree, with branches hanging down, and frequently scandent; leaves unequally pinnate, leaflets oblong, acuminate, smooth, and without smell; flower white; a native of the woods of Cochinchina. It is doubted whether Loureiro's anagryis foetida, found wild near Canton, in China, be the same with our European one.

Culture.—These plants may be propagated by laying down their tender branches in the Spring, tinging them in the same manner as the layers of carnations, and watering them in dry weather. By this management the layers will take root by the following Spring, and should be cut off from the old plants before they begin to put out their leaves, and planted in a warm situation.

If the plants are propagated from seeds, they will be much handfomer, and rise to a greater height. For this purpose the seeds should be sown in a moderate hot-bed in the beginning of March, or in a border of good rich earth, in a well-sheltered place, sitting over them about half an inch of fine mould, and covering them with a common frame, in order to protect them in severe weather. When the seeds are good, the plants will appear in a month after the seeds are sown; they should then be inured by degrees to the open air, and removed into a sheltered situation towards the end of May. With this view the seeds may be sown in pots, and plunged in a hot-bed, because the plants will not bear transplanting till the following Spring; and it will be proper, during the two first Winters, to shelter them under a common frame, the glasses of which may be drawn off every day in mild weather, that the plants may be thus prepared for being planted abroad, when they have acquired proper strength. They should be kept in pots for three years, and they will then be fit for removal to the places where they are to remain; the best time for which is about the beginning of April, just before they begin to put out new leaves. At this time they should be turned out of the pots with good balls of earth to their roots; and some of them may be planted against walls with warm aspects, so as to be secure from the frost; and others in warm situations, where by covering the surface of the ground about their roots with tanners bark in severe winters, and screening their heads with mats, they may be preserved for several years. In the fourth year from sowing these plants will begin to produce their flowers, and will continue flowering every year; and they will be proper for intermixing with other flowering shrubs of the same growth in warm situations. Martyn's Miller.

ANAGYRIS. See CYTISUS LABURNUM.

ANAGYRIS, or ANAGYRUS, in *Ancient Geography*, a dis-

trict of Attica, in the tribe of Erechtheis, between Phalereus and the promontory of Sunium, to the east of Æxona. Some derive the name from a hero called Anagyrus, who overthrew the houses in this district, because the inhabitants had destroyed a chapel that had been dedicated to him. Others say, that its appellation was derived from the foetid plant called Anagyris, which grew here, and which had the property of yielding a stronger smell the more it was handled; and hence arose the proverb, *Commovere Anagyrin*, or *Anagyrum*, to bring a misfortune upon one's self.

ANAHARATH, a town of Judæa, in the tribe of Issachar. Josh. xix. 19.

ANAÏTICA, a district of Asia in Armenia, situate upon the Euphrates. It is said to have derived its name from the goddess *Anaitis*, to whom the Armenians rendered peculiar worship. The Anaïtic lake, mentioned by Pliny, was situated near this place, of which he says, that the best reeds that were used in writing grew upon its banks.

ANAIÏSIS, called also *TANAIS*, in *Ancient Mythology*, a goddess held in great veneration by the Armenians. Strabo (lib. xi. tom. 2. p. 805.) says, that the Armenians principally worshipped this goddess, and that the most illustrious persons of the nation dedicated their virgin daughters to her, who, after having been for a long time prostituted in her service, were given in marriage; none disdaining to marry them, but rather thinking it an honour to be thus allied to them. Pliny (lib. xxxiii.) informs us, that when the temple of this goddess at Acilifene was plundered by the Romans, under Marc Antony, her statue of massy gold was carried off, and broken to pieces. A report prevailed, that the first man who presumed to touch the goddess, was struck with an apoplexy, and instantly fell down dead. Augustus, being at Bologna a long time after this event, and supping with an old soldier who had shared the plunder, questioned him concerning the truth of the fact, and the soldier replied, "Cæsar, it is the goddess Anaitis's leg you are now eating for supper, and all I have in the world I owe to her."

ANAK, in *Scripture History*, the father of the Anakims, was the son of Arba, who gave his name to Kirjath-Arba, of Hebron. Josh. xiv. 15. Anak had three sons (Josh. xv. 14.) Shishai, Ahiman, and Talmi, who, as well as their father, were deemed giants; and they with their posterity were denominated Anakims, and reputed as a fierce and warlike people, and also of extraordinary stature. To this purpose the Hebrews, who were sent to view the land of Canaan, returned with a report, that they found there the giants, the sons of Anak, in comparison of whom they were both, in their own sight, and also in that of the Anakims, as grasshoppers. Numb. xiii. 33. When the city of Arba, the father of Anak, was assigned to Caleb, in the distribution of Canaan, he drove out the Anakims about A.M. 2559. Josh. xv. 13—15.

ANALATIVA, in *Geography*, a small island near the north-west point of the island of Ceylon.

ANALECTA, in *Antiquity*, the fragments, or offals of meat, which dropped from the table on the ground.

Analecta was also used for a servant appointed to gather up the offals of the tables.

In this sense the word is sometimes also written *analectes*. Satellius Quadratus, in the way of derision, advised Calvinius Sabinus, a man of great wealth, and much affectation of learning, but with little memory, and less genius, to keep *analectæ*, ut *grammaticos haberet analectas*; a phrase which has occasioned much dispute among critics and antiquarians.

ANALECTA is likewise, in a literary sense, used for a collection of small pieces or compositions.

The word is formed of *αναλεγω*, *I gather*.

ANALEMMA,

ANALEMMA, in *Mathematics*, derived from ἀναλημμα, of ἀναλαμβάνω, *resumo*, *I take backwards*, a planisphere, or projection of the sphere, on the plane of the meridian, orthographically made, by perpendiculars from every point of that plane, the eye being supposed to be at an infinite distance, and in the east or west point of the horizon. In this projection, the solstitial colure, and all its parallels, are projected into concentric circles, equal to the real circles of the sphere; and all circles whose planes pass through the eye, as the horizon and its parallels, are projected into right lines equal to their diameters; but all oblique circles are projected into ellipses, having the diameter of the circle for the transverse axis respectively.

The analemma was invented by John de Royas, a Spaniard. The advantages of this above the astrolabes of Ptolemy and Gemma Frisius, are, that all the lines proceeding from the eye are parallel to each other, and perpendicular to the plane of projection; consequently not only the equator is a right line, as in the astrolabe of Gemma Frisius, but all the parallels to the equator are so too; since, in virtue of the infinite distance of the eye, they are all in the same case, as if their plane passed through the eye: for the like reason, the horizon and its parallels are also right lines. On the other hand, whereas in the two former astrolabes the degrees of circles converted into right lines become very small towards the centre, and large towards the circumference, they become here small towards the circumference, and large towards the centre: so that their figures will be no less altered in this than in the others. Add, that most of the circles here degenerate into ellipses, which are often difficult to describe. See **ORTHOGRAPHIC PROJECTION**.

ANALEMMA is also used for a *gnomon* or *astrolabe*, consisting of the furniture of the same projection, drawn on a plate of brass, or wood; with an horizon, or *cursor*, fitted to it.

Its use is for finding the time of the sun's rising and setting, the length of the longest day in any latitude, and the hour of the day. The analemma is also of considerable use among *Diallists*, for laying down the signs of the zodiac, with the length of the days, with other matters of furniture, upon dials.

The most accurate treatise on the analemma now extant, was written by Ptolemy, and printed at Rome in 1562, with a commentary by F. Commandine. Since that time many authors, as Agulonius, Tacquet, Dechales, Witty, &c. have written on the same subject.

ANALEPSIS, the restoration of a body wasted by disease, by the use of a nutritious diet.

ANALEPSIS is also used for the method of hanging a broken or dislocated member, especially the hand, in a sling. This operation to the arm is called *analepsis*; to the foot, *thefis*.

ANALEPTICS, derived of ἀναλαμβάνω, *I re-establish*, in *Medicine*, restoratives; or remedies proper to restore the body, when wasted or emaciated, either by the continuance of a disease, or by want of food.

This term is sometimes applied to stimulants, but more commonly to those substances which supply a deficient nourishment. As a term, however, says Dr. Cullen (*Mat. Med.* vol. i. p. 166.) attended with some ambiguity, it should not be employed at all.

ANALIS, a specific name that occurs in several genera, both in the *Linnean* and *Fabrician* arrangement of *Entomology*.

ANALIS, a species of *SCARABÆUS*. It is black, with three equal tubercles on the head: ends of the wing cases ferruginous-brown. Fabricius. Inhabits India.

ANALIS, a species of *COCCINELLA*. It is black, red at the end, and without spots. Inhabits Europe. Fabricius.

ANALIS, a species of *CHRYSOMELA*. It is black, wing-cases brown, outer margin testaceous. Inhabits Europe. Fabricius.

ANALIS, a species of *CERAMBYX* of Linnæus, and *SAPERDA* of Fabricius. Its colour is testaceous, ends of the shells and tail black. Inhabits Africa.

ANALIS, a species of *CRYPTOCEPHALUS*. The general colour is reddish-brown; antennæ, spot on the wing-cases and tail black. Inhabits Tranquebar. Fabricius and Gmelin.

ANALIS, a species of *STAPHYLINUS*. It is shining black, except the antennæ, wing-cases, tail, and legs, which are testaceous brown. Fabricius and Paykull.

ANALIS, a species of *CIMEX*. It is oblong, green, abdomen red, and black at the end. Inhabits India. Thunberg and Gmelin.

ANALIS, a species of *PHYGANEÆ*. Wings brown, a white anal spot, nape of the head and neck covered with golden hair. Found in the north of Europe. Fabricius.

ANALIS, a species of *SPHEX*. The general colour is shining black, end of the abdomen ferruginous, wings white. Inhabits India. Fabricius.

ANALIS, a large species of *VESPA*. It is blackish, first and second segment ferruginous at the base, sixth segment entirely yellow. Found at the Cape of Good Hope. Fabricius.

ANALIS, a species of *APIS*. Thorax hairy, and ash-coloured, abdomen bluish, and black at the end. Inhabits America. Fabricius.

ANALOGICAL syllogism. See **SYLLOGISM**.

ANALOGISM, in *Medicine*. See **ANALOGY**.

ANALOGISM, among *Logicians*, the arguing from the cause to the effect.

ANALOGISTA, among *Civil Law Writers*, a tutor who is not obliged to give an account of his conduct. Persons dying sometimes appointed friends to be tutors to their children, with this clause, that they should be analogistæ. Some lawyers hold, that this did not exempt a tutor guilty of glaring mismanagement from being called to an account, and punished accordingly.

ANALOGIUM, in *Ecclesiastical Writers*, denotes an *ambo*, or reading-desk.

ANALOGIUM is sometimes also used for a *martyrology*, or *obituary* of a monastery.

ANALOGY, in *Philosophy*, a term denoting a certain relation, proportion, or agreement, which several things bear to each other in some respects, though different in others.

The word is Greek, which the Latins usually render by *comparatio*, and *proportionalitas*.

The schoolmen define analogy to be a resemblance, joined with some diversity: its foundation, according to them, is laid in the proportion of several things, considered as that proportion proceeds upon different considerations.

Thus, a sound animal, a sound food, and a sound proposition, agreeing in this, that they have a common denomination, but the reason or quality whereon the denomination is founded, different, are said to have an analogy, or to be analogous. Accordingly, analagous things are defined to be such as have a common name, but the thing immediately signified by that common name different, yet with some correspondence or relation discernible therein.

Philosophers usually distinguish three kinds of analogy, *viz.* of *inequality*, where the reason of the common denomination is the same in nature, but not in degree or order: in

which sense animal is analogous to man and brute.—Of *attribution*; where, though the reason of the common name be the same, there is a difference in its habitude or respect thereto; in which sense healthy is analogous both to a man and an exercise. Of *proportionality*; where, though the reasons of the common name do really differ, yet they bear some proportion to each other. In this sense, the gills of fishes are said to be analogous to the lungs in terrestrial animals; and thus the eye and the understanding are said to bear an analogy to each other.

Reasonings by analogy may serve to explain and illustrate, but not to prove any thing; and yet a great part of our philosophizing has no better foundation.

From a few *data*, a few points known and allowed, we reason by analogy, and deduce a number of others. It is thus that most branches of knowledge are extended to their present dimensions. There are but few things actually observed, few experiments made; and all the observations and experiments we have are only singular. Such an effect was found from such an individual body, under such and such circumstances. We infer, that what has been observed of one body under such circumstances, will, from the analogy and uniformity in the works of the Creator, equally hold in all other bodies of the same species under the like circumstances. Thus, without having recourse to experiment, we never hesitate to conclude, that the fruit of trees of the same species will have the same taste and properties. This has many times drawn us into great errors; it continues every day to lead us into new ones, and may be said to be the source of most of the mistakes committed in pursuit of science. But nevertheless, while mankind extend their thoughts toward unknown and inaccessible objects, they have no other guide to direct their researches but the supposed correspondence between the objects they are acquainted with, and those which are the subjects of their investigation.

The analogy between the three kingdoms of plants, animals and minerals, has been the source of a variety of discoveries, either real or imaginary: hence it is we have learnt, that stones vegetate; that plants breathe; that the sap circulates in them; that generation is performed by eggs in the human kind; that the planets have their atmospheres, their inhabitants, their trees, their seas, &c. Indeed, if we will follow whither analogy, real or imaginary, will lead us, there is no end of science.

As to divine and supernatural matters, it is asserted we know nothing of them but by analogy; that is, by the mediation and substitution of those ideas we have of ourselves and other natural beings. Our ideas of God himself arise from this spring; we have no direct and immediate perception of him. The knowledge we have of the Supreme Being is only an observation of his works, and a reflection of the mind, which shews what power, wisdom, &c. appear necessary to enable him to produce them. Having no proper ideas of his perfections, we give them the names of those faculties of men, which we judge necessary.

It is natural to men (says Dr. Reid, in his *Essays on the Intellectual Powers of Man*, *Ess. i. ch. iv. p. 52, &c.*) to judge of things less known, by some similitude they observe, or think they observe, between them, and things more familiar or better known. In many cases we have no better way of judging; and where the things compared have really a great similitude in their nature, when there is reason to think that they are subject to the same laws, there may be a considerable degree of probability in conclusions drawn from analogy. Thus, we may observe a very great similitude between this earth which we inhabit, and the other planets. They all revolve round the sun, as the earth does, although

at different distances, and in different periods. They borrow all their light from the sun, as the earth does. Several of them are known to revolve round their axes, and, by that means, must have a like succession of day and night. Some of them have moons, that serve to give them light in the absence of the sun, as our moon does to us. They are all, in their motion, subject to the same law of gravitation as the earth is. From all this similitude it is not unreasonable to think, that those planets may, like our earth, be the habitation of various orders of living creatures. There is some probability in this conclusion from analogy. In medicine, physicians must, for the most part, be directed in their prescriptions by analogy. The constitution of one human body is so like to that of another, that it is reasonable to think, that what is the cause of health or sickness to one, may have the same effect upon another. And this generally is found true, though not without some exceptions. In politics, we reason, for the most part, from analogy. The constitution of human nature is so similar in different societies or commonwealths, that the causes of peace and war, of tranquillity and sedition, of riches and poverty, of improvement and degeneracy, are much the same in all.

Analogical reasoning, therefore, is not, in all cases, to be rejected. It may afford a greater or a less degree of probability, according as the things compared are more or less similar in their nature. But it ought to be observed, that as this kind of reasoning can afford only probable evidence at least, so unless great caution be used, we are apt to be led into error by it. For men are naturally disposed to conceive a greater similitude in things than there really is. E. G. Anatomists, in ancient ages, seldom dissected human bodies; but very often the bodies of those quadrupeds, whose internal structure was thought to approach nearest to that of the human body. Modern anatomists have discovered many mistakes into which the ancients were led, by their conceiving a greater similitude between the structure of man and of some beast than there is in reality. By this, and many other instances that might be given, it appears, that conclusions built on analogy stand on a slippery foundation; and that we ought never to rest upon evidence of this kind when we can have more direct evidence.

Analogical reasoning may be of excellent use in answering objections against truths which have other evidence. It may likewise give a greater or a less degree of probability in cases where we can find no other evidence. But all arguments, drawn from analogy, are still the weaker, the greater disparity there is between the things compared; and, therefore, must be the weakest of all when we compare body with mind, because there are no two things in nature more unlike. There is no subject in which men have always been so prone to form their notions by analogies of this kind as in what relates to the mind. We form an early acquaintance with material things by means of our senses, and are bred up in a constant familiarity with them. Hence we are apt to measure all things by them, and to ascribe to things most remote from matter the qualities that belong to material things. It is for this reason that mankind have, in all ages, been so prone to conceive the mind itself to be some subtle kind of matter: that they have been disposed to ascribe human figure, and human organs, not only to angels, but even to the Deity. Though we are conscious of the operations of our own minds when they are exerted, and are capable of attending to them so as to form a distinct notion of them; this is so difficult a work to men, whose attention is constantly solicited by external objects, that we give them names from things that are familiar, and which are conceived to have some similitude to them; and the notions we form of them are no less analogical

gical than the names we give them. Almost all the words, by which we express the operations of the mind, are borrowed from material objects. To understand, to conceive, to imagine, to comprehend, to deliberate, to infer, and many others, are words of this kind; so that the very language of mankind, with regard to the operations of our mind, is analogical. Because bodies are affected only by contact and pressure, we are apt to conceive, that what is an immediate object of thought, and affects the mind, must be in contact with it, and make some impression upon it. When we imagine any thing, the very word leads us to think that there must be some image in the mind of the thing conceived. It is evident that these notions are drawn from some similitude conceived between body and mind, and between the properties of body and the operations of mind. The influence of analogical reasoning from a supposed similitude of mind to body as a fruitful cause of error, with regard to our mental operations, may be illustrated by the following instance. When a man is urged by contrary motions, these, on one hand, inviting him to do some action, those, on the other, to forbear it, he deliberates about it, and at last resolves to do it, or not to do it. The contrary motives are here compared to the weights in the opposite scales of a balance; and there is not perhaps any instance that can be named of a more striking analogy between body and mind. Hence the phrases of weighing motives, of deliberating upon actions, are common to all languages. From this analogy some philosophers draw very important conclusions. They say, that as the balance cannot incline to one side more than the other, when the opposite weights are equal, so a man cannot possibly determine himself if the motives on both hands are equal; and as the balance must necessarily turn to that side which has most weight, so the man must necessarily be determined to that hand where the motive is strongest. On this foundation some of the schoolmen maintained, that if a hungry ass were placed between two bundles of hay equally inviting, the beast must stand still and starve to death, being unable to turn to either, because there are equal motives to both. This is an instance of that analogical reasoning that ought never to be trusted: for the analogy between a balance and a man deliberating, though one of the strongest that can be found between matter and mind, is too weak to support any argument. A piece of dead, inactive matter, and an active intelligent being, are things very unlike; and because the one would remain at rest in a certain case, it does not follow that the other would be inactive in a case somewhat similar. The argument is no better than this, that because a dead animal moves only as it is pushed, and, if pushed with equal force in contrary directions, must remain at rest; therefore the same thing must happen to a living animal; for surely the similitude between a dead animal and a living one, is as great as that between a balance and a man.

No author has made a more just and a more happy use of the analogical mode of reasoning than Bishop Butler, in his admirable treatise, entitled, "The Analogy of Religion, natural and revealed, to the Constitution and Course of Nature." Instead of indulging in idle speculations how the world might possibly have been better than it is, or forgetful of the difference between hypothesis and fact, attempting to explain the divine economy with respect to intelligent creatures from preconceived notions of his own, this excellent writer first inquires, what the constitution of nature, as made known to us in the way of experiment, actually is; and from this, now seen and acknowledged, he endeavours to form a judgment of that larger constitution, which religion discovers to us. If the dispensation of Providence which

we are now under, considered as inhabitants of this world, and having a temporal interest to secure in it, be found, upon examination, to be analogous to, and of a piece with, that further dispensation, which relates to us as designed for another world, in which we have an eternal interest depending on our behaviour here, if both may be traced up to the same general laws, and appear to be carried on according to the same plan of administration; the fair presumption is, that both proceed from one and the same Author. And if the principal parts objected to in this latter dispensation be similar to, and of the same kind with what we certainly experience under the former; the objections, being clearly inconclusive in one case, because contradicted by plain fact, must, in all reason, be allowed to be inconclusive also in the other. This way of arguing from what is acknowledged to what is disputed, from things known to other things that resemble them, from that part of the divine establishment which is exposed to our view to that more important one which lies beyond it, is, on all hands, confessed to be just. By this method Sir Isaac Newton has unfolded the system of nature; and by the same method Bishop Butler has explained the system of grace, and, as Mr. Mainwaring (in the dissertation prefixed to his volume of sermons, p. 12.) expresses it, "formed and concluded a happy alliance between faith and philosophy." Although the argument from analogy be allowed to be imperfect, and by no means sufficient to solve all difficulties respecting the government of God, and the designs of his providence with regard to mankind; yet surely it is of importance to learn from it, that the natural and moral worlds are intimately connected, and parts of one stupendous whole or system; and that the chief objections which are brought against religion, may be urged with equal force against the constitution and course of nature, where they are certainly false in fact. This information we derive from the bishop's work; the proper design of which is not to prove the truth of religion, either natural or revealed, but to confirm that proof, already known, by considerations deduced from analogy; and to answer objections against those truths, which are established upon their proper evidence. When objections are made against the truths of religion, which may be made with equal strength against what we know to be true in the course of nature, such objections can have no weight. The ingenious author has premised the following summary of the contents and plan of his work, which we shall here transcribe for the information of those readers who may be desirous of pursuing the investigation of subjects of this nature. "The divine government of the world, implied in the notion of religion in general, and of Christianity, contains in it—that mankind is appointed to live in a future state—that there every one shall be rewarded or punished; rewarded or punished respectively for all that behaviour here, which we comprehend under the words, virtuous or vicious, morally good or evil—that our present life is a probation, a state of trial, and of discipline, for that future one; notwithstanding the objections which men may fancy they have, from notions of necessity, against there being any such moral plan as this at all; and whatever objections may appear to be against the wisdom and goodness of it, as it stands so imperfectly made known to us at present—that this world being in a state of apostacy and wickedness, and consequently of ruin; and the sense both of their condition and duty, being greatly corrupted amongst men, this gave occasion for an additional dispensation of Providence, of the utmost importance; proved by miracles; but containing in it many things appearing to us strange, and not to have been expected; a dispensation of Providence, which is a scheme or system of things, carried

by the mediation of a divine person, the Messiah, in order to the recovery of the world; yet not revealed to all men, nor proved with the strongest possible evidence to all those to whom it is revealed; but only to such a part of mankind, and with such particular evidence as the wisdom of God thought fit." Such are the contents of this treatise; and the design of it is, to shew, "that the several parts principally objected against in this moral and Christian dispensation, including its scheme, its publication, and the proof which God has afforded us of its truth; that the particular parts principally objected against in this whole dispensation, are analogous to what is experienced in the constitution or course of nature or providence; that the chief objections themselves which are alleged against the former, are no other than what may be alleged with like justness against the latter, where they are found, in fact, to be inconclusive; and that this argument from analogy is, in general, unanswerable, and undoubtedly of weight on the side of religion, notwithstanding the objections which may seem to lie against it, and the real ground which there may be for difference of opinion, as to the particular degree of weight which is to be laid upon it." See Butler's *Analogy of Religion*, by the Bishop of Gloucester, 8vo. 1783, Preface, p. 34, &c. and Introduction, p. 13, &c.

Analogy, according to the derivation of the word, says Professor Castillon, of Berlin, (*Haarlem Memoirs* for 1786, or vol. xxii.) indicates a resemblance discernible by reason; and its principal use in the investigation of physical and moral truth, may be reduced to the four following particulars: 1. By means of our senses to improve, first, our own judgment, and afterwards that of others, with respect to intellectual subjects. 2. To deduce a general from a particular truth. Having discovered and proved the truth of a proposition with respect to any particular object, examine whether this truth flows from a quality peculiar to this single object, or common to several objects. In the latter case, all these objects may be comprehended under one general idea, founded on their common quality. Substitute this general idea instead of the particular object, and the proposition will become general without ceasing to be true; because whatever evidently and solely results from the identity on which an analogy is founded, must necessarily be true with respect to all those objects in which the analogy is the same. 3. To prove the truth or falsehood of propositions which cannot otherwise be demonstrated. 4. To discover new truths in both natural and moral philosophy.

For the difference between analogy and experience, see EXPERIENCE.

ANALOGY, in *Botany*, is a term that has been used to denote the resemblance or similarity which plants bear to each other, with regard to their medical properties and uses; and the study of botanical analogy, or the arguing from the known properties and effects of one species to those of its congeners, has been recommended as a means of investigating the powers of medicines derived from the vegetable kingdom. See a *Short Attempt to recommend the Study of Botanical analogy*, &c. 8vo. 1784.

ANALOGY, in *Geometry*, denotes a similitude of ratios, or proportions.

ANALOGY, in *Grammar*, denotes the suitableness or agreeableness of a word or phrase to the common rules or forms of language.

In this sense, *analogy* stands opposed to ANOMALY.

ANALOGY, in respect to language, denotes a conformity with other points already established, serving as a rule or model for the making of new words and phrases similar to those already in use.

Or, analogy may be considered as a general or established usage, applied in similar cases to certain words, phrases, or constructions not yet established. Or, analogy is only a particular usage, which, in certain cases, is inferred from a general usage already established.

Grammarians are divided into two parties. Some, with Sanctius, contend, that the analogy or reason reigns through all the parts, all the phrases and dictions of the Latin tongue. On the contrary, others, with Perizonius, assert, that there are many phrases, contrary to analogy and reason, derived all originally from the populace. Such, *e. gr.* are, *Nemo, homo, deorsum, versum*, &c.

Varro and Cæsar wrote expressly on the analogy of Latin words, but their works are now lost. Jac. Operarius has endeavoured to supply that loss, by tracing the analogy of 20,000 Latin words. *Fab. Bib. Lat. lib. i. cap. 10.*

ANALOGY of conjugation, *analogia conjugationis*, is not only when a verb is conjugated like another, but agrees with it in the quantity of the syllables.

Thus *clamo* is conjugated like *amo*, and *clamabam* pronounced like *amabam*.

ANALOGY of declension, *analogia declinationis*, is not only when a noun, pronoun, or participle is declined like another, but agrees with it in respect of the quantities of the syllables.

Thus, *e. g.* *mater* is declined like *pater*, *saltans* as *amans*, *suus* as *tuus*. So *pennarum* is pronounced as *mensarum*, and *funeris* as *muneris*.

ANALOGY of doctrine, among *Critics*, is one of the great rules to which regard is to be had in the interpretation of authors.

We are first to learn from the author himself the general system which he follows; and as no writer is to be easily supposed to contradict himself, our interpretation is to be so conducted, as that nothing be admitted which is contrary to, or tends to overthrow this system.

Thus, in interpreting an author who follows the Platonic scheme, we are to prefer a sense which is consistent with the Platonic doctrine to another which is contrary to it, unless there be some evident proof, that the author contradicts himself, or asserts things which are inconsistent.

ANALOGY, in *Rhetoric*. See COMPARISON.

ANALOGY of faith, among *Divines*, denotes that relation which the several articles of faith bear to each other.

Analogy of faith stands opposed to tradition and authority, which is the great rule of interpretation among catholics. By this it is required, that whether we interpret Scripture, or explain the doctrines of Christianity, all our positions and explanations be consistent with the analogy of our faith, and those evident propositions deduced from Scripture.

Tortschius, Antonius, Franckius, &c. have written expressly on the analogy of faith.

ANALOGY, in *Medicine*, is a certain relation or resemblance between diseases, in virtue whereof, we may reason and conclude from one to another, and treat them all much in the same manner; *e. gr.* pleurisy being a species of inflammation, produced like inflammations of other parts, is to be treated like them, relaxing the solids, which are too much stretched, and giving free passage for the humours.

This method of deduction was called by the ancients *medicina rationalis*, or *dogmatica*, in opposition to the *empirica*, called also *epilogisin*, which was conducted by appearances only without theory.

ANALYSIS, derived from *αναλυω*, *to resolve*, in a general sense, is the resolution of something compounded into its constituent parts.

ANALYSIS, in *Chemistry*. The whole of the practical and experimental part of chemical science may be properly included under the art of analysis, a complete account of this, therefore, would require the enumeration of almost every known fact in chemistry; and the inferences and general deductions from these facts would comprehend all that is valuable in the philosophy of chemistry. To treat the subject thus fully would, however, be inconsistent with the plan of this work, and would be little satisfactory to the reader, except such a system of arrangement was adopted, as would admit of reference to any particular part without the necessity of consulting the rest. For these reasons we have thought it upon the whole most convenient to subdivide all that relates to the subject of analysis in the following manner. For the general method of analysing animal matters, see **ANIMAL matter**; of vegetable matter, see **VEGETABLE matter**; of minerals in general, see **MINERAL analysis**; of mineral waters, see **WATERS, mineral**.

The analysis of metallic ores will be treated of generally under **ORES**, and particularly under each metal.

ANALYSIS, grammatical, is that employed about words, their etymons, homonyms, or various acceptations, synonyms, constructions, uses, and the like.

Pafor has given a grammatical analysis of the difficult words in Hesiod, &c. Sturmius has published a method of making the analysis of Latin words.

ANALYSIS, in Logic, is a method of applying the rules of reasoning to resolve a discourse into its principles, in order to a discovery of its truth or falsehood. Or it is an examination of some discourse, proposition, or other matter, by searching into its principles, and separating and opening its parts; in order to consider them more distinctly, and arrive at a more precise knowledge of the whole.

Analysis makes one great branch or species of method; and as it resolves a complex idea into its component principles, it is called also **RESOLUTION**.

It is particularly used for the reduction of an imperfect syllogism to a perfect one. This is otherwise called **REDUCTION**.

The order of the *synthesis* is contrary to that of the *analysis*, one beginning where the other ends. The two methods cannot always be used indifferently; the *analysis* is most proper for the discovery of truth, and *SYNTHESIS* for teaching and explaining it in a systematical way. Hence some call *analysis* the method of invention. See **METHOD**.

ANALYSIS of ideas, that whereby an idea is resolved into the ideas of its ingredients, and the ideas of these again into simple ones, till at length we arrive at the most simple.

ANALYSIS, in Mathematics, is properly the method of resolving mathematical problems, by reducing them into equations; and may be divided into *ancient* and *modern*.

The moderns are at some loss concerning the *ancient analysis*, i. e. concerning the art and method whereby the ancients resolved problems, and invented theorems. Some traces of their method are extant in Pappus, Apollonius, and Euclid; and Dr. Hooke suspects, that their analysis went backwards through almost all the same steps by which their demonstrations went forwards.

That this might often be the case, seems evident to any one who has studied Euclid with care. They have indeed left us no precepts of their art. This, like almost all others, must be acquired by imitation, and the excellent examples left us by the Greeks. Men of genius among the moderns, who had studied the works of the ancient geometers, have been thereby enabled to imitate them, and penetrate into their methods: the works of Huygens and Newton, and also the treatise of Conic Sections by Mr. Simpson, profes-

for of mathematics in the university of Glasgow; as also several parts of Mr. Maclaurin's Treatise on Fluxions, are evident proofs of this. Weigelius has endeavoured to retrieve the ancient analysis of Aristotle, from Euclid and other ancient geometricians.

The *ancient analysis*, as Pappus has described it in his "Mathematicæ Collectiones," lib. vii. p. 157, ed. Commandini, Pisaur. 1588, is the method of proceeding from the thing sought taken for granted, through its consequences, to something that is really granted or known; in which sense it is the reverse of synthesis or composition, that commences with the last step of the analysis, and traces the several steps backward, making that in this case antecedent, which in the other was consequent, till we arrive at the thing sought, which was assumed in the first step of the analysis. The principal authors on the ancient analysis, enumerated by Pappus (*ubi supra*) are Euclid in his "Data," "Porismata," and "De Locis ad Superficiem;" Apollonius, "De Sectione Rationis," "De Sectione Spatii," "De Tactionibus," "De Inclinationibus," "De Locis Planis," and "De Conicis;" Aristæus, "De Locis Solidis;" and Eratosthenes, "De Mediis Proportionalibus." Pappus himself, who has given many examples from the preceding writers, may be added to the above number. This analysis has also been cultivated by many of the moderns, as Fermat, Viviani, Ghetaldus, Snellius, Huygens, Simson, Stewart, Lawson, &c. and particularly by Hugo d'Omerique, in his "Analysis Geometrica," in which he has endeavoured to restore the analysis of the ancients. Sir Isaac Newton, as we are informed by Dr. Pemberton, ("View of Sir Isaac Newton's Philosophy," preface,) always professed himself a great admirer of the ancients, and even censured himself for not following them more closely than he did. He also regretted his mistake at the beginning of his mathematical studies, in applying himself to the works of Des Cartes and other algebraic writers, before he had considered the Elements of Euclid with that attention which so excellent a writer deserves. He used to commend the laudable attempt of Hugo d'Omerique to restore the ancient analysis; and very much esteemed Apollonius's book, "De Sectione Rationis," for giving us a clearer notion of that analysis than we had before; and he particularly recommended Huygens's style and manner. In the application of the ancient analysis for the solution of geometrical problems, strict rules cannot be laid down, nor any previous instructions be delivered, from which it may not be necessary to deviate. Some preparation is necessary in order to form a connection between the data and *quæsitæ*, which must be suggested to the mind of the analyst by a due consideration of the nature of the problem; and the skill of the analyst was manifested in discovering the most proper preceding operations, on which his analysis was to be founded. As an example we may give the 15th proposition of the 7th book of Pappus, p. 257. From the extremes of the base A and B (*Plate I. Geometry, fig. 14.*) of a given segment of a circle, let it be required to draw two lines AC, BC, meeting at a point C in the circumference, which shall have to each other the given ratio of F to G. Pappus resolves this problem in the following manner: *Analysis*. Suppose the thing done, or that the point C is found: and draw CD a tangent to the circle at C, and meeting AB produced in D. By the hypothesis AC : BC :: F : G; and AC² : BC² :: DA : DB; which may be thus proved. DC touches the circle, and BC cuts it; and therefore by Euclid, lib. iii. prop. 32, the angle BCD = BAC, and the angle D being common to both the triangles DCA and DCB; these triangles will be similar; and DA : DC :: DC : DB; and consequently DA² : DC² :: DA : DB. Moreover, DA : AC ::

DC : CB, and DA : DC :: AC : CB, or DA' : DC' :: AC' : CB' ; and therefore by equality, AC' : BC' :: DA : DB. But the ratio of AC' to BC' is given by prop. lvii. of Simson's edition of the "Data;" because the ratio of AC to BC is given, and consequently that of DA to DB is given. Then by Data vi. the ratio of DA to AB is given; and hence by Data ii. DA is given in magnitude. Here the analysis properly ends. For it has been shewn that DA is given, or that a point D may be found in AB produced, such, that a tangent being drawn from it to the circumference, the point of contact will be the point sought; and therefore we may begin the composition, or synthetical demonstration, by finding the point D, or laying down the line AD, which was given in the last step of the analysis.

Synthesis. Construction. Make $F' : G' :: AD : DB$, which may be done, as AB is given, by making $F' - G' : G' :: AB : DB$, and then by composition, it will be $F' : G' :: AD : DB$; then from the point D thus found, draw a tangent to the circle, and from the point of contact C drawing CA and CB, the thing is done.

Demonstration. Since by constr. $F' : G' :: AD : DB$, and $AD : DB :: AC' : BC'$; we shall have $F' : G' :: AC' : BC'$, and consequently $F : G :: AC : BC$. Q. E. D.

In this problem we have an instance of the method of resolution and composition practised by the ancients, the solution here given being that of Pappus himself. But as the method of referring to the "Data" may appear operose, and as it is not absolutely necessary, the rigour of the ancient method of solution may be abated, whilst its admirable elegance and perspicuity are preserved. This may be exhibited in another solution of the same problem, which is as follows:

Analysis. Suppose again that the thing is done, *v. z.* AC : BC :: F : G, and draw BH, making the angle ABH = ACB, and meeting AC produced in H. Then as the angle A is common, the triangles ABC and ABH are equiangular, and therefore AC : BC :: AB : BH, in a given ratio; and, AB being given, BH will be given in position and magnitude.

Synthesis. Construction. Draw BH, making the angle ABH equal to that which may be contained in the given segment, and take AH to BH in the given ratio of F to G. Draw ACH and BC.

Demonstration. The triangles ABC, ABH are equiangular, therefore AC : BC :: AB : BH, which is the given ratio by construction.

Modern Analysis comprehends algebra, arithmetic of infinites, infinite series, increments, fluxions, &c. for an account of each of which, see the respective articles. The modern analysis is a general instrument by which the finest inventions and the greatest improvements have been made in mathematics and philosophy for the last two centuries. It furnishes the most perfect examples of the manner in which the art of reasoning should be employed; it gives to the mind a wonderful skill for discovering things unknown by a few things given; and by employing short and easy symbols for expressing ideas, it presents to the understanding things which would otherwise lie beyond its sphere. By means of this, geometrical demonstrations may be abridged: a long train of reasoning, aided and facilitated by visible symbols, and the various operations which it requires, performed by the arrangement and combination of these symbols. By this artifice a great number of truths may be expressed in a single line, whereas, in the ordinary process, they would occupy pages, or even volumes: and thus by the contemplation of one line of calculation, we may acquire in a short time the knowledge of a whole science, which, without this aid, could scarcely be comprehended in several years.

Sir Isaac Newton, indeed, who well knew the advantages of analysis in geometry and other sciences, frequently lamented, that the study of the ancient geometry should be neglected and abandoned; and it must be allowed that the method employed by the ancients in their geometrical writings is more rigorous than that of the modern analysis; and though it be greatly inferior to that of the moderns, in point of dispatch, and facility of invention, it is nevertheless highly useful in strengthening the mind, improving the reasoning faculties, and accustoming the young mathematician to a pure, clear, and accurate mode of investigation and demonstration, though by a long and laboured process, to which he would reluctantly have submitted, if his taste had been vitiated, as it were, by the modern analysis. On this circumstance were principally founded the complaints of Newton, who feared, lest by the too early and frequent use of the modern analysis, the science of geometry should lose that rigour and purity, which characterise its investigations, and the mind become debilitated by the facility of our analysis. He was therefore fully justified in recommending, to a certain extent, the study of the ancient geometers; whose demonstrations, being more difficult and operose, afford greater exercise to the mind, accustom it to a closer application, extend its views, and habituate it to patience and resolution, so necessary for making discoveries. This, however, is the only or principal advantage resulting from it; for, if we were restricted to the method of the ancients, it is probable that persons of the most acute and comprehensive genius would have made few or inconsiderable discoveries, in comparison of those obtained by means of the modern analysis. And even with regard to the advantage attending investigations, pursued in the manner of the ancients, which is that of being more rigorous, it may perhaps be doubted whether this pretension be well founded. As for those of Newton himself, who conducted his demonstrations in the manner of the ancients, it is evident that he investigates his theorems by a method different from that employed in the demonstrations, which are commonly analytical calculations, disguised by substituting the name of lines for their algebraical value; and though it must be acknowledged, that his demonstrations are rigorous, it is no less true that they would be the same when translated and delivered in the algebraic language; and what difference can it make in this respect, whether we call a line AB, or denote it by the algebraic character *a*? Indeed, this last designation has this peculiarity, that when all the lines are denoted by algebraic characters, many operations can be performed upon them, without thinking of the lines or the figure. And this circumstance is very advantageous, as it relieves the mind, so that its whole energy may be employed in overcoming the natural difficulty of the problem itself. Upon a comparison of the ancient and modern analysis, the result seems to be, that the method of the ancients is the best adapted to the commencement of our studies, as it serves to form the mind, and to fix proper habits; and that of the moderns should succeed, and is best suited to extend our views beyond the present limits, and to assist us in making new discoveries and improvement. Montucla Hist. des Mathematiques, tom. i. p. 166. p. 195. Hutton's Math. Dict. tom. i.

ANALYSIS is divided by some authors into *simple* and *compound*.

ANALYSIS, *simple*, is that employed in solving problems reducible to simple EQUATIONS.

ANALYSIS, *compound*, or *complex*, that which gives the expressions or solutions of problems in compounded EQUATIONS.

ANALYSIS is farther divided, with regard to its object, into that of *finites*, and that of *infinites*.

ANALYSIS of finite quantities, is what we otherwise call *specious arithmetic*, or ALGEBRA.

ANALYSIS of infinites, called also the new analysis, is particularly used for the *method of fluxions*, or the *differential calculus*.

The great advantage of the modern mathematicians beyond the ancients arises chiefly from the use of this modern analysis.

The chief writers upon the analysis of infinites are, its inventor Sir Isaac Newton, in his "Analysis per Quantitatum Series, Fluxiones, & Differentias, cum Enumeratione Linearum tertii Ordinis;" and "De Quadratura Curvarum;" and M. Leibnitz, in Act. Eruditor. an. 1684. The Marquis De l'Hôpital, in his "Analyse des Infiniments petites," 1696. Carre, in his "Methode pour la Mesure des Surfaces, la Dimension des Solides, &c. par l'Application du Calcul Integral," 1700. G. Manfredi, in a posthumous piece, "De Constructione Aequationum differentialium primi gradus," 1707. Nic. Mercator, in Logarithmotechnica," 1668. Cheyne, in "Methodus Fluxionum inversa," 1703. Craig, in "Methodus Figurarum linearum rectis & curvis comprehensarum Quadraturas determinandi," 1685; and "De Quadraturis Figurarum curvilinearum & locis," &c. 1693. Dav. Gregory, in "Exercitatio Geometrica de Dimensione Figurarum," 1664; and Nieuwentijt, in "Considerationes circa Analyseos ad Quantitates infinite parvas applicatae principia, 1695. The sum of what is found in l'Hôpital, Carre, Cheyne, Gregory, and Craig, is collected into one volume, and very well explained, by C. Hayes, under the title of a "Treatise of Fluxions," &c. 1704. And the substance of most of the rest in Pere Reynau's "Analyse Demontrée, 2 vols. 4to. 1728. De Moivre also, Maclaurin, and Mr. T. Simpson, may be added to the number.

ANALYSIS of powers, denotes the resolving them into their roots. In this sense analysis amounts to the same with what we otherwise call EVOLUTION.

We find divers other kinds of analysis treated of by mathematical writers, as the *analysis of indivisibles*, &c. M. Leibnitz spoke of an *analysis situs*, different from the analysis of magnitudes.

The analysis of geometrical curves shews their properties and internal constitution, their curvature, points of inflection, station, retrogradation, variation, &c. In this analysis curves are usually considered as polygons, composed of an infinite number of infinitely little sides, but this supposition is neither accurate nor necessary, though it sometimes affords convenient hints for invention.

F. Reynau, of the *Oratory*, has given a large system of algebra, under the title of analysis. F. Casse censures it as not sufficiently methodical or systematical. The great divisions and members are lost in the multitude of particular rules and methods.

ANALYSIS, in *Rhetoric*, is that which examines the connections, tropes, figures, and the like, inquiring into the proposition, division, passions, arguments, and other apparatus of rhetoric.

Several authors, as Freigius and others, have given analyses of Cicero's Orations, wherein they reduce them to their grammatical and logical principles; strip them of all the ornaments, and additions of rhetoric, which otherwise disguise their true form, and conceal the connection between one part and another. The design of these authors is to have those admired harangues, just such as the judgment disposed them, without the help of imagination; so that here we may coolly view the force of each proof, and admire the use Cicero made of rhetorical figures, to conceal the weak part of a cause.

A collection has been made of the analyses formed by the

most celebrated authors of the sixteenth century, in three volumes folio.

ANALYSIS of Soils, in *Agriculture*. See SOILS.

ANALYSIS of Vegetables. See VEGETABLES.

ANALYSIS is also used as a kind of syllabus, or table of the principal heads or articles of a continued discourse; disposed in their natural order and dependency.

Analyses are more scientific than alphabetical indexes; but they are less used, as being more intricate.

ANALYSIS is likewise used for a brief, but methodical illustration of the principles of a science; in which sense it is nearly synonymous with what we otherwise call a *synopsis*.

ANALYST, a person who analyses a thing, or makes use of the analytical method. In which sense analyst amounts to much the same with *computist* or *calculator*.

Some restrain the word more peculiarly to denote a mathematician, who makes a great use of the algebraic method or *calculus* in geometry, in exclusion of the *synthetic*, or strict geometrical method.

In a sense not unlike this Dr. Berkeley, an ingenious writer, gives the title *analysis* to a book against the modern *geometry*, or doctrine of *fluxions*.

ANALYTIC, *ANALYTICAL*, something that belongs to, or partakes of, the nature of analysis.

Thus we say, an analytical demonstration; analytical inquiry; analytical table, or scheme; analytical method, &c. The analytic method stands opposite to the *synthetic*. See METHOD.

ANALYTICS, *ANALYTICA*, the science or doctrine and use of *ANALYSIS*.

To the modern analytics principally belongs *algebra*; the history of which, with the several authors thereof, see under ALGEBRA.

ANALYTICS, in *Literary History*, is particularly used to denote certain writings of Aristotle under this title.

Aristotle's Analytics consist of four books, two under the denomination of *former*, *Αναλυτικων προτερων*, and as many under that of *latter*, *υστερων*. They belong to the class of his acroamatic works. Fabr. Bibl. Græc. lib. iii. cap. 6.

ANALYTICS is also used by some for a part of *LOGIC*, which teaches to decline and construe reason, as grammar does words.

ANAM, in *Geography*, is called by the Portuguese COCHIN-CHINA, and bends its hollow curvature along the coast, from lat. 13° to 17° 30'.

ANAMABOA, or *JAMISIA*, a large and populous town in the kingdom of Fantin, on the gold coast of Africa, where the English have a fort. The inhabitants are generally deceitful and fraudulent, and are very artful in debasing and counterfeiting their gold coin. Anamaboa is reckoned the most powerful town upon the whole coast. It is divided into two parts; one part inhabited by the fishermen of Elmina, the other by those of Fantin, who pay a certain duty to the brass for the liberty of pursuing their occupation. The greatest inconvenience attending the situation of the English fort at this place, arises from the difficulty of landing from the ships, as the shore is covered with rocks projecting into the sea, and the surf rises to a great height; and, on this account, those that trade here, are landed by means of canoes upon a sandy point, surrounded by a wall, which is built by the company, and rendered convenient by lodgings for the negroes under the cannon of the fort. The soil is adapted for making bricks; the shells upon the coast furnish excellent lime; and the country affords great plenty of timber. The adjacent country is mountainous, but the hills are at a distance from the town, serve as land-marks at sea, and being covered with trees, afford an agreeable prospect. The country is populous, and very rich in gold, slaves, and all the necessaries of life, but more particularly

particularly in corn; and the palm wine is excellent. Their opulence has rendered the inhabitants haughty and arrogant. In the woods of this country are found the most beautiful paroquets, and a great variety of other birds. Fruits, roots, and vegetables of every kind abound, and are cultivated with little trouble. The English fort is a large edifice, flanked by two towers, and fortified towards the sea with two bastions; it is constructed of brick and stone cemented with lime. It stands upon a rock at the distance of 30 paces from the sea; it is mounted with 12 pieces of cannon, and 12 patereroes, and defended by a garrison of 12 whites and 18 blacks, under the command of the chief factor.

The natives formerly treated the English garrison with so much insolence, as often to block them within their walls, and frequently, if they disliked the governor, they sent him in a canoe to Cape Coast, with marks of the utmost contempt. The negroes of Fantin are the most turbulent upon the coast. In 1701 they declared war against the English, and, assembling in a tumultuous manner, set fire to the exterior building, and proceeded with their outrages, till they were dispersed by a discharge of the cannon from the batteries. The English, however, took their revenge, by laying the greater part of the town of Anamaboa in ashes; and hostilities continued for some time, till at last the natives were obliged to sue for peace. The fort was abandoned in 1733, but again resumed by the English, who have maintained possession of it ever since.

ANAMANI, ANAMANES, or AMANES, in *Ancient Geography*, were friends and allies of the Romans, who inhabited Cisalpine Gaul, at the foot of the Apennines to the south of the Po, having Trebia to the west, and Tarns for their principal rivers. In the extent of their country were found Placentia, Veleia, Florentia, and Julia Fidentia.

ANAMARI, a people mentioned by Polybius, and placed in the vicinity of Marseilles.

ANAMASCIA, or ANAMATIA, a town of Lower Pan-
nonia, and placed by M. d'Anville south of Acinova.

ANAMBA, in *Geography*, an island in the Indian sea, west of Borneo. N. lat. 2° 58'. E. long. 106° 44'.

ANAMIM, the second son of Mizraim, Gen. x. 13. Broughton takes his descendants to be the Numidians, amongst whom he finds Anubis. Others suppose that they were the Anaitæ of Ethiopia. But as they were the descendants of Mizraim, and must be sought for about Egypt, the opinion of Bochart is more probable, who conceives them to be the Nomades, who lived about Ammon and Nasamonitis; and were called Anamii, from Anam, which signifies a sheep among the ancient Egyptians, as it does among the Arabians. For the Nomades fed sheep, as Herodotus informs us, and lived upon them, whereas, they abstained from eating cows or swine; and their garments also were of sheep-skins.

ANAMIS, in *Ancient Geography*, a river mentioned by Arrian (cap. xxxiii.), and supposed to be the same with that which is called Andamis by Pliny and Ptolemy. It belonged to Carmania. M. d'Anville places this small river on a strait, which forms the communication between the sea and the Persian gulf.

ANAMMELECH, in *Scripture History*, an idol of the Sepharvites, who are said (2 Kings, xvii. 31.) to have burned their children in honour of this deity and Adrammelech. These were the same gods with Moloch, to whom the same sacrifices were offered. The Jewish rabbins represent one in the form of a peacock, and the other of a pheasant; but they were probably only different names of Moloch, which was the sun: the addition of Addir, signifying magnificent or potent, makes Adrammelech or the mighty Moloch, and of Ana, denoting to answer, forms Anam-

melech, or the Oracular Moloch. Dr. Hyde (Rel. Vet. Perf. cap. ii. p. 63.) is of opinion, that Adrammelech signified the king of the flock; *Adre* denoting *greges*; and *Ana* being the same with *pecus* in the Persian language, and expressing the lesser cattle, *viz.* the sheep and goats; Anammelech was of much the same signification. These gods, he conceives, had the care of the flocks; and as the riches of these people consisted in cattle, were made the objects of their worship. They were also celestial constellations, as he observes, which, as the people imagined, promoted the breed and growth of cattle. Others make Adrammelech the sun, and Anammelech the moon.

ANAMNESEIS, from *ανα* and *μνησειν*, *I remember*, in *Ancient Writers*, denote encomiums of persons who had behaved well in war, or on other occasions, rehearsed before the emperors of Constantinople, to put them in mind of bestowing suitable rewards.

ANAMNESTICS, in *Medicine*, are used by some writers to denote those signs which help to discover the past state of a patient's body in which sense it stands opposed to **PROGNOSTICS**.

These are otherwise called *rememoratives*.

Some have used this term for medicines that are supposed to improve the memory, or restore it when lost. But this is a general title, says Dr. Cullen (Mat. Med. vol. i. p. 166.) which seems to have no foundation at all, or which, if it had, is too general, and would be very improperly employed.

ANAMOOKA, or ROTTERDAM, in *Geography*, one of the Friendly islands, in the South Pacific Ocean. It is situated in S. lat. 20° 15', and W. long. 174° 31', about 18 leagues distant from Tongataboo, or Amsterdam; which it resembles in its aspect. Its form is triangular, and none of its sides exceed the length of four miles. Its extent is also diminished by a large salt lagoon which almost cuts off its south-eastern angle from the rest. Its walls are surrounded by small islets, sand banks, and reefs, by which is formed a harbour on the south-western side of the island, with anchorage in 10 and 12 fathom, the bottom being coral sand. It is well sheltered, but no fresh water is to be obtained near the shore. On the north-west side are two coves, to which are narrow passages for boats through the reefs. To the southward of these is a bank, free from rocks, with 20 and 25 fathom depth, one or two miles from shore. The coast rises nearly perpendicular, 15 or 20 feet from the sea, and the interior appears level, excepting some small hillocks, and a more considerable one toward the centre of the island. It is similar to Tongataboo in soil and productions, but less cultivated, even in proportion to its size. It is, however, better furnished with water, though somewhat brackish, having a pond about three quarters of a mile from the landing-place on the north-west side, of half a mile in circuit. This island was discovered by Tasman, in 1643, and called Rotterdam. Captain Cook arrived at it in 1774. Thefts were more frequently committed here than at the southernmost islands of the group; the character of the women appeared also to be more licentious, and that of the men more daring. Some of the natives distinguished themselves by their good conduct, and most of them behaved well, except when they were tempted to steal some of the novelties possessed by their visitors. Capt. Cook returned to this island in 1777. Lieutenant Bligh, in the *Bounty*, anchored at Anamooka in 1789. Pine apples, which had been planted in the islands visited by Capt. Cook, were found here at that time in a flourishing state. Capt. Edwards twice visited Anamooka in 1791. No subsequent visit to this island has been made known. It is ranked by the natives amongst the smaller islands of their Archipelago, which

which contains 35 larger than this. A disease of the leprous kind, which seems to be common to all the islands of this ocean, is said to prevail more at Anamooka than in any other part of this group. The venereal disease, introduced here by the English, has made a lamentable progress. As wood is an article procured here by all the ships, care should be taken to avoid an accident, which may occur in cutting a tree, called by the natives *saitanoo*. This is a species of pepper, and yields a milky juice that injures the eyes and skin of the workmen. Missionary Voyage, Prelim. Disc. p. 56—60.

ANAMORPHOSIS, compounded of *ana* and *μορφή*, form, in *Perspective* and *Painting*, a monstrous projection; or a representation of some image, either on a plane or curve surface, deformed and distorted: which at a certain distance shall appear regular, and in proportion.

To make an anamorphosis, or monstrous projection on a plane. Draw the square ABCD (*Plate 1. Perspective, fig. 1.*) of any size at pleasure, and subdivide it into a number of areolas, or lesser squares. In this square, or reticle, called the *craticular prototype*, let the image to be distorted be drawn. Then draw the line *ab* (*fig. 2.*) equal to AB; and divide it into the same number of equal parts, as the side of the prototype AB; and in E, the middle of it, erect the perpendicular EV, so much the longer, and draw VS perpendicular to EV, so much the shorter, as the image is designed to be more distorted. From each point of division draw right lines to V, and join the points *a* and S, by the right line *a S*. Through the points *d, e, f, g*, draw lines parallel to *ab*; then will *abcd* be the space in which the monstrous projection is to be delineated; called the *craticular ectype*.

Lastly, in every areola, or small trapezium of the space *abcd* draw what appears delineated in the correspondent areola of the square ABCD; by this means you will obtain a deformed image, which yet will appear in just proportion to an eye distant from it by the length of EV, and raised above it by the height VS.

It will be diverting to manage it so that the deformed image may not represent a mere chaos but some other image: thus, we have seen a river with soldiers, waggon, &c. marching along the side of it, so drawn, that when viewed by an eye in the point S, it appears to be the satirical face of a man.

An image also may be distorted mechanically, by perforating it here and there with a needle, and placing it against a candle or lamp; and observing where the rays, which pass through these little holes, fall on a plane, or curve superficies; for they will give the correspondent points of the image deformed; by means whereof, the deformation may be completed.

Let the image, whatever it be, e. g. IHS, be drawn upon a cylinder of paper or pasteboard, AFCD (*fig. 3.*); and the perforations being made as now described, place a candle G, behind the cylinder, and mark upon the ground the points corresponding to the perforations of the image, which will be distorted more or less, according to the position of the candle, or the plane, &c. Then, let the picture that is formed be an exact copy of this distorted image, and substitute a metallic speculum in the place of the cylinder, and let the eye of the spectator have the same position before the cylinder that the candle had behind it, the distorted image will, by reflection from the speculum, be restored to its proper shape.

ANAMORPHOSIS, to draw the, or deformation of an image, upon the convex surface of a cone.—It is manifest from the former case, that here it is merely required to make a craticular ectype on the superficies of the cone, which shall

appear to an eye duly placed over its vertex equal to the craticular prototype.

Let the base, or periphery, ABCD, therefore, of the cone (*fig. 4.*) be divided by radii into any number of equal parts; and let some one radius be likewise divided into equal parts; and through each point of division draw concentric circles: thus will the craticular prototype be made. With double the diameter AB, as a radius, describe the quadrant EFG (*fig. 5.*) so that the arch EG may be equal to the whole periphery: then this quadrant, duly folded, will form the superficies of a cone, whose base is the circle ABCD. Divide the arch EG into the same number of equal parts as the craticular prototype is divided into; and draw radii from all the points of division. Produce GF to I, so that FI = EG: and from the center I, with the radius IF, draw the quadrant FKH; and from I to E draw the right line IE. Divide the arch KF into the same number of equal parts as the radius of the craticular prototype is divided into; and draw radii through each of the points of division, from the centre I, meeting EF, in 1, 2, 3, &c. Lastly, from the centre F, with the radii, F 1, F 2, F 3, &c. describe the concentric arches. Thus will the craticular ectype be formed, the areolæ of which will appear equal to each other.

Hence what is delineated in every areola of the craticular prototype, being transferred into the areolæ of the craticular ectype, the images will be distorted or deformed; yet an eye raised above the vertex of the cone, at a height equal to that of the cone itself, will perceive them in just proportion.

If the chords of the quadrants be drawn in the craticular prototype, and chords of the four parts in the craticular ectype, all things else remaining the same, you will have the craticular ectype in the quadrangular pyramid.

And hence it will be easy to deform any image, in any other pyramid, whose base is any regular polygon.

Because the eye will be more deceived, if from contiguous objects it cannot judge of the distance of the parts of the deformed image; therefore, these kinds of deformed images are to be viewed through a small hole; and when they are made to appear like the objects which they are intended to represent, by means of a mirror of any particular construction, these anamorphoses are said to be reformed. See MIRROR.

The original author of this ingenious device is not known. Simon Stevinus first wrote upon it, without informing us from whom he acquired it. The principles of it are laid down by S. Vauzelard, in his "Perspective Conique et Cylindrique;" and Gasper Schottus, professing to copy Marius Bettinus, in his description of this piece of artificial magic. Other methods more exact and geometrical than that above described, in which a lamp or candle was used, were afterwards invented, and rules laid down for drawing the requisite figures. Schottus quotes one of those methods from Bettinus, another from Hevignonius, and another from Kircher, which may be seen in his "Magia," vol. i. p. 162, &c. He also gives an account of the methods of reforming pictures by speculums of conical and other figures. The method given by Dr. Smith, (in his Optics, vol. i. p. 250.) is, without doubt, the best; and from this any person may easily make a drawing of the same kind. The same description answers to two mirrors, one of which, *fig. 6.* is convex, and the other, *fig. 7.* is concave. In order, therefore, to paint upon a plane a deformed copy, ABCDEKIHGF, of an original picture, which shall appear regular, when seen from a given point O, elevated above the plane, by rays reflected from a polished cylinder, placed upon the circle,

circle, *lup*, equal to its given base; draw from the point R, which is supposed to be directly under O, the place of the eye, two lines *Ra*, *Re*, which shall either touch the base of the cylinder, or else cut off two small equal segments from the sides of it; as the copy is intended to be more or less deformed. Then taking the eye, raised above R, to the given height RO, somewhat greater than that of the cylinder, for a luminous point, describe the shadow *ackf*, of a square *acxz*, *fig. 8.* or parallelogram standing upright upon its base *ac*, and containing the picture required, any where behind the arc *lup*. Let the lines drawn from R to the extremities and divisions of the base *a*, *b*, *c*, *d*, *e*, cut the remotest part of the shadow in the points *f*, *g*, *b*, *i*, *k*, and the arc of the base in *l*, *m*, *n*, *o*, *p*; from which points draw the lines *lAf*, *mBg*, *nCh*, *oDi*, *pEk*, as if they were rays of light that came from a focus R, and were reflected from the base *lup*; so that each pair, as *lA*, *lR*, produced, may cut off equal segments from the circle. Lastly, transfer the lines *luf*, *mvg*, &c. and all their parts, in the same order, upon the respective lines *lAf*, *mBg*, &c. and having drawn regular curves, by estimation, through the points A, B, C, D, E, through F, G, H, I, K, and through every intermediate order of points; the figure ACEKHF, so divided, will be the deformed copy of the square, drawn and divided upon the original picture, and will appear similar to it, when seen in the polished cylinder, placed upon the base *lup*, by the eye in its given place O.

The practical methods of drawing these images seem to have been carried to the greatest perfection by J. Leopold, who, in the Leipzig acts, for the year 1712, has described two machines, one for images to be viewed with a cylindrical, and the other with a conical mirror. The person, who has this instrument, may take any point at pleasure, and whilst he goes over the outlines of it with one pen, another traces the anamorphosis.

By methods of this kind, groves of trees may be cut, so as to represent the appearance of men, horses, and other objects from some one point of view, which are not at all discernible in any other. This might easily be effected by one person placing himself in any particular situation, and giving directions to other persons, what trees to *lup*, and in what manner. In the same method it has been contrived, that buildings, of circular and other forms, and also whole groupes of buildings, consisting of walls at different distances and with different positions to one another, should be painted so as to exhibit the exact representation of particular objects, which could only be perceived in one situation. Bettinus has illustrated this method by drawings, in his "Apriaria."

In the cloister of the Minims, in the Place Royale, at Paris, there are two anamorphoses traced upon two of the sides of the cloister, one representing a Magdalen, and the other St. John, writing his gospel. They are so managed that when viewed directly, they appear like a kind of landscape, but from a particular point of sight they appear very distinctly, like human figures. These two figures were executed by Nicéron, a Minim, who published a treatise, entitled "Thaumaturgus Opticus," in which he has described the manner of tracing anamorphoses on any surfaces. In tom. iv. of the Memoirs of the Imperial Academy of Petersburg we have the description of a similar anamorphosis, by Mr. Lutman, in honour of Peter II., emperor of Russia. On the subject of this article, see Wolfii Elementa Mathematicos, &c. vol. iii. cap. v. p. 99, &c. Priestley's History, &c. of Vision, &c. p. 93—96.

ANAMSAGAR, in *Geography*, a town of Hindostan, in the county of Vitiapoor, 51 miles east of Baddamy, and 71 south-east of Galgala.

ANANAS, in *Botany*, by some called *nans*, and by others *jayama*, and popularly the *pine-apple*, on account of the resemblance it bears to the cones of pines and firs, is a species of BROMELIA.

ANANAS, in *Natural History*, a species of MADREPORA, in the fourth order of VERMES, *Zoophyta*, the stars of which are angular, convex, and concave in the disk. Linnæus. This kind inhabits the Mediterranean and South American seas, and is often found in a fossil state.

ANANCITIS, in *Antiquity*, a kind of figured stone, otherwise called synochitis, to which superstition ascribed a magical virtue in raising the shadows of the infernal gods.

ANANDRIA, in *Botany*, a species of TUSILAGO.

ANANES, in *Geography*, three small islands in the Grecian Archipelago, about three leagues south-west of the island of Milo.

ANANISABATA, or ANANISAPTA, in *Antiquity*, a magical word inscribed on coins and other amulets, and supposed to have efficacy in preserving the wearer from the plague.

ANANTHOCYCLUS, in *Botany*. See COTULA.

ANANTPOUR, in *Geography*, a town of Hindostan, in the Mysore country, 85 miles north-east of Chitteldroog, and 140 north-north east of Srirangapatam.

ANANUS, the YOUNGER, in *Biography*, a Sadducee, was appointed high-priest of the Jews by Agrippa, the younger, about A. D. 60. Josephus (*Antiq. lib. xx. cap. 8. § 1.*) represents him as fierce and haughty in his behaviour, and extremely resolute and daring; and as belonging to the sect of the Sadducees, who were above all other Jews cruel in their judicial sentences. Upon the death of Festus the Roman governor, and before the arrival of Albinus, appointed to be his successor, Ananus called a council, and bringing before it James, our Lord's brother, and some others, he accused them as transgressors of the laws, and had them stoned to death. Josephus says, that many were offended at this proceeding. Some, he says, went running to meet Albinus, who was coming from Alexandria, and put him in mind, that Ananus had no right to call a council without his leave. Albinus approving of what they said, wrote a very angry letter to Ananus, threatening to punish him for what he had done, and king Agrippa took away from him the priesthood, after he had enjoyed it three months, and put in Jesus, the son of Damnaeus. Dr. Lardner infers from this circumstance, as well as others, that the Jews had not at this time the power of life and death. Works, vol. i. p. 81.

ANANUS, a learned Jewish Rabbi, who flourished about the year 760. He was denied the title of gaon or excellent, though a man of great learning, on account of some material error of which his doctrine was suspected; and the suspicion appears to have been well founded, as he became the reviver and chief of the Sadducean sect, which, after having been long almost extinct, became formidable to that of the Pharisees. Gantz Tzemach David, p. 725.

ANAON PORTUS, in *Ancient Geography*, *Santo Hospitio*, an obscure port, which the author of the "Itinerarius Maritimus," commonly supposed to be Antonine, places between the Portus Herculis and Nicæa. Clavier has confounded it with Avifio. M. d'Anville places it in a small creek, at the extremity of a small peninsula, to the east of Nicæa, and forming to the west the Portus Divula, and to the east the Portus Avifio.

ANAPÆST, ANAPÆSTUS, a foot in the *Greek and Latin poetry*, consisting of two short syllables, and one long, being the reverse of the dactyl.

The word is derived from *ἀναπαύω*, *contra ferio*, because in dancing this measure, the ground was struck in a contrary order from what it was in the dactyl. Whence the Greeks called it *ἀναπαύωτος*. *Dion.* in. p. 74.

Such are the words *ἀναπαύωτος*, *ἀναπαύωτος*.

Hæc Vossius (de *Viribus Rhythm.* p. 56) has said that the English have no perfect anapaest in their language. But Dr. Burney (*Hist. Music.* vol. i. p. 79) observes, that the change is easily confuted by the mere mention of the words *recommend* and *disappoint*.

ANAPÆSTIC, or ANAPÆST, is sometimes used in a substantive sense.

Such is the *anapaestus Aristophanicus*, in Cicero, which is a verse consisting of eight feet, as

“Axena ponti per freta colchos denique delatus adhæsi.”

Vide Cic. in *Orat.* cap. 56. *Fabr. Thef.* in voc. *Anapaestus*.

This is otherwise called *anapaestus ædonarius*.

ANAPÆSTIC, in an adjective sense, something relating to or composed of *anapaests*.

ANAPÆSTIC kind, *genus anapaesticum*, is a sort of verse composed of pure Aristophanic or Parthenaic *anapaests*.

Anapaestic verses are either Aristophanic or Pindaric.

Anapaestic Aristophanicus, called also *Parthenaicus*, consists of three anapaests, and one long syllable, but so as that instead of the first two anapaests, as many spondees may be used.

Its type stands thus :



“Venient cito secula quum jam
Socius calor ossa revifet
Animataque sanguine vivo
Habitacula pristina geslet
Lacrymas suspendite cuncti
Mors hæc reparatio vita est.” *Bona.*

Pindaric Anapaest admits, in the first place, either of an anapaest or a spondee; in the second, only of an anapaest; in the third, of an anapaest or a spondee; in the fourth, either of a spondee or a trochee.

As in the following type :



“In summa pericula venturi
Multos timor ipse mali mittit.”

ANAPAUMENE, in *Ancient Geography*, a fountain of Greece, in the Molossis, which was part of Epirus. It was situated near that of Dodona, and was also denominated “fons Jovis.”

ANAPES, in *Geography*, a town of Flanders, one league from Lille.

ANAPHE, in *Ancient Geography*, an island of the Cretan sea, supposed to be one of the Cyclades to the east of Thera. *Steph. Byz.* says, that it was one of the Sporades. Its first name was *Memliaros*, which it derived from Membliaros, the Phœnician, who, when his relation went in quest of Europa, accompanied him, and settled in the neighbouring island of Thera. It was afterwards called Anaphe, a Phœnician word, which, according to Bochart, signifies shaded and dark, an epithet given to this island, on account of its gloomy and thick forests. But the most commonly received

opinion is, that it owes this name of Anaphe to the Greek word *ἄνα*, to *appear*, from the thunder having on a sudden occasioned it to rise from the bottom of the waters, in order to receive the fleet of the Argonauts, on its return from Celebis, when assailed by a furious tempest. The fable of antiquity is the history of the formation of this island, now called Nansio, which a volcano caused to appear suddenly above the sea, in the midst of a violent agitation of the ætæosphere and the waves, which has happened to some other islands of the Archipelago. In memory of this event was built a temple, mentioned by Strabo, which was consecrated to Apollo Ægletes, or dazzling with light. Slight vestiges of this temple still remain on the place which it occupied, in the south part of the island; and the marble of which it was constructed was taken from a very steep rock, of a terrifying aspect, on whose summit is now seen a chapel, dedicated to our lady of the reed; in modern Greek “panagia kalamitosa.” For a further account of the present state of this island, see NANFIO.

ANAPHYLYSTUS, a small maritime town of Attica, in the tribe of Antiochides, very near Athens, towards the cape Colias, and north-west of CEXORA. It had temples of Pan, Ceres, Venus Colliades, and the goddesses called Genetylides. This place is now called *Limos*.

ANAPHORA, *ἀναφορά*, signifying *repetition*, in *Rhetoric*, a verbal figure, whereby one or more words are repeated in the beginning of several sentences or verses.

This is a lively and elegant figure, and serves very much to engage the attention; for by the frequent return of the same word the mind of the hearer is held in an agreeable suspense till the whole is finished.

Such, *e. gr.* is this of the Psalmist, “The voice of the Lord is powerful: the voice of the Lord is full of majesty: the voice of the Lord shaketh the wilderness.”

“You do nothing,” says Cicero to Catiline; “you attempt nothing, you think nothing, but what I not only hear but also see, and plainly perceive.” This figure is frequently used by way of interrogation, which renders it not only beautiful, but likewise strong and nervous. Thus Cicero, at the beginning of the same speech: “Does neither the night-guard of the palace, nor the city-watch, nor the people’s fear, nor the agreement of all good men, nor the meeting of the senate in this fortified place, nor the countenances and looks of this assembly, at all move you?” And in another of his orations: “What is so popular as peace, which seems to afford a pleasure, not only to beings endowed with sense, but even to inanimate nature? What is so popular as liberty, which even beasts as well as men seem to covet and prefer above all things? What is so popular as ease and leisure, for the enjoyment of which you and your ancestors have undergone the greatest labours?” *Contra Rull.* ii. c. 4. *Ward’s Oratory*, vol. ii. p. 56.

ANAPHORA is used in the *Ancient Medicine*, for the rejection of matter by the mouth.

Hence also we met with the term *anaphorici*, *ἀναφορικοί*, used for those labouring under an *hæmoptoe*, who bring up blood from the lower part of the mouth.

ANAPHORA, among *Ecclesiastical Writers*, denotes the host, or species offered in the *eucharist*.

ANAPHORA is also used to denote the rehearsing of a person’s name from the *DIPTYCHS* in the liturgy.

ANAPHORA is also a title given to those little Syriac liturgies, wherein are contained the prayers after the *osculum pacis*. Ignatius, patriarch of the Maronites, enumerates forty of these anaphoræ.

ANAPHORA, in *Astrology*, denotes the second house, or that

that part of heaven which is thirty degrees distant from the HOROSCOPE.

The term anaphora is sometimes also promiscuously applied to some of the succeeding houses; as the second, fifth, eighth, and eleventh. In this sense anaphora amounts to the same with *epanaphora*, and stands opposed to *cataphora*.

ANAPHORA is also applied by some to the oblique ascensions of the stars.

ANAPHRODISIA, from *ανα* and *Αφροδίτη*, *Venus*, denotes impotency in respect of venery. Some also use it for a want of desire or inclination to the sex.

In this sense the academists *Natura Curiosa* give an extraordinary instance of this kind in a person otherwise healthy and robust. Eph. Acad. N. C. Dec. i. ann. 8. Obs. 94. See IMPOTENCY.

ANAPHUS, in *Entomology*, a species of PAPHILIO, in the division *Plebeii Urbicolæ*, that inhabits Surinam. It has no tail, and is uniformly brown, except the apex of the lower wings, which is yellow. Fabricius.—The antennæ are hooked at the end.

ANAPHYSEMATA, from *ανα*, and *φυω*, *I send forth*, in some *Ancient Writers*, denote winds issuing from under ground, at the clefts or apertures thereof.

These are sometimes called by later writers *σφογαι*.

ANAPLASIS, from *ανα* and *πλασσω*, *I form*, in *Surgery*, the complete restitution of a broken bone, so that the two ends meet, and close exactly together. This is the same with what is otherwise called *diaplysis*.

ANAPLASIS also signifies a re-nutrition of the extenuated flesh.

ANAPLEROSIS, in the general sense, denotes REPLETION. Anaplerosis is more particularly used to denote that part of surgery whereby things wanting are supplied.

In which sense anaplerosis amounts to the same with what we otherwise call apposition, or PROSTHESIS.

ANAPLEROSIS, in the *Civil Law*, is a name which some give to the four last books of Justinian's Code.

ANAPLEROTICS, from *αναπλερωω*, *I fill up*, in *Medicine*, such remedies as incarnate and fill up ulcers and wounds with new flesh.

Anaplerotics are the same with what we otherwise call INCARNATIVES.

ANAPODARI, in *Geography*, a river of the island of Candia, which rises at Castell Bonifacio, runs near Castell Belvedere, and discharges itself into the sea between Cape Matola and Castell de Girapetra. The ancients called it *Cataractus*.

ANAPODOPHYLLUM, in *Botany*. See PODOPHYLLUM.

ANAPUIA, in *Geography*, a province of Venezuela, in South America, towards the mountains of St Peter, and the source of the Buria.

ANAPUS, or ANAPIS, in *Ancient Geography*, the name of a river of Sicily, which ran from west to east at the distance of about two miles from Ortygia, and somewhat less than a mile and a half from Neapolis, and discharged itself into the great harbour of Syracuse. This stream, which is only 24 feet wide, and 12 or 15 deep at its mouth, flows, in a serpentine course, through a small extent of country, which, though slightly elevated in its south or south-western side, on the north and north-west consists of an extensive marshy plain. This plain lying between the river and the city, is terminated by two fens or moors, the one called Syrac, whence the city was named, and the other Lyfimela. Between the Anapus and the promontory of Plenyrum, was situated the little suburb of Olympia, surrounding the site of the ancient temple of Jupiter Olympus, built upon an eminence, and bounded

on either side by the vast Lyfimelian marshes, extending from the head of the great harbour, half covered with water in the vernal months, and exhaling, under an almost vertical sun, the most unwholesome and pernicious vapours. To this river the ancients gave the name of ALPHEUS.

ANAPUS was also a river of Illyria, which ran near Liffus.

ANAPUS was also a river of Epirus, in Chaonia. Thucydides reckons So Italia from this river to Stratos, or Stratus, a considerable place of Acarnania.

ANAQUITO, in *Geography*, a country of America in Peru and in the province of Quito.

ANARA, in *Ancient Geography*, a town of India, on this side the Ganges, according to Ptolemy.

ANARACI, a people of Scythia, on this side Mount Imaus, according to Ptolemy.

ANARCHI, people of Scythia, placed by Ptolemy below the Agathyrsi.

ANARCHI MONTES, mountains of Scythia, forming part of the chain of Imaus.

ANARCHI, in *Antiquity*, a name given by the Athenians to four supernumerary days in the year, during which they had no magistrates.

The Attic year was divided into ten parts, according to the number of tribes, to whom the presidency in the senate fell by turns.

Each division consisted of 35 days; what remained after the expiration of these to make the lunar year complete, which, according to their computation, consisted of 354 days, were employed in the creation of magistrates, and called *αναρχοι ημεραι*, and *αρχαιεστια*.

ANARCHY, derived from the Greek privative *α*, and *αρχη*, *principality*, the want of government in a nation, where no supreme authority is lodged, either in the prince or other rulers; but the people live at large, and all things are in confusion.

All kinds of states are subject to anarchies. We read of civil anarchies, ecclesiastical or spiritual anarchies, and even anarchies in the republic of letters.

Anarchy is supposed to have reigned after the deluge, before the foundation of monarchies. We still find it obtain in divers parts, especially of Africa and America; *e. gr.* among the Itinois, who are observed by travellers to live in a perfect independency of any superior; among the Californians, where every family makes its own laws as well as religion; in Chili, where every master of a family is a king; in the Marian islands, where neither prince nor law is known, but every person governs himself according to his own will; and to mention no more, among the Hottentots, where the only resemblance of government is, that in each neighbourhood, the eldest is the first in honour, and his advice chiefly followed, not from any civil authority he is vested with, but on account of his superior experience.

Some extend the idea of anarchy farther, so as to make it comprehend all the more popular governments. In this sense anarchy amounts to much the same with DEMOCRACY. Hobbes, in this sense, calls the Roman commonwealth an anarchy.

It has sometimes been controverted which of the two is best, a state of anarchy, or of tyranny and arbitrary power. This controversy, however, does not appear to be of any great use; it is of little purpose to determine which is best, since a state of anarchy, naturally, nay, necessarily, paves the way for despotism; and confusion is always the parent of oppression.

ANARCHY is also applied to certain troublesome and disorderly

disorderly periods, even in governments otherwise regular. In Germany, the interval from the election of Richard, duke of Cornwall, to that of duke Rud. of Hapsburg, is commonly called the anarchy, or interregnum.

In England, the period between the death of Cromwell and king Charles's Restoration, is commonly represented as an anarchy. Every month produced a new scheme or form of government. Enthusiasts talked of nothing but annulling all the laws, abolishing all writings, records, and registers, and bringing all men to the primitive level. No modern nation has been more subject to anarchies than Poland; where every interval between the death of one king, and the election of another, was a perfect picture of confusion, inasmuch that it became a proverb among that people, Poland is governed by confusion.

The Jewish history presents numerous instances of anarchies in that state usually denoted by this phrase, *that in those days there was no king in Israel, but every man did that which was right in his own eyes*, which is a just picture of an anarchy. The first anarchy we read of in that commonwealth, is that which ensued on the death of Joshua, who leaving no successor, the government devolved to the elders of the tribes, who ruled each according to his own will. After the death of these elders the anarchy became complete.

ANARGYRI, in *Ecclesiastical History*, is an appellation given to certain saints in the Greek church, who having been physicians, gave not only their advice but their remedies gratis. They are also called *argentinos*.

ANARGYRUS, from α and $\alpha\gamma\gamma\upsilon\sigma\iota\omicron\nu$, money, in *Ancient Writers*, denotes a person without money, though otherwise sufficiently accommodated with land and other effects.

In a like sense we sometimes also meet with the word anargyria, used by lawyers for the condition of a person without ready money.

Mart. Phil. Fabricius has a dissertation *De Exceptione Anargyriae*.

ANARHAPHE, from $\alpha\alpha$ and $\rho\alpha\phi\eta$, future, in *Surgery*, denotes a kind of future or retraction of the upper eye-lid, when relaxed and hanging over the eye.

This is by some also called *futura blepharica*, by others *abreviatio, contractio, collectio, or suspensio superioris palpebrae*. It is used in the *phalangosis, ptosis, or chalasis*; where the sight is obstructed by a *prolapsus* of the part, or the eye-lid itself is too thick beset with bristly hairs both within and without.

ANARHICHAS, in *Ichthyology*, a genus of the order Apodes. The head is obtuse, fore teeth in each jaw conic, large, divergent, six in number or more grinders in the lower jaw, and palate rounded: Six rays in the gill membrane. Body roundish, tail fin distinct. Linn. Gmel.—The species of this genus are LUPUS, MINOR, and PANTHERINUS, which see.

ANARIA, in *Ancient Geography*, *Ischia*, an island south-east of Baia. Augustus gave it to the inhabitants of Neapolis, in exchange for the island of Caprae. It was also called Pythecusa.

ANARIACA, a town which, according to Strabo, was near the Caspian sea. It is supposed to have been situated between Albania and Hircania.

ANARIS MUNDI PROMONTORIUM, was situated, according to Ptolemy, in the island of Taprobana.

ANARIUM, a town of Asia, in Greater Armenia, according to Ptolemy.

ANARPI, a people placed by Ptolemy in Germany.

ANARRHINON, in *Botany*, a name given by some of the ancients to the plant called by others $\lambda\upsilon\chi\eta\iota\varsigma$ *agria*, and by others *antirrhinum*. Pliny tells us, that this plant

resembled flax, that it had scarce any root; that its flower was the colour of the hyacinth, and its fruit resembled the nose of a calf. It is from this resemblance that we at this time call the plant *calves' snout*. Dioscorides says, that it was like the *anagallis*.

ANARTES, or ANARTI, in *Ancient Geography*, a people who inhabited the north-west part of Dacia, according to Caesar and Ptolemy.

ANARTHRA, from α and $\alpha\epsilon\theta\epsilon\rho\alpha$, joint, in *Natural History*, a class of naked insects, distinguished from all others by having neither wings nor limbs. To this class, belong all kinds of worms and leeches.

ANARTOPHRACI, in *Ancient Geography*, a people placed by Ptolemy in Sarmatia, adjacent to the Ombrones, in European Sarmatia.

ANAS, now called GUADIANA, a river of Spain in Bætica.

ANAS, in the Linnæan system of *Ornithology*, the name of an extensive genus of birds, of the order ANSERES, and known in England by the general names of SWANS, GEESE, and DUCKS. The Linnæan character of this genus is taken from the form of the bill and tongue; the bill being convex, obtuse, and the edges of both mandibles beset with lamellated teeth: the tongue ciliated and obtuse. Linn. Gmel. To this concise general distinction some authors add, that the bill is strong, broad, depressed, and commonly furnished at the end with an additional piece or nail; nostrils small and oval; tongue broad, and fringed at the edges, near the base; toes four in number, three being placed before, and one behind, and the middle one longest. Latham. Gen. Syn.

The species of this genus, according to the latest authorities of Linnæus, Latham, Gmelin, &c. are,

<i>Acuta</i> , pintail duck	American teal
<i>Adunca</i> , hooked bill duck	<i>Casarca</i> , ruddy goose
<i>Egyptiaca</i> , Egyptian goose	<i>Cinerea</i> , ash-coloured, or loggerhead goose
<i>Africana</i> , African teal	<i>Circia</i> , summer teal
<i>Albeola</i> , buffel-headed duck	<i>Clangula</i> , golden-eyed duck
(Latham).	<i>Clypeata</i> , shoveller
<i>Allicans</i> , brown-necked duck	<i>Coromandeliana</i> , Coromandel teal
<i>Albifrons</i> , white-fronted goose	<i>Coscoroba</i> , Chili goose
<i>Alexandrina</i> , Alexandrian duck	<i>Crecca</i> , common teal
<i>Americana</i> , American duck	<i>Cristata</i> , crested duck
<i>Anser</i> , wild goose, or grey-lag	<i>Curvirostra</i> , curve-billed duck
<i>Antarctica</i> , Antarctic goose	<i>Cygnoides</i> , Chinese goose
<i>Arabica</i> , Arabian teal	<i>Cygnus</i> , wild or whistling swan
<i>Arborea</i> , black-billed whistling duck	<i>Damiatia</i> , Damietta duck
<i>Atrata</i> , black swan (Philips)	<i>Difcors</i> , blue-winged teal
<i>Autumnalis</i> , red-billed whistling duck	<i>Dispar</i> , western duck
<i>Babauensis</i> , Ilithera duck	<i>Domestica</i> , common tame duck
<i>Balbul</i> , cahira duck	<i>Dominica</i> , St. Domingo duck
<i>Beringii</i> , Bering goose	<i>Dominicana</i> , Dominican duck
<i>Bernicla</i> , Brent, or Brand goose	<i>Erythropus</i> , Bernacle goose
<i>Borealis</i> , Gulaund duck	<i>Erythrorhyncha</i> , crimson-billed duck
<i>Boschas</i> , wild duck	<i>Falcaria</i> , falcated duck
<i>Brasilienfis</i> , Mareka duck	<i>Ferina</i> , pochard, or red-headed wigeon
<i>Bucephala</i> , buffel-headed duck (Gmel.)	<i>Ferruginea</i> , ferruginous duck
<i>Cerulefcens</i> , blue-winged goose	<i>Formosa</i> , Baikal teal
<i>Cana</i> , grey-headed goose	<i>Fuligula</i> , tufted duck
<i>Canadensis</i> , Canada goose	<i>Fulva</i> , Mexican pochard
<i>Capensis</i> , Cape wigeon	<i>Fusca</i> , velvet duck
<i>Carolinensis</i> , Carolina, or	<i>Fuscifcens</i> , brown duck
	<i>Galericulata</i> , Chinese teal
	<i>Gambensis</i> ,

<i>Gambensis</i> , spur-winged goose	<i>Mollissima</i> , eider duck
<i>Gaittoir</i> , Gattair duck	<i>Monacha</i> , white and black variegated duck
<i>Georgica</i> , Georgia duck	<i>Montana</i> , mountain duck
<i>Glacialis</i> , long-tailed duck (Latham)	<i>Moschata</i> , Muscovy duck
<i>Glaucion</i> , grey-headed duck	<i>Nigra</i> , black duck
<i>Glocians</i> , bimaculated duck	<i>Nigricollis</i> , black-necked swan
<i>Gmelini</i> , Russian teal	<i>Nilotica</i> , Nilotic duck
<i>Grandis</i> , great goose	<i>Novæ Hispaniæ</i> , Mexican duck
<i>Hina</i> , Hina teal	<i>Novæ Seelandiæ</i> , New Zealand duck
<i>Histrionica</i> , harlequin duck	<i>Nyræa</i> , Tannain tufted duck
<i>Hybrida</i> , Hybrid swan	<i>Obscura</i> , dusky duck
<i>Hyemalis</i> , long-tailed duck (Edwards)	<i>Olor</i> , mute swan
<i>Hyperborea</i> , snow goose	<i>Orientalis</i> , Muscovy gander (Gmelin)
<i>Jacquini</i> , chestnut-coloured duck	<i>Penelope</i> , wigeon, or whim
<i>Jamaicensis</i> , Jamaica shoveller	<i>Perispicillata</i> , black duck
<i>Indica</i> , barred-headed duck (Latham)	<i>Pisina</i> , painted goose
<i>Islandica</i> , Iceland duck	<i>Poecilorhyncha</i> , spotted-billed duck (Latham)
<i>Kagolka</i> , Kagolka duck	<i>Querquedula</i> , garganey
<i>Kekuschka</i> , Kekuschka duck	<i>Regia</i> , white-collared blue duck
<i>Labradorica</i> , pied duck	<i>Rubens</i> , red-breasted shoveller
<i>Leucephala</i> , white-headed duck	<i>Rufa</i> , rufous-necked duck
<i>Leucoptera</i> , bustard goose	<i>Ruficollis</i> , red-breasted goose
<i>Lurida</i> , lurid duck	<i>Rufina</i> , red-crested duck
<i>Madagascariensis</i> , Madagascarean teal	<i>Ruslica</i> , little brown duck
<i>Magellanica</i> , Magellanic goose	<i>Scandiaca</i> , Lapmark duck
<i>Malacorhynchos</i> , soft-billed duck	<i>Segetum</i> , bean goose
<i>Manillensis</i> , Manilla teal	<i>Sirfair</i> , Sirfair duck
<i>Marilla</i> , scaup duck	<i>Spectabilis</i> , king duck
<i>Marsa</i> , ural duck	<i>Spinosa</i> , spinous-tailed teal
<i>Melanocephala</i> , black-headed swan	<i>Sponsa</i> , summer duck
<i>Melanotos</i> , black-backed goose	<i>Stelleri</i> , western duck
<i>Melanura</i> , black-tailed duck	<i>Strepera</i> , gadwall, or grey
<i>Mexicana</i> , Mexican duck	<i>Superciliosa</i> , supercilious duck
<i>Minuta</i> , minute duck	<i>Tardona</i> , shieldrake
	<i>Torquata</i> , ringed goose
	<i>Torrída</i> , torrid duck
	<i>Variiegata</i> , variegated goose
	<i>Viduata</i> , Spanish duck; which see respectively.

ANASARCA, from *ana* and *σαρξ*, *flesh*, in *Medicine*, a sort of universal dropsy, wherein the whole or considerable part of the body is stuffed or bloated with watery fluid.

This distemper is sometimes also called *catasarca*, sometimes *hypofarcidium*, sometimes *epifarcidium*, sometimes *aqua inter cutem*, or *intercus*, because the humour spreads itself through the flesh. Serenus Samonicus elegantly calls it *lymphaticus error*; Albucasis calls it a dropsy by infiltration.

Prænatural collections of water in any part of the body, except the urinary bladder, are called DROPSIES. Some of these are confined to particular cavities, and take their name from that of the cavity, as, *hydrothorax*, or a dropsy in the chest; *ascites*, a dropsy of the ABDOMEN, &c. but anasarca may take place in any part of the body where there is *cellular membrane*. Dr. Cullen places it in his third class, *CACHEXIÆ*, order, *Intumescentiæ*, aquosæ, and admits several species of it, depending on the remote cause. The most usual and general Cause of anasarca is debility, whether induced by fatigue, or watching without lying down, by hæmorrhage, by eruptive fevers, or by deficient or watery food. It is sometimes believed to arise during pregnancy, from the

pressure of the uterus on the veins which return the blood from the lower extremities.

The *Essential Character* of this disease is founded on the swelling being pale, soft, and leaving a pit after pressure with the fingers.

Symptoms. As anasarca affections differ much in degree or severity from a slight swelling of the feet and ankles towards night, to a general diffusion of water throughout the cellular membrane of the whole body and extremities; so the symptoms or degrees of distress experienced by the patient are greatly diversified. That which first attracts his attention is a stiffness of the ankles, after remaining long in the erect posture. This increases daily till the feet, legs, and thighs become so large, that the skin seems in danger of bursting. When the disease approaches towards this magnitude, the water shifts its place with the posture of the body; so that after lying in the horizontal posture all night, the swelling of the legs will be much diminished, while that of the trunk, arms, and face will be increased. In this stage the patient often experiences *dyspnea* and thirst, with loss of appetite; the secretion of urine is diminished; the *scrotum*, or *labia* are so distended, that walking becomes impracticable, when the swelling and stiffness of the feet alone would not have rendered it so. This is the usual progress of anasarca; but it sometimes supervenes so suddenly, that the whole body will partake of the swelling in twenty-four hours. There is no doubt that it may often exist alone, without any other species of dropsy; we however very commonly find it combined with HYDROTHORAX, or ASCITES; and it is then of course more difficult of cure. The *prognosis* is generally unfavourable, in old people especially, or those who have injured their constitution by the abuse of spirituous liquors. Where the affection is slight, and brought on by sitting up for several days and nights, in a good constitution we may always expect a cure.

The *treatment* should be adapted to the state and degree of the disease. In slight affections of short standing, flannel rollers to the feet and ankles, with bark or steel internally, will generally succeed. In severe cases we attempt the cure on the following plan, *viz*.

1. We obviate all causes of debility by diet, air, and exercise; and we endeavour to restrain all debilitating evacuations.

2. We should then employ the means which are found most successful in evacuating the collected fluid. The first of these is to promote its absorption; which is done,

A. By the *pressure* of bandage and friction, with or without mercurial ointment.

B. By *Emetics*; especially hydrarg. vitriolatus, cuprum vitriolatum, pulvis antimoniæ, and, above all, elaterium in powder.

C. By *Purgatives*, such as calomel, gamboge, elaterium and jalap combined with crystals of tartar, nitre, or kali acetatum. The absorption, in this case, most probably, is a consequence of the increased excretion from the intestines.

When the aqueous fluid is absorbed and carried into the blood, the secretion by the kidneys is commonly increased, by which it is carried out of the body. But if this should not take place, we have recourse to those medicines called

D. *Diuretics*. Whether these exert their action on the kidneys alone, or whether they produce their effect by promoting the activity of the absorbent system, is not ascertained. The most successful diuretics are mercury, whether introduced by friction or taken internally; and it appears to be a good preparation

tion for the employment of all other remedies of this class. Squills, recent or dried, or an infusion of them in Lisbon wine; the tincture of digitalis, which being a medicine of great power, requires diligent watching; kali saturated with vinegar of squills; the juice of leeks: the extract of broom tops; the infusion of juniper berries with sweet spirit of nitre, infusion of tobacco, &c. &c. The *doses* of these medicines are not set down, as practitioners know them, and they are too powerful to be prescribed by others. If these remedies fail of producing the desired effect, and the skin of the legs, scrotum, &c. seems in danger of burbling, we may have recourse to punctures. These should be made in depending parts, that the water may drain off more freely, and very small, on account of the danger of gangrene, which is a frequent consequence of large and deep incisions.

3. When by such means as these we have evacuated the water, or a great part of it, we must attempt to invigorate the system by bark, steel, bitters, riding, sea bathing, and a generous diet.

Dr. Dover's cure for an anasarca is an electuary composed of steel prepared with sulphur and crude antimony, each an ounce; *diagridium*, four ounces; make a fine powder of these; then add as much of any syrup as will make a soft electuary.

ANASCHOUADI, in *Botany*. See ELEPHANTOPUS.

ANASSA. See BROMELIA.

ANASSAS, in *Natural History*, the name of a fruit very common in Guinea, and in some other parts of Africa. It is very beautiful to the eye, and not less agreeable both to the taste and smell, and is by some accounted the finest fruit in the world. The descriptions we meet with of it are very imperfect; but as there is nothing in them that contradicts its being the pine-apple, it may be that fruit, and if so, it deserves all the praise that is given it. See BROMELIA.

ANASSUS, or ANAXUS, in *Ancient Geography*, a river of Italy, in the territory of Venice, now the *Piave*. According to M. d'Anville, it runs from the north to the south, and falls into the bottom of the gulf, to the west of Aquileia, near Muranum.

ANASTAMIA, in *Geography*, a considerable sea-port town of Japan, the principal commerce of which is wood.

ANASTASIA, in *Ancient Geography*, a town of Mesopotamia, nearly south of Nisibis. It was for a long time a small place known by the name of Dara. When the Persians and Romans concluded a treaty, the emperor Anastasius fortified Dara, enlarged and beautified it, and called it Anastasia.

ANASTASIOPOLIS, a name given to five cities; one in Syria, another in Phrygia, a third in Caria, a fourth in Galatia, and a fifth in Thrace.

ANASTASIS, a Greek word adopted into the English language, which denotes a resurrection.

Chiffet has given us a dissertation on Childeric's tomb, under the title of *Anastasis Childerici*. Truer has published the figure of a man and woman in the ancient German habit, as found in an ancient urn, under the title of *Anastasis veteris Germani Germanaque Faminae*.

ANASTASIS, among *Ancient Physicians*, denotes a rising up to go to stool. It likewise signifies a migration of humours, when expelled from one place and obliged to remove to another.

ANASTASIUS I. in *Biography and History*, emperor of the east, was born at Duras, in Illyricum, A. D. 430; and, from being one of the officers of the great chamberlain,

called *Silentiarii*, and before he had obtained the rank of senator, was advanced to the empire, A. D. 491. His promotion was owing to the interest and influence of Ariadne, the widow of Zeno, who prevailed upon the senate to acknowledge Anastasius, in opposition to the claims of Longinus, the brother of Zeno, as his successor. As soon as he had attained this dignity he married Ariadne, being then in the 60th year of his age. Such was the estimation in which he was generally held, on account of his temperance and integrity, before his advancement, that, upon his receiving the purple and diadem in the circus, the people, applauding his promotion, exclaimed with one voice, "Reign, Anastasius, as you have lived." The first act of his reign confirmed their expectations; for he immediately remitted whatever was due to the treasury, and entirely abolished the invidious tax, called the *CHRYSARGYRUM*. He also expelled all informers from Constantinople, and put a stop to the enormous abuse, introduced by his predecessor Zeno, of expelling to sale all public offices, and bestowing, to the great oppression of the people, the best governments on the highest bidders. The tranquillity of his reign, though thus popular at its commencement, was soon interrupted by the rebellion of Longinus and the Isaurians, who, seizing the arms and money lodged by Zeno in a fort of Isauria, were enabled to raise and equip an army of 150,000 men. Conon, bishop of Apamea, in Syria, abandoning his flock, joined his countrymen, and became one of the ringleaders of the revolt. The emperor, however, soon collected a force, which, under the conduct of two of the most renowned generals of that age, *viz.* John, the Scythian, and John, surnamed Gibbus, or the lurch-backed, encountered the rebels in the vicinity of Cocytea, in Phrygia, cut off a great number of them, and obliged the rest to seek refuge among the inaccessible mountains of Isauria, where they maintained themselves for six years, notwithstanding the utmost efforts of the best generals of the empire. In the following year the emperor, whose temper was naturally avaricious, deviated from the liberal plan with which he commenced his reign, and laid a heavy tax on the inhabitants of Constantinople, called *evagrius chrysetelia*, which, being unexpected, incensed them to such a degree, that they resorted to arms, demolished the emperor's statues, and dragged them through the chief streets of the city, together with those of the empress Ariadne, uttering very injurious invectives against her and Anastasius. This tumult was no sooner suppressed than it was succeeded by others equally mischievous and dangerous; in one of which the emperor narrowly escaped being murdered in the circus by the populace, because he refused to release some prisoners who had been concerned in a riot. In 499 the Bulgarians invaded Thrace, and defeated the Romans; and in 502 the Persians entered Armenia with a powerful army, took Amida, pillaged the town, and put most of the inhabitants to the sword. In the mean time Anastasius dispatched a strong force against the enemy, which was defeated. However, in the following year, Amida was again besieged, and upon the conclusion of a truce between the Romans and Persians, the city was restored to the former, on condition of their paying to the king of Persia fifty talents. This truce between the two empires was concluded A. D. 505. About this time, Mondo, a Goth, having settled, with many of his countrymen, in some uninhabited places beyond the Danube, seized on a fortress called Herta; and from hence, by frequent incursions into the Roman territories, continued to harass the subjects of the empire, and assumed the title of king. Anastasius dispatched against him Sabinianus, at the head of 10,000 chosen men; and this circumstance obliged Mondo to seek the favour of Theodoric, the Gothic king

of Italy, who had the year before reconquered Pannonia, and recovered Scrinium out of the hands of the Gepidae. Mondo, by this alliance with Theodoric, was enabled to defeat Sabirianus in a pitched battle, near Margus, in Lower Dacia, and forced him to take refuge in the castle of Nato. The consequence of these hostilities was a misunderstanding between Anastasius and Theodoric. Such were the dangers that threatened Constantinople and the adjacent country, that Anastasius was obliged to betray the impotence of his arms by building a bulwark, called the *long wall*, and the *wall of Anastasius*, of which the Byzantine historians make frequent mention. This wall was distant from Constantinople about 40 miles, and extended about 60 miles from the Propontis to the Euxine, inclosing not only the metropolis, but the city of Selymbria, and the neighbouring country, which was a cultivated garden, with an incredible number of stately villas and houses of pleasure, richly furnished and adorned. It was 20 feet broad, and defended by towers at small distances from each other, by which means the inhabitants, upon the shortest warning, had an opportunity of putting themselves in a posture of defence, and of easily repulsing the barbarians. He likewise caused the city of Daras, a frontier town towards Persia, to be repaired and fortified, in order to prevent the Persians from invading the empire on that side. The other difficulties with which Anastasius struggled were inconsiderable, compared with those in which he was involved by a religious war, the first that disgraced the Christian name. The emperor, who was a zealous patron of the doctrine of Eutyches, abolished the orthodox addition, "who was crucified for us," that had been made by the devotion of Antioch to the "Trifagion," *i. e.* thrice holy, "Holy, holy, holy, Lord God of hosts," which was a hymn used in public worship. This alteration occasioned a violent tumult, in which many persons lost their lives; and the emperor was compelled to take refuge in his galley, till the orthodox patriarch, Macedonius, had pardoned and interceded for him. Macedonius was afterwards banished, and upon his exile the sedition was again renewed; the statues of the emperor were broken, and his person was concealed in a suburb, till, at the end of three days, he ventured to implore the mercy of his subjects. Accordingly Anastasius, without his diadem, and in the posture of a suppliant, appeared on the throne of the circus, and was happy to reconcile himself with his people by the sacrifice of two unpopular ministers who were condemned to the lions. These furious but transient seditions were encouraged by the success of Vitalian, one of the emperor's generals, who, espousing the cause of Macedonius, and the other orthodox bishops, persecuted by Anastasius, approached Constantinople with a numerous army of Huns and Bulgarians, and threatened to depose the emperor, if the banished bishops were not restored, and the Eutychians expelled. As the emperor hesitated in complying with this demand, Vitalian, the champion of the catholic faith, depopulated Thrace, besieged Constantinople, and exterminated 65,000 of his fellow Christians, till at length he obtained the recall of the bishops, the satisfaction of the pope, and the establishment of the council of Chalcedon. In consequence of this treaty, which Anastasius was compelled to sign, A. D. 514, Vitalian withdrew from Constantinople, and disbanded his troops. Pope Symmachus, it is said, engaged in this quarrel, and, by excommunicating Anastasius, set the first example of the employment of spiritual thunder against sovereigns. Anastasius, delivered from his fears, renewed his persecution of the catholics; but he did not long survive the humiliating act to which he was obliged to submit. In the year 518, the 88th year of his age, and the

28th of his reign, he suddenly closed his life, being as much hated and reproached by his subjects in his latter years, as he had been beloved and extolled in his earlier days. By the Catholic historians he is charged with avarice and cruelty, and almost all the crimes that could disgrace a sovereign; but his want of orthodoxy, which, in their judgment, was one of his greatest crimes, might possibly induce them to exaggerate his other bad qualities. The vast treasure which he possessed at his death was accumulated by the sale of public offices, and by sharing with his governors the spoils of an oppressed people. *Anc. Un. Hist.* vol. xiv. p. 443—451. *Gibbon's Hist.* vol. vii. p. 129. vol. viii. p. 314.

ANASTASIUS II. whose proper name was Artemius, was advanced by the free voice of the senate and people, to the throne of Constantinople, A. D. 713, from the low condition of a secretary to his predecessor Philippicus, who had been deposed.

He was a man of learning and prudence, and had been from his youth employed with singular success in the management of public affairs. In the beginning of his reign he appointed Leo, the Isaurian, a person of great military experience, commander in chief of all his forces, and sent him with a powerful army to the frontiers of Syria, in order to protect Asia Minor against the incursions of the Saracens. He also prepared for defeating their design of laying siege to Constantinople by a naval armament, by repairing the walls, by filling the public granaries, and by ordering those citizens, who had not laid up provisions for three years, to quit the city. When news was brought that the enemy's fleet had sailed to Phœnicia, he ordered his to assemble at Rhodes; but the admiral by his endeavours to maintain strict discipline, occasioned a mutiny, and lost his life. The seamen, dreading the punishment which they deserved, and knowing that they could not avoid it, openly revolted, declared Anastasius unworthy of the empire, and obliged Theodosius, a person of mean extraction, and receiver of the revenue at Adramyttium, to accept of the purple. Anastasius, when he heard of this revolt, fled to Nice; and Theodosius hastened to besiege Constantinople, which he reduced after a defence, on the part of the garrison, for six months. Anastasius, being promised his life by the conqueror, renounced all claim to the empire; and, assuming the habit of a monk, was banished to Thessalonica, after he had enjoyed the title of emperor about two years. In 719, whilst Leo was emperor, Anastasius quitted his retirement, and induced the Bulgarians to acknowledge and support his claim to the crown. With a numerous army of these barbarians he laid siege to Constantinople; but his followers, being disappointed in their expectation of easily becoming masters of the city, seized the unfortunate Anastasius, and delivered him up to the emperor, who put him and his accomplices to death. *Anc. Un. Hist.* vol. xv. p. 35, &c. *Gibbon's Hist.* vol. ix. p. 24. vol. x. p. 8.

ANASTASIUS, pope, succeeded Syricus in the papal chair, A. D. 398. During his pontificate a dispute arose between Jerom and Rufinus, occasioned by the following circumstance. Rufinus, being an admirer of Origen, had published a Latin translation of his "Periarchon," or treatise of principles, which was much read at Rome, and served to disseminate the distinguishing sentiments of this celebrated father. Having published this translation, without any animadversions on the part of Syricus, he left Rome, and returned to Aquileia, where he was presbyter. Upon the elevation of Anastasius, Marcella, a Roman matron, complained to the new pope of the prevalence of new doctrines, requested his interposition for preventing the evil, and accused

Rufinus

Rufinus is the author of the translation to which it was owing. Anastasius for some time declined either proceeding a second Revision, or certifying his translation; but at length Jerom, in a new version of the work, undertook to prove that several opinions of Origen were heretical, and as such ought to be condemned by the church. He also inveighed against Rufinus, suggesting, that he had translated the work of Origen merely for the purpose of propagating the errors which it contained. A council was convened, which condemned the errors of Origen, and Origen himself as a heretic, and forbade all persons, under the jurisdiction of several of the bishops, who were assembled, either to read or to retain in their possession, any of his works. Origen being thus condemned as an heretic, about 150 years after his death, Anastasius, at the instigation of Marcella, and some of Jerom's friends, summoned Rufinus to Rome, and demanded an account of his faith. Rufinus sent a confession of his faith to Anastasius, but it was not satisfactory; and the pope was at last prevailed upon to separate himself from communion with him. Anastasius has no other claim to notice than that of being a zealous defender of the catholic faith. He died in 402; and his epistle to John, bishop of Jerusalem, who had written to him in behalf of Rufinus, is extant. Fabr. Bib. Græc. lib. v. c. 35. § 8. Dupin's Ecc. Hist. vol. iii. p. 58. Bower's Lives of the popes, vol. i. p. 277. &c.

ANASTASIUS II. pope, was the son of a Roman citizen, and succeeded Gelasius, A. D. 496. He was more peaceably disposed than either of his two predecessors, and was desirous of effecting a reconciliation between the see of Rome and that of Constantinople, which had for some time been at variance. With this view he wrote a humble and respectful letter to the emperor Anastasius, and sent two bishops, accompanied by Festus the patrician, as legates, to execute his purpose. Although the bishops were well received by the emperor; he chose to confer with Festus rather than with them; and he contrived to persuade him to use his interest with the pope for reconciling the eastern and western churches, upon such terms as he thought proper to propose. The pope himself was disposed to acquiesce; and to allow the name of Acacius to remain in the Diptychs, as well as to receive and sign the HENOTICON; but this condescension on his part gave great offence to the Roman clergy. The church of Alexandria, availing themselves of the peaceable disposition of the pope, sent deputies to Constantinople in order to negotiate a reconciliation with Rome. But these pacific measures were defeated by the premature death of Anastasius. Whilst the legates were on their return to Italy, and before they reached Rome, the pope died, A. D. 498; and this unpropitious event was a great disappointment and mortification to Festus, who, depending on his inclination to peace, and the confidence reposed in him by the pope, had entertained hopes of soon restoring the ancient harmony between the east and west, and of being himself instrumental in accomplishing so desirable an object. The disposition and conduct of Anastasius, who was ready to sacrifice even the pretensions of his see to the welfare of the church, however laudable in themselves, were no recommendation to the honours that were conferred in that age of ignorance and bigotry. He was not thought worthy of a place in the calendar; and his memory has been aspersed, as if he were an enemy to the Catholic faith; and his death, before he had completed two years of his pontificate, has been represented by Platina and others as a judgment from heaven. His letter to the emperor, and another to Clovis, the first Christian king of the Franks, congratulating him on his conversion to the Chris-

tian religion, are still extant in the Books of councils. Cave's Hist. Lit. vol. i. p. 465. Fabr. Bib. Græc. lib. v. c. 35. § 8. Bower's Hist. Popes, vol. iii. p. 236, &c. Dupin, Eccl. Hist. vol. iv. p. 181.

ANASTASIUS III. pope, was by birth a Roman, and succeeded Sergius, A. D. 911. This pope, at the request of Berengarius, king of Italy, sent many rich ornaments to the church of Pavia, and granted to the bishop of that city the use of a canopy, the privilege of riding a white horse, with the cross carried before him, and of sitting in all councils at the pope's left hand. He died in 913, and was buried in the Vatican. He is commended in his epitaph for the mildness of his government, his integrity, and the purity of his manners. He died nothing blame-worthy, says Platina, which, in the popes of those days, was a subject of commendation. Bower, vol. v. p. 88.

ANASTASIUS IV. pope, was a native Roman, of the name of Conrad, and succeeded Eugenius III. A. D. 1157. His temper was mild and peaceable; of which he gave evidence in his method of compromising a difference that had arisen in the last pontificate between the emperor Frederic and the Court of Rome. For this purpose he sent cardinal Grad into Germany, whose imperious behaviour incurred the displeasure of the emperor, so that he was ordered to quit the country. The cardinal, it is said, died of grief in his way to Rome. This pope took no notice of the affront, but yielded to the emperor the point in dispute. This conciliatory conduct, which might possibly have been the means of preventing the horrors of war, has been condemned by the advocates of the dignity of the papal see, as an instance of irresolution and pusillanimity. Anastasius restored William, archbishop of York, who had been deposed by Eugenius, to his see; and in the same year he also issued a bull, confirming and enlarging the privileges of the Knights of the Hospital at Jerusalem, since known by the name of the Knights of Malta. In a great scarcity of corn, which happened during his pontificate, he manifested his humanity by liberally contributing to the relief and supply of the poor. After a Pontificate that lasted little more than a year, Anastasius died, A. D. 1154; and was buried in the church of the Lateran, in a tomb of porphyry, exquisitely wrought, in which had lain the body of St. Helena, the mother of the emperor Constantine. Ten letters of this pope are preserved in the Collections of Councils by Labbè and Harduin, and in Du Chesne's History of France. Fabr. Bib. Græc. lib. v. c. 35. § 8. Bower's Hist. vol. vi. p. 72, &c.

ANASTASIUS, anti-pope, was elected in 855 by the envoys of the emperors Lotharius and Lewis in opposition to Benedict III.; but the bishops of Ollia and Albano, alleging that he had been deposed in a council, refused to consecrate him: upon which the envoys abandoned Anastasius, and he was obliged to relinquish his pretensions. Bower's Hist. vol. iv. p. 260, &c.

ANASTASIUS *Sinaita*, a monk of Mount Sinai, lived in the sixth century, in the year 561 was promoted to the dignity of patriarch of Antioch, and died in 599. Evagrius represents him as a person eminently skilled in sacred literature, exemplary in his conduct, and scrupulously attentive to the duties of piety. He was the author of several works in Greek, which are still extant; such as "Ὁδηγός; or, "A Guide in the Way against the Acephali;" printed in 4to. at Ingolstadt in 1606. "Questiones et Responiones de variis Argumentis in S. Scripturam," numero 154; printed in Greek and Latin at Ingolstadt in 1617, 4to. "Anagogicarum Contemplationum in Hexameron, libri ii." or, "Mysterious Contemplations on the six Days' Creation," published

published in Latin, at Paris, in 1609; the 12th book was published in Greek and Latin by Alix, in London, in 1682, 4to.; a treatise, which, according to the opinion of Motheim, betrays the levity and ignorance of the author. Other tracts are preserved in the "Bibliotheca Patrum." Cave's Hist. Lit. vol. i. p. 531. Mosheim's Ecl. Hist. vol. ii. p. 127. Fabr. Bib. Græc. lib. v. c. 35. § 1.

ANASTASIUS, THEOPOLITANUS, was bishop of Antioch, and flourished in the sixth century. He espoused the opinions of a sect denominated ΑΡΗΘΑΡΤΟΔΟΞΕ, and on this account Justinian designed to depose him; but being prevented by death from executing his purpose, Justin the younger banished him in 570, and he remained in exile twenty-three years. Mauritius restored him to his see in 593. He died in the year 599, and was succeeded by another Anastasius, who was killed in a tumult by the Jews in 609. This bishop of Antioch has left some sermons, and treatises on the Trinity, and other points of faith, which were published in Latin at Ingolstadt in 1616, in 4to.; and also the "Annunciation of the Virgin Mary, and Transfiguration of Christ," published in Greek and Latin, in the first volume of "Combesii Auctarius," fol. Paris, 1648. Fabr. Bib. Græc. lib. 5. c. 35. § 1. tom. ix. p. 312. p. 332.

ANASTASIUS, the *Librarian*, was a Roman abbot and presbyter, and flourished in the ninth century. He had the charge of the Vatican Library under several popes; in 869 he assisted at the general council of Constantinople, and translated into Latin the acts of that council, and also the acts of the council of Nice, held in 787, which are still extant. To this translation he prefixed "A History of the Schism of Photius and the Council." He also wrote, or compiled, the lives of the popes down to Nicholas I. continued by others, and published with the ecclesiastical history of Nicephorus Syncellus, and Theophanes, at Paris, in 1649, fol. An enlarged edition of this work has been since published by Bianchini, in four volumes folio, at Rome, in 1718. Anastasius was a learned man, and a tolerable writer. Cave's Hist. Lit. vol. ii. p. 56. Fabr. Bib. Græc. lib. v. c. 35. § 8. tom. ix. p. 339.

ANASTATIA, *Str.* in *Geography*, a small island near the coast of East Florida, south of Matanzas inlet, where the river Matanzas forms two islands of the same name at its mouth. St. Anastatia island is bounded on the north by St. Augustine's bar. It has a quarry of fine stone for building.

ANASTATICA, formed from *αναστασις*, *resuscitating*, from its quality of reviving in water, in *Botany*, a genus of the *tetradynamia filiculosa* class and order, of the natural order *siliquose*, or *cruciformes*, and the *crucifera* of Jussieu: its characters are, that the *calyx* is a four-leaved and deciduous perianthium; leaflets ovate, oblong, concave, erect and deciduous; the *corolla* is tetrapetalous and cruciform, the petals roundish, flat and spreading, with claws nearly as long as the calyx, but more spreading; the *stamina* have six filaments, subulate, of the length of the calyx, from erect spreading; anthers roundish; the *psillum* has a bifid, very small germ, subulate style of the length of the stamens, and permanent, the stigma capitate; the *pericarpium* is a very short silicle; partition ending in a subulate point, oblique and longer than the silicle itself, the valves parallel, making a cell of the lower half, but standing out from the upper, rounded, concave, gaping, and oblique, and hence having the form of a sheep's hoof; the *seeds* are solitary and roundish. There are two species. 1. *A. hierochuntica*, thlaspi rosa de hiericho of Mor. Hist. rosa hierochuntica of Bauhin and Ray, &c. common anastatica, or rose of Jericho, with leaves obtuse, spikes axillary and very short, silicles hooped and thorny. This plant grows naturally on the coasts of the Red Sea, in Palestine, and near Cairo, in sandy places; and was cultivated in Kew Garden

by Tradescant in 1656. It has had the epithet of the *rosa Mariæ* given to it by the monks, who have superstitiously imagined that the flowers open on the night in which our Saviour was born. But the truth is, that the dry woody plant being set for some time in water, will dilate and open, so as to disclose the seed vessels and feed. This has been done when the plants have been many years gathered; so that some curious persons preserve them in their repositories of curiosities, for the singularity of this property. 2. *A. syriaca*, buniæ syriaca of Gærtner, myagram rostratum of Scop. Zan. and Pallas, thlaspi, &c. of Boec. Mus. rosa lieiicontea fylvestris of Bauhin, Syrian anastatica, with leaves acute, spikes longer than the leaf, silicles ovate, beaked, and not at all bifid. This is a native of Austria, Stiria, Carniola, Syria, and Sumatra, and was introduced in 1788 by M. Thouin. It flowers in May and June.

Culture.—These plants, being annual, can only be propagated by seeds, which rarely ripen in England, unless they be sown on a hot-bed in the Spring, and the plants afterwards put into pots, which should be plunged into another hot bed, in order to bring them forward. They will not perfect seeds unless the Summer is very hot and dry; but if they are kept in a frame, with free air in warm weather, they will flower in June, and the seeds will ripen in September. Martyn's Miller.

ANASTATICA, in *Natural History*, a species of *VORTICELLA*, in the fifth order of *VERMES*, *INFUSORIA*. It is compound, with bell shaped flowers; foot-stalks scaly and rigid. Linn. and Mull.

This is the second species of clustering polype described by Trembley. These polypes form a group resembling a cluster, or more properly an open flower; this flower or cluster is supported by a stem, which is affixed by its lower extremity to some of the aquatic plants, or extraneous bodies, that are found in the water; the upper extremity forms itself into eight or nine lateral branches perfectly similar to each other; these have also subordinate branches, whose collective form much resembles that of a leaf. Every one of these assemblages is composed of one principal branch or nerve, which makes with the main stem of the cluster an angle somewhat greater than a right one; from both sides of this nerve the smaller lateral branches proceed; these are shorter the nearer their origin is to the principal branch.

At the extremity of the principal branch, and also of all the lateral ones, there is a polype or vorticella. There are others on both sides of the lateral twigs, but at different distances from their extremity. These polypes are all exceedingly small, and of a bell-like figure; near their mouth a quick motion may be discerned, though not with a sufficient distinctness to convey an adequate idea of its cause; upon the branches of these clusters are round bodies.

Every cluster has eight or nine of these branches or leaves; they do not all proceed from the same point, but the points from whence they set out are not far asunder; each of these branches is bent a little inwards, so that all of them taken together form a kind of shallow cup. If the eye is placed right over the base of this cup, the appearance of the whole eight or nine branches is like that of a star, with so many rays proceeding from the center. If the cluster is slightly touched, all the branches instantly fold up, and form a small round mass. The stem which supports the cluster contracts also at the same time, folding up like a workman's measuring rule, that consists of three or four joints. This extraordinary assemblage constitutes one organised whole, formed of a multitude of similar and particular ones. A new species of society, in which all the individuals are members of each other in the strictest sense, and all participate of the same life.

A few days after one of these clusters is formed, small
Z round

round bodies or bulbs may be perceived to protrude in several places from the body of the branch; these grow very fast, and arrive at their greatest growth in two or three days. The bulbs detach themselves from the branches out of which they spring, and go away, swimming till they can settle upon some substance which they meet with in the water, and to which they affix themselves by a short pedicle; the bulbs are then round, only a little flatted on the under side, the pedicle continues to lengthen gradually for about twenty-four hours, during which time the bulbs also change their figure, and become nearly oval; there are in a cluster but few of these bulbs compared with the number of vorticellæ, neither do all the bulbs come out at the same time. The bulb then divides lengthways into two smaller ones, but which are still much larger than the vorticellæ themselves. It is not long before these are separated like the first, and thus form four bulbs on the same stalk; these again divide themselves and form eight, which again subdivide, and consequently make sixteen. They are all connected with the stalk by a proper pedicle, but they are not all of an equal size; the largest continue to divide, and the smallest begin to open, and take the bell-formed shape. Mr. Trembley observed from one round bulb in about twenty-four hours, by repeated divisions, one hundred and ten vorticellæ to be formed. Vide Phil. Trans. Adams Microsc. &c. &c.

ANASTOMOSIS, or **ANASTOMOSIS**, formed of *ανω*, through, and *σους*, mouth, in *Anatomy*, is sometimes used to express such aperture of the mouths of the vessels as lets out their contents.

ANASTOMOSIS is more frequently used to denote the opening of two vessels into one another; or the union and juncture of the mouths of two vessels, whereby they come to communicate with one another.

Anastomoses take place in considerable number in the absorbing and circulating vessels of animals. For an account of their number, situation, and uses, the reader is referred to the articles **ABSORBING Vessels**, **ARTERY**, *Circumstances observable in the Ramification of*, and **VLIN**, *Circumstances observable in the Distribution of*.

ANASTOMOSIS, in *Botany*, a species of **PHALLUS**.

ANASTOMOSIS, in *Entomology*, a species of **PHALÆNA** of the bombyx tribe. Thorax reddish-brown; anterior wings grey, with three whitish, anastomosing streaks. Linnæus.

The larva is brown, with white spots on the back, lateral line yellow, with a red dot on each ring; a bifid protuberance on the shoulders and tail; pupa black, with two red, longitudinal streaks; feeds on the willow.

ANASTOMOTICS, formed from *αναστομος*, I unstop, or **ANASTOMOTIC medicines**, are, in a general sense, the same as aperients; but in a more special sense, the term denotes such as are suited to open the extreme orifices of blood-vessels, so that the blood may circulate the more freely.

ANASTROUS signs, in *Astronomy*, an appellation given to the *dodecatimoria*, or the twelve portions of the ecliptic which the signs possessed anciently, but have deserted by the precession of the equinox.

ANASTROPHE, from *ανω* and *στρεψω*, I turn, in the *Ancient Military Art*, denotes the turn of a battalion to its former station, after a turn or evolution either to the right or left. The anastrophe stands opposite to the epistrophe.

ANASTROPHE also denotes a grammatical figure, whereby a preposition, which regularly ought to precede, is placed after its case, e. gr. "Saxa per et scopulos," for "per Saxa et scopulos."

ANASTROPHE, in *Rhetoric*, denotes a quaint inversion of the order of the words in a sentence, e. gr. "ut scire possis ad quo te expediat loqui," for "quo ad expediat te loqui."

ANASUS, or **AMISUS**, in *Ancient Geography*, now the

Enis, a river of Norica, which fell into the Danube. See **ENIS**.

ANATAJAN, in *Geography*, called also the island of St. Joachim, one of the Ladrone or Marianne islands, is about 30 miles in compass, and is the first of those called the northern isles. N. lat. 16° 42'. E. long. 145° 50'.

ANATHEMA, from *ανω* and *θηνω*, I lay up, in *Antiquity*, denotes a present offered to some god, and hung up in his temple.

Making presents to the gods was a custom even from the earliest times, either to pacify them when angry, or to obtain some future benefit, or as a grateful acknowledgment of some past favour. They consisted of crowns and garlands, garments, cups of gold, and other valuable metals, and any other things which conduced to the ornament, or to the enriching of the temples.

These were commonly termed *ανθηματα*, and sometimes *αυθυμια*; from their being deposited in the temple, where they were sometimes laid on the floor, sometimes hung upon the walls, doors, pillars, or the roof, or any other conspicuous place. Sometimes the occasion of the dedication was inscribed either upon the thing itself, or when the matter of that could not bear inscription, upon a tablet hung up with it.

When any person left his employment, or way of life, it was customary to dedicate the instruments belonging to it, as a grateful commemoration of the divine favour and protection. Thus in an ancient Greek epigram we find a fisherman makes a present of his nets to the nymphs of the sea. Shepherds hung up their pipe to Pan, or some of the country deities, as we find done by one in Tibullus. So Lais, decayed with age, dedicates her mirror to Venus. Pausanias has left us a particular description of the anathemata, in the Delphian temple, which was the richest of any in Greece.

The term anathema also occurs in a like sense, applied to Christian offerings.

The anathemata, or ornaments of the ancient churches, are otherwise called in ecclesiastical writers donaria.

Such in particular were those called *επιτοματα*, answering to the votive tablets of the heathens. Also pictures, mosaics, inscriptions, and at length images, statues, crucifixes, &c.

Cebes's beautiful tablature of Human Life, is said, in the introduction to it, to have been among the *ανθηματα*, in the temple of Saturn.

ANATHEMA, in an *Ecclesiastical sense*, denotes an **EXCOMMUNICATION**, attended with execrations and curses. In this sense the word is usually written in Greek *αναθημα*, to distinguish it from an offering to the gods, called *ανθημα*; though it is certain several of the Greek fathers do not observe this distinction; but use *ανθημα* indifferently for either.

There are two kinds of anathemas; the one *judiciary*, the other *abjuratory*.

The former can only be denounced by a council, a pope, bishop, or other qualified person; and differs from a simple excommunication in this, that an excommunication only prohibits the criminal from entering within the church, or from holding communion with the faithful, whereas an anathema cuts him off from the body, the society, and even the commerce of the faithful, and delivers him over to the Devil.

The latter kind of anathema usually makes a part of the ceremony of **ABJURATION**; the convert being obliged to anathematize the heresy he abjures.

The critics and commentators are divided about the manner wherein St. Paul wishes to be anathema for his brethren. Romans ch. ix. 3. See **ACCURSED**.

In ancient censures we meet with an extraordinary formula,

mula, called *marantha*; and authors are divided concerning its import and use.

St. Chrysostom says it is a Hebrew word, signifying *the Lord is come*; and he particularly applies it to the confusion of those who still abuse the privilege of the gospel, notwithstanding that the Lord was come among them.

St. Jerom says it was more a Syriac than an Hebrew word, though it had something in it of both languages, signifying *our Lord is come*. But he applies it against the perverseness of the Jews, and others, who denied the coming of Christ, making this the sense of the apostle; *if any man love not the Lord Jesus Christ, let him be anathema, the Lord is come*.

According to this sense, *marantha* could not be any part of the form of excommunication, but only a reason for pronouncing the anathema against those who expressed their hatred against Christ, by denying his coming, either in words, as the Jews did who blasphemed him, and called Jesus anathema, or accused; or else by wicked works, as those who lived profanely under the name of Christians. Others of the ancients interpret the word of the future coming of Christ, particularly St. Austin, who says, *marantha* is a Syriac word, signifying *the Lord will come*. And he particularly applies it against the Arians, who could not be said, as he uncharitably thought, to love the Lord, because they denied his divine nature. Dr. Hammond and others will have *anathema marantha* to have answered to the third and highest degree of excommunication among the Jews, called *hamnatha*.

Balduinus, Deutrohmanns, Durius, Stevartius, and others, have written expressly concerning *anathemas*. Her. Labertus, a German writer, has given an *Anathematologia*, or a discourse on the church curses. See a form of the anathema denounced against robbers in the middle ages, in Bouquet's Recueil des Hist. tom. x. p. 517. cited by Robertson, in Hist. Charles V. vol. i. p. 598. That which was issued A. D. 988, after the usual introduction, and mentioning the outrage which gave occasion to it, runs thus: "Obtenebrascant oculi vestri, qui concupiverunt; arefcant manus, quæ rapuerunt; debilitentur omnia membra, quæ adjuverunt. Semper laboretis, nec requiem inveniat, fructuque vestri laboris privemini. Formidetis, et paveatis, a facie persequentis, et non persequentis hostis, ut tabescendo deficiatis. Sit portio vestra cum Juda traditore Domini, in terra mortis et tenebrarum; donec corda vellra ad satisfactionem plenam convertantur.—Ne cessant a vobis hæ maledictiones, scelerum vestrorum persecutrices, quamdiu permanebitis in peccato pervasionis. Amen. Fiat. Fiat."

Pope Clement VIII., immediately after his election, published a bull against duelling, denouncing an Anathema against all those who should give, receive, or carry a challenge, and a sentence of interdiction against the places where duels should be fought.

ANATHEMATISING, the act of pronouncing an *anathema*. In which sense it amounts to the same with *excommunicating*. The term is not only applied in speaking of persons but of doctrines and opinions.

ANATHEMATISM denotes the same with *anathema* or imprecation.

ANATHO, or ANNAH, in *Ancient Geography*, a city of Mesopotamia, the actual residence of an Arabian Emir, was composed of two long streets, which inclosed, within a natural fortification, a small island in the midst, and two fruitful spots on either side, of the Euphrates. It was situated to the south-east of Circesium. The warlike inhabitants of Anatho shewed a disposition to stop the march of a Roman emperor; till they were diverted from such

fatal presumption by the mild exhortations of prince Hormisdas, and the approaching terrors of the fleet and army. They implored, and experienced, the clemency of Julian, who transplanted the people to an advantageous settlement near Chaleis, in Syria, and admitted Pegasus, the governor, to an honourable rank in his service and friendship. See ANAH.

ANATHOTH, a city of Palestine, north-east of Jerusalem, and not far from it. This city had been given to the Levites, and was one of the cities of refuge. It belonged to the tribe of Benjamin; and was the birth-place of the prophet Jeremiah, and the inheritance of many of the Jewish pontiffs.

ANATHREPSIS, in *Medicine*, amounts to much the same with ANALEPSIS.

ANATICULA, a diminutive of *anas*, and used by the old Roman Authors, as a term of fondness, to express the passion of love. There is another of the same kind from a different bird, *palumbula*.

My little duck, my little dove, were the most endearing terms the lovers of those times could use; nor was this the custom of the Romans only, but the Greeks, as far back as Aristophanes, have it.

ANATIFERA, in *Conchology*, a species of LEPAS, called bernacle, that adheres by means of its membranaceous pedicle to the bottoms of ships, timber, and other substances floating in the water. The shell is compressed, and consists of five valves, is smooth, and affixed to a pedicle. Linnæus.

This curious marine production consists of many unequal membranaceous branches, or arms, at the ends of which the shells are disposed in an irregular manner; the larger clustering with the smaller in groups, and forming bunches of various sizes. The branches are of a fine red; the shells of a bluish violet. The animal within is a *triton*, and is furnished with many *cirri*, or *tentacula*, with which it takes its food. These tentacula are pectinated like feathers, and hang out of the shells when open. In the 16th century they were in fact supposed to be feathers, and hence arose the whimsical belief that these shells produced geese, of the species called bernacles. (*Anas Erythropus* of Linnæus.) Nor was this a vulgar opinion only; it was sanctioned by the grave details of naturalists of that time, and particularly by Gerard, whose observations are worthy of notice.

"What our eyes have seen, and hands have touched, we shall declare. There is a small island in Lancashire, called the *pile of Foulders*, wherein are found the broken pieces of old and bruised ships, some whereof have been cast thither by shipwreck, and also the trunks and branches of old and rotten trees, call up there likewise; whereon is found a certaine spume, or froth, that in time breedeth unto certaine shells, in shape like those of the muskle, but sharper pointed, and of a whitish colour, wherein is contained a thing in form like a lace of silke, finely woven as it were together, of a whitish colour; one end whereof is fastened into the inside of the shell, even as the fish of oysters and muskles are; the other end is made fast unto the belly of a rude masse, or lump, which in time commeth to the shape and form of a bird. When it is perfectly formed, the shell gapeth open, and the first thing that appeareth is the foresaid lace or string; next come the legs of the bird, hanging out, and as it groweth greater it openeth the shell by degrees, till at length it is all come forth, and hangeth onely by the bill; in short space after it cometh to full maturitie, and falleth into the sea, where it gathereth feathers, and groweth to fowle bigger than a mallard, and lesser than a goose, having blacke legs and bill or beak, and feathers blacke and white, spotted in such manner as is our magpie, called in some

places a pie-annet, which the people of Lancashire call by no other name than a tree goose; which place aforesaid, and all those parts adjoining do so much abound therewith, that one of the best is bought for three-pence. For the truth hereof, if any doubt, may it please them to repair unto me, and I shall satisfy them by the testimony of good witnesses." GERARD'S HERBAL.—Vide DONOV. Brit. Shells, &c.

ANATILII, in *Ancient Geography*, a people of Gallia Narbonensis, mentioned by Pliny. Their situation is disputed. Martin says, that they were situated to the left of the mouth of the Rhon, near the side of the lake called *Stagnum Tauri*, and he supposes that they were the same with the Atlantici of Avienus. Some authors have inferred from an inscription of questionable authority, that their capital was Heraclea. M. d'Anville places them at the mouth of the Rhine, more to the right than to the left.

ANATINA, in *Conchology*, a species of MYA. Shell globose, snowy-white, and pellucid; primary tooth of the hinge prominent and roundish. Gmelin. This shell is found on the shores of Guinea, and other parts of Africa, and bears some affinity to *solen anatinus*. It is marked with streaked lines that intersect each other.

ANATINA, is likewise a species of OSTREA, that inhabits the Nicobar islands. The shell is pellucid, lamellated and laterally incurved. Gmel. It is thin and fragile, and variegated with white and violet, and about three inches in length, including the incurvature, which is nearly half of that length. From a fancied resemblance of this shell to a duck when sitting it has acquired the specific name *anatina*.

ANATINUS, in *Conchology*, a species of SOLEN. The shell is ovate, membranaceous, and covered with pile or soft hairs; a hooked rib at the hinge. This species is found on the sandy shores of the Indian ocean, and is named by Romphius *rostrum anatis*. It is pellucid, white, and very thin; one end rounded, the other gaping. Tooth in both valves of the figure of an ear-picker. Gmel.

ANATINUS, is likewise a species of MYTILUS, of an oval shape, somewhat compressed fragile, with a membranaceous margin, and decorticated beaks. Gmel. This species has been frequently confounded with *Mytilus cygneus*; from which it differs in several particulars. It is very common in the rivers of England, and is known by the name of duck or small horse muscle. Vide DONOV. Brit. Shells, pl. 113.

ANATIS, in *Ancient Geography*, a river, which, according to Pliny, belonged to Mauritania Tingitana.

ANATIS, in *Entomology*, a species of PEDICULUS that infests the wild duck. It is whitish; first segment of the thorax orbicular, truncated on each side, the other and the abdomen long and narrow. Schrank.

ANATIS, in *Natural History*, a species of ASCARIS, of the order Intestina in the VERMES class, that is found in the intestines of the wild duck, (*anas boschas*). It is from four to six inches in length, and is viviparous. The specific character, according to Gmelin, is, white, posterior part flattened.

ANATIS is also the specific name of another creature that is found in the intestines of the velvet duck. The body is scarlet, its form ovate, thorax and proboscis covered with hooked points, and it has a long smooth intermediate neck. Gmelin. This belongs to the genus *echinorhynchus*, in the order Intestina and Vermes class.

ANATIS is likewise the specific name of a third creature of the order of the Intestina in the class of Vermes. This is FASCIOLA ANATIS of Gmelin. The body is reddish, and of a

roundish form, with a single pore. This kind is found in the intestines of the domestic duck. It is small, somewhat pellucid, and usually white, the forepart truncated and triangular, behind roundish, intestines flexuous and blackish. This is *cuculanus conoides* of Bloch, and *hirudo fasciolaris* of Mull. Z. ol. Dan.

ANATOCISM, ANATOCISMUS, an usurious contract, wherein the interest arising from the principal sum are added to the principal itself, and interest exacted upon the whole. The word is originally Greek, but used by Cicero in Latin; whence it has descended into most other languages. It comes from the preposition *ana*, which in composition signifies *repetition or duplication*, and *τοκος*, usury.

Anatocism is what we properly call *interest upon interest*, or *compound interest*.

This is the worst kind of usury, and has been severely condemned by the Roman law, as well as by the common laws of most other countries. See INTEREST.

ANATOLIA, in *Geography*, a province of Turkey, in Asia. See NATOLIA.

ANATOLIUS, in *Biography*, patriarch of Constantinople, succeeded Flavian in the year 449. Before his preferment to this dignity, he favoured the Eutychians; but after the accession of Marcian, he attached himself to the party, which he patronized, and which held the orthodox faith of two natures in Christ, and thus ingratiated himself both with the emperor and with pope Leo. Whilst he was supported by the imperial power, he maintained a vigorous contest with Leo, for the equality of the two churches of Rome and Constantinople, but when Marcian seemed to be inclined to allow to the see of Rome the supremacy in the church, he acquiesced. In order farther to engage Leo's favour, he called a council at Constantinople, which denounced an anathema against Nestorius and Eutyches; and then sent deputies to the pope to assure him of the purity of his own faith. He afterwards concurred with the emperor Marcian and the pope in hostile measures against those who did not openly profess the doctrine of the church. Upon the whole, Anatolius seems to have been a time-serving ecclesiastic, whose character claims no commendation. Dupin's Eccl. Hist. vol. iii. p. 2. p. 228.

ANATOLIUS, bishop of Laodicea, in Syria, was a native of Alexandria, flourished under the emperors Probus and Carus, and succeeded Eusebius about the year 270. He was the most eminent person of his time, for his acquaintance with philosophy and the Greek literature, and for his skill in arithmetic, geometry, astronomy, grammar, rhetoric, and logic. His distinguished qualifications recommended him to the citizens of Alexandria, and at their request he is said to have set up a school for the Aristotelian philosophy. The tenets of the Peripatetic sect were the basis of his system, and with them he incorporated other doctrines, both Pagan and Christian, thus forming a new school, in which Aristotle was the chief master. Some have doubted whether he actually complied with the request of the Alexandrians, and set up such a school; however this be, none of his commentaries upon Aristotle are extant, and, therefore, the particular manner in which he philosophized is unknown. Whether he was a native christian or a convert from paganism, is not certain; but he was undoubtedly a christian long before he became bishop of Laodicea, for he was upon terms of intimate friendship with Eusebius, his predecessor in that see, about the year 263, when Bruchium, or Pyruchium, one of the quarters of the city of Alexandria, in which was the citadel, was besieged. A circumstance occurred on this occasion, which reflects peculiar honour on his character. See ALEXANDRIA. Eusebius

Eusebius says of him, that with universal consent he had pre-eminence above all the magistrates or senators of Alexandria, that were in Bruchium. Soon after this siege, Anatolius left Alexandria, and went into Syria; and he was ordained bishop by Theocletus, bishop of Cæsarea, designed by him for his successor, and actually appointed his colleague; but in his way to a council at Antioch, held by the Christian brethren upon the concerns of Paul of Samosata, he was detained at Laodicea, and appointed bishop of that city. Anatolius appears to have been a distinguished ornament of the Christian church; and though he did not write many books, yet his eloquence and extensive knowledge and learning are sufficiently manifest in those that are extant. His work on Easter, entitled, "The Paschal Canon," is cited by Eusebius; and an ancient Latin version of it, said to be Rufinus's, was published by Ægidius Bucherus, in folio, at Antwerp, in 1634. Of his ten books of "Institutes of Arithmetic," extracts are preserved in a collection, entitled "Theologumena Arithmetica." Some fragments of his philosophical writings are collected by Fabricius, from which it appears, that, after the example of Pythagoras, Plato, and Aristotle, he made mathematical learning subservient to philosophy. This learned Alexandrian concurred with other Christians, in a high respect for the scriptures of the Old and New Testament. The time and manner of his death are not certainly known; but some have supposed that he died a martyr. Euseb. Hist. Eccl. lib. vii. c. 32. p. 284. ed. Valef. Cave's H. L. vol. i. p. 136. Fabr. Bib. Gr. lib. iii. c. 11. tom. ii. p. 273—278. Brucker's Hist. Phil. by Enfield, vol. ii. p. 306. Lardner's Works, vol. iii. p. 265—269.

Fabricius (B. G. lib. v. c. 1. tom. v. p. 277.) has mentioned several other persons of the same name, who ought to be distinguished from Anatolius, of whom we have given an account. Cave also (*ubi supra*) shews, that this Anatolius is different from him, whom Eunapius mentions as master of Jamblichus; though they are confounded by Valefius, and his opinion has been approved by Basnage. Anatolius, of Berytus, in Phœnicia, was a man of great learning, good judgment, and much candour. He was a faithful subject and able officer, under the emperor Constantius, being præfect of Illyricum, from the year 358 to the time of his death in 360. Photius, speaking of his work concerning agriculture, says, that it is a collection out of several writers upon the same subject, such as Democritus, Africanus, Tarantinus, Apuleius, Florentius, Valens, Leon, and Pampholus, and also from the paradoxes of Diaphones. The work consists of 12 books or sections. It contains, says Photius, many useful directions for agriculture and husbandmen, and may be reckoned one of the best books written upon the subject. There are inserted at the same time many strange and incredible things, favouring of the error of Gentilism; but he adds, a pious husbandman may let those things alone, and select only what is useful. Anatolius is highly commended for his integrity and eloquence, for his knowledge of the laws, and for his patronage of learning. Lardner's Works, vol. ix. p. 8—11.

ANATOMY. The word signifies simply dissection, yet there are usually comprehended under this term all those artifices by which the structure of animal bodies is developed and exhibited. As a science, anatomy must be admitted to be highly interesting and important; while other sciences lead us abroad in pursuit of knowledge, in this we are engaged at home, in concerns truly interesting, in enquiring into the means by which we live, and move, and have our being. Anatomy also furnishes us with knowledge which teaches

how to preserve health, to correct disease, and rectify the effects of those injuries to which we are inevitably exposed.

Anatomy is divided into human and comparative; in the former our researches are restricted to our own bodies, but in the latter, we may range over the whole field of animated nature.

The anatomical description of the body is technically arranged under the following heads, to which we refer the reader for more particular information.

1st. Osteology, or the description of the structure, shape, and uses of the bones.

2d. Syndesmology, or a description of their connection by ligaments, and the structure of the joints.

3d. Myology, or a description of the moving powers or muscles.

4th. Angiology, or a description of the vessels engaged in nourishing the body, in absorption, and in the removal of superfluous parts.

5th. Adenology, or a description of the glands, in which various liquors are separated or prepared from the blood.

6th. Splanchnology, or a description of the different bowels, which serve various and dissimilar purposes in the animal economy.

7th. Neurology, under which title the brain, the nerves, and organs of sense must be comprehended.

This arrangement, which is not very well adapted to the purposes of anatomical description, is, however, not at all suited to the views of physiology; for this subject, therefore, we must refer the reader to another series of articles. The functions carried on in animals, in the explanation of which physiology consists, may be thus arranged.

The terms, however, by which they are distinguished, do not correctly express the nature of each function, as will be shewn more at large under their respective titles.

1st. Digestion, or the conversion of extraneous matter into the nature of their own bodies.

2d. Circulation, or the distribution of the converted matter to every part of the animal for its repair and augmentation. The process is named circulation, from the mode in which it is carried on in the generality of animals.

3d. Secretion, or the separation and deposition of the particles composing the structure of animals and vegetables, as well as various substances which they produce from the circulating fluids.

4th. Absorption, by which external matter is imbibed, and that which is deposited by secretion more or less removed.

5th. Respiration, or the exposure of the nutritive fluid to the action of the atmosphere.

6th. Irritability, or the action which is exerted in carrying on the circulation, secretion, and absorption, and which is more strikingly manifested in the occasional motions of the muscular powers.

7th. Sensation, by which animals become conscious of the existence of external objects, and also of their own.

8th. Generation, by which new beings, similar to the parents, are formed and produced.

Most of these powers are observable in vegetables.

ANATOMY, History of. The writers on the history of medical science, and of anatomy, as forming a part of it, generally divide it into four portions. The first contains the state of these sciences previous to the life of Hippocrates, who was born about 460 years before the Christian æra; the second contains an account of the additions and alterations that were made before, and by the labours of Galen, who lived about one hundred and fifty years

years after the birth of Christ. The third part comprehends the declension of these sciences, with learning in general, in the sixth and seventh centuries, and their revival in the fourteenth and fifteenth, to their more perfect establishment by Harvey's discovery of the circulation of the blood. The fourth part contains an account of the more perfect state of these sciences from Harvey to the present time. The desire of investigating the structure of the body seems so natural a kind of curiosity, and so intimately connected with self-preservation, that we cannot wonder if a considerable portion of such knowledge should be acquired, even where the opportunities of research may have been very limited and inadequate. Omai, who was brought by Capt. Cook from Otaheite, when he surveyed Dr. Hunter's Museum, manifested considerable acquaintance with the subjects before him, and a great desire of further information. The slaughter of animals for food, the preparation of them for sacrifice, and accidental opportunities of examining the human skeleton, &c. were the first sources of anatomical information.

Amongst the Egyptians, the most ancient nation, of whose manners we have authentic memoirs, the rites practised in honour of the dead, by embalming their bodies, would familiarize the people to anatomical inquiries. The custom of carrying about, at their feasts, a skeleton, left their guests, in the midst of feasting and merriment, should forget the frail tenure of life and its enjoyments, seems a sufficient proof of this assertion. It is also related, that one of their kings left writings on anatomy.

Our accounts of this science are, however, very slight and imperfect, till it was cultivated by the enlightened inhabitants of Greece. If the pursuit of anatomical knowledge is so natural and important as to interest even barbarous nations, it was likely to be prosecuted with greater ardour and success as knowledge increased, and the powers of the mind in obtaining it became strengthened by exertion. At the time of Homer the Grecians seem to have possessed much general anatomical knowledge, as the writings of that poet evince. We read, that the stone, which Diomedes threw at Æneas, not only crushed the bone of his thigh, but also tore the ligaments of the acetabulum. Merion was wounded in one of the large veins, which return the blood to the heart, known to anatomists by the name of vena cava; and Ulysses meditated to wound the Cyclops just where the liver adheres to the diaphragm. Anatomical facts were collected, and the physiology of animals investigated by the philosophers of Greece, who taught these subjects, as well as other branches of science, at the philosophical schools of Rhodes, Cos, Cnidos, Cyrene, and Crotona. The first dissection on record, is one in which Democritus, of Abdera, was engaged, in order to ascertain the sources and course of the bile. It is natural to suppose that anatomical and medical knowledge would be hereditary in families; the father would instruct the son how to explore the structure of animals by dissection, and the son would communicate his knowledge to his children. Thus would medical science be retained and augmented in such families. This was the case in the family of Hippocrates, who was said to be the fourteenth descendant from Esculapius. In the eightieth Olympiad, about 460 years before Christ, Hippocrates formed medicine into a distinct science, and collected, arranged, and published all the anatomical and medical information which mankind then possessed. Anatomical knowledge was considerable for the age in which he lived, and it has been disputed whether he dissected human subjects; but if he did, the number must have been very small, his anatomy seeming to be of that kind and extent which the contemplation of the

human skeleton, and the dissection of brutes, would naturally produce.

No important additional knowledge of anatomy was obtained, till the formation of a medical school at Alexandria, in Egypt, where the dissection of human bodies was patronized by the descendants of Alexander. Here Herophilus and Erasistratus flourished about 200 years before the birth of Christ. They seem to have been accurate dissectors, and some minute parts of the body are still named after them as discoverers. Their writings have been lost, and it is chiefly Galen who has made us acquainted with their labours and their merits. The Alexandrian school long flourished, and medical men resorted to it for a knowledge of anatomy, which they could obtain in no other place. Here even Galen received his education. It is quite unnecessary to notice the important anatomical remarks made in the writings of the Roman authors before or after the time of Galen.

Galen, however, greatly deserves our attention and praise; not merely because he collected and arranged all the then acquired information, but because he was also an industrious dissector, and considerably enlarged the limits of anatomical knowledge. He also investigated physiology by experiments, of which it may be right to mention one instance; he refuted the opinions of the Alexandrian anatomists, that the arteries were tubes, distributing air throughout the body. By laying bare one of these vessels in a living animal, tying it in two places, and opening it between the ligatures, he ascertained that it contained blood and nothing else. He therefore concluded, that both veins and arteries served the same purpose, that of distributing blood for the supply of the body, but that the florid arterial blood contained more air than the purple blood of the veins. In an history of this kind it seems right to mention the effect of anatomical studies on the mind of Galen: after contemplating the structure of the hand and foot, and their adaptation to their different functions, he breaks out into an apotrophe, which has been much admired, and in which he is said to have exceeded any ancient in pointing out the nature, attributes, and proper worship of the Deity. In explaining these things, he says: "I esteem myself as composing a solemn hymn to the author of our bodily frame, and in this, I think, there is more true piety than in sacrificing to him hecatombs of oxen, or burnt-offerings of the most costly perfumes: for I first endeavour to know him myself, and afterwards to shew him to others, to inform them how great is his wisdom, his virtue, his goodness." There was no addition made to anatomy worth remarking by the writers who succeeded Galen: the science gradually diminished, and afterwards seemed almost lost amongst the Arabians.

The first Arabian physicians appear to have employed themselves in compiling systems from the Grecian writers, and the later ones in copying from each other. Medicine certainly declined amongst them, and their religious notions made them almost entirely neglect anatomy. In the tenth century Constantine, a native of Bagdat, brought with him the Arabian doctrines on medicine to the Salernitanian school in Sicily; and here anatomy began slowly to revive. In the fourteenth century Mundinus dissected human bodies in Italy, and by degrees other nations acquired that useful boldness.

Anatomical knowledge, on its revival in Europe, was greatly promoted by the exertions of eminent painters, who were early and accurate dissectors, correctly delineating the muscles, after they had removed the integuments which covered them. Raphael, Titian, and Leonardo da Vinci were famous for their anatomical skill, which is indeed sufficiently evident in their paintings. A number of sketches, designed

as studies by Leonardo da Vinci, are still extant in his Majesty's collection of drawings, and are spoken of by Dr. Hunter in the most encomiastic terms. Albert Durer, who also is ranked by Haller among the restorers of anatomy, published many plates representing the proportions and gestures of the human form and countenance.

When the Turks had subdued Greece, the inhabitants fled for safety to the western nations of Europe, bringing with them the Grecian authors on medicine, and translating them; which works the invention of printing, that happened about the same time, greatly conduced to disperse throughout Europe. People had now an opportunity of becoming acquainted with the writings of Galen and the ancients, and, by these means, of arriving at the source of that knowledge which they had hitherto obtained only through the channel of the Arabian physicians. The superiority of the former was soon discovered, and the opinions of the Grecian writers were considered, even in anatomy, as unimpeachable.

In the middle of the sixteenth century several eminent anatomists flourished, particularly Sylvius and Vesalius, Fallopius and Eustachius. Sylvius taught anatomy in Paris in 1532. Vesalius first advised anatomists to inject coloured fluids into the vessels of the body, in order to facilitate the labour of minutely tracing them. Whilst he was a young man in college, he pursued anatomical inquiries with great ardour and assiduity, and published some of his discoveries before he was twenty-five years of age, and seven books on the anatomy of the human body before he was twenty-nine, A. D. 1542. These books contain great discoveries, and, in many circumstances, correct the ancients. But although they have entitled their author to the gratitude of posterity, they procured to him scarcely any thing but animosity from his contemporaries. At that time the authority of Galen was held in high veneration; but when Vesalius exposed his errors, the hatred of all seemed turned against him. People could not bear to be set right by so young a man, and even Sylvius denounced perpetual enmity against him. But knowledge was increased by these contentions, all parties were obliged to refer for the materials and support of controversy, to the book of nature, which they could not consult without receiving instruction. Even Vesalius was detected, in some instances, in the error with which he charged Galen; that of describing the anatomical structure of the human body from the dissections of brutes. In 1561 Fallopius, in Italy, published his *Observationes Anatomice*; he was an indefatigable anatomist, and made great discoveries. About the same time Eustachius made himself conspicuously eminent by promoting anatomical knowledge. He seemed calculated for subtle investigations; he drew many figures of the human body, and engraved his own plates, the accuracy of which cannot fail of exciting surprise in an anatomist of the present day. When the labours of these eminent men had, as it were, smoothed the path, anatomy was taught with a moderate degree of correctness and minuteness in the different schools of Europe.

Shortly after, as Haller has observed, the different nations being engaged in war, the same attention was not paid to public institutions and dissections. Anatomists had therefore recourse to the examination of the bodies of brutes, from which they derived many important discoveries.

In the year 1628 Harvey published his discovery of the circulation of the blood. The principal facts relating to this subject were known before his time: it remained for him to reject the specious conjectures then maintained concerning the blood's motion, and to examine the truth of those facts which were then known, and by experiments to discover

those which remained to be detected. This he did, and thereby rendered his name immortal. His doctrines were at first opposed; but when they could no longer be contended against, the merit of the discovery was assigned to former anatomists.

It seems proper, in this place, to review the several steps which were made in the investigation of this important subject. Hippocrates believed that all the vessels communicated with each other, and that the blood underwent a kind of flux and reflux from and to the heart, like the ebbing and flowing of the sea; and he mentions the throbbing of the temporal arteries, as an evidence of this fact. The anatomists at Alexandria adopted a wrong, but ingenious opinion; as they found the arteries empty, and the veins containing blood, in their dissections, they imagined that the former were tubes for the distribution of air, and gave them that name which they have borne ever since; and that the veins were the only channels for the blood. The heart of man, consisting of two sets of cavities not communicating with each other, and its connection with the lungs, were to them delusive circumstances, and seemed to favour their opinions. It is true they sometimes found blood in the arteries, and in the left cavities of the heart, but then they believed that the air or spirit had escaped, and that the blood had oozed through the sides of these air vessels, and supplied its place. Galen, as has been said, refuted this opinion by experiment, and ascertained that blood flowed both by the arteries and the veins, though he knew not then its natural course. On the revival of anatomy in Europe, the pulmonary circulation was known to many eminent men. The valves at the mouth of the pulmonary artery proved the course which the blood must take in that vessel, and it seemed naturally to follow, that it must return to the pulmonary veins. This appeared to be the case to Realdus Columbus, Michael Servetus, and the celebrated Sarpi. But when Vesalius afterwards examined the subject of the blood vessels, we can only attribute his failure in discovering the truth of the circulation to his mind being more directed to expose the errors of Galen, than to a candid examination of the subject. Fabricius ab Aquapendente, the preceptor of our famous Harvey, particularly described the valves of the veins, the mechanism of which would absolutely prevent the blood from flowing in those vessels towards the extremities. When Harvey returned from his studies in Italy, his attention being excited to the subject, he began those experiments, by which he learned and demonstrated the fact of the circulation. Harvey's first proposition of the subject impresses conviction so strongly on the mind, that we are left in perfect astonishment, that a circumstance so luminously evident should so long remain unobserved. It must be granted, that the heart projects about two ounces of blood into the aorta at every pulse; what, then, it may be asked, becomes of this large quantity of blood, unless it circulates? It must be granted, that the heart receives that quantity prior to every pulse. From whence is it received, unless the blood circulates? Harvey tied an artery, and the corresponding vein received no blood: he tied a vein and all its branches, and those of the corresponding artery were choked with blood, even to the entire obstruction of circulation and motion. But Harvey was not acquainted with the direct communication which exists between these systems of vessels. He imagined that the blood transfused from the arteries into the veins through a spongy, or parenchymatous substance. Much yet remained to be ascertained by microscopical observations, and subtle anatomical injections and dissections.

In 1621, a little before the publication of the circulation, the lacteal absorbents of the intestines were discovered.

covered by Afelli; and shortly afterwards, the lymphatic or general absorbents of the body were brought into notice by Rudsee and Bartholin. In 1654 Pecquet published his discovery of the trunk of this system of vessels, by which all the matter absorbed from every part of the body, as well as the urine when imbibed from the intestines, is poured into the left subclavian vein. (See the article ABSORBING VESSELS.) Swammerdam, about the year 1660, taught anatomists to use wasen injections, which, hardening when cold, enable us to trace and examine the intertexture of minute vessels with certainty and exactness. Shortly after, in the art of injecting and making anatomical preparations, Ruysch, who was professor at Amsterdam, particularly excelled; and by the anatomical artifices which he instituted, he was enabled to develope the vascular structure of the body, with a degree of minuteness and exactness hardly credible.

Malpighi, a great anatomist and professor at Messina and Bononia, in 1666, broached very ingenious and clear ideas respecting secretion. He believed that the minute arteries poured a liquor into little cells contained in glands, from which it passed off by other tubes, called excretory ducts. Ruysch denied the existence of cells, and affirmed, that the secretory and excretory vessels were continuations of the same tube. These eminent men had each numerous partizans, but the opinion of Ruysch, which is most simple, and drawn from accurate observations, is now considered as ascertained. Ruysch also contributed to our knowledge of the absorbing system, by particularly describing the structure of its vessels, and Nuck had no inconsiderable share of merit on the same account. Leuwenhoeek, who greatly promoted anatomy, not merely by his own microscopical observations, but by shewing what important discoveries might be made by the microscope, saw the circulation in the transparent parts of fish and amphibia, and thus was the knowledge of the circulation perfected.

By these discoveries much light is thrown on the animal economy; and we are enabled clearly to discern many circumstances which before either escaped observation, or were imperfectly seen. By the discovery of the circulation we see the truth of the scriptural expression, that in the blood is the life of an animal; for from this vital fluid every part is formed and maintained. By the discovery of the absorbents we perceive how the blood itself is supplied, from the food, which is converted into a milky fluid, by the digestive organs; and how the old particles of our bodies, which are no longer fit to remain in it, are removed and conveyed into the blood, to be eliminated by the excretory organs.

When anatomy had thus become a clear and distinct science, it was inculcated and taught, in the different nations of Europe, by numerous professors, with a zeal and industry highly honourable to themselves and useful to mankind. It would occupy a volume to relate their labours and discoveries; we must restrict ourselves to mention only the names of the most eminent, and the principal subjects, which engaged their attention. The celebrated Harvey led the way in investigating one of the most curious processes in the animal economy, that is, the procreation of the species. Leuwenhoeek and Buffon observing certain genera of microscopic animalcules in the seminal fluid, formed rather wild speculations respecting them, which, however, considerably excited the public attention. De Graaf, in 1672, was the proposer of the most rational opinion on this subject. In viviparous animals he shewed the existence of minute ova formed in the ovaria, which, when fecundated, pass through the fallopian trumpet into the uterus, and there grow to maturity; the late experiments of Spallanzani, in Italy, and some in this country, seem to have confirmed his opinion,

and proved that the female of almost every species prepares an ovum, which contains parts, which are, as it were, animated, and set in motion by the semen of the male. As a prosecution of the history of the same subject, we may mention, that Dr. Hunter, in this country, has given a most complete history, with beautiful explanatory engravings, of the growth of the human ovum, and of the changes which the uterus undergoes after the ovum has been received into that cavity.

The more conspicuous parts of the body, the bones and the muscles, have been most accurately described and delineated; the former by Albinus, Cheselden, and Sue: the latter by Albinus and Cowper. Albinus, as a minute anatomist, also deserves the highest praise.

In 1672, Diemerbroeck, professor at Utrecht, published a system of anatomy; and in 1711, Winslow published a very excellent and accurate work of the same kind in Paris, which long served as a kind of text book for students. But when Albinus and Haller had greatly simplified the description of the body, and improved the knowledge of its minute structure, some other systematic work became necessary, but none for a long time appeared.

In the mean while Haller published, at Gottingen, in 1743, his *Icones Anatomicae*, with a view to supply the deficiencies and correct the errors of Winslow. The description of the arteries particularly deserves our praise and gratitude. Professor Walthen, of Berlin, has with equal, or even superior diligence, traced the distribution of the most important nerves, and published splendid representations of them; and lately Mascagni has given to the public a most elaborate and complete account, with elegant plates, of the absorbing vessels. Haller not only promoted anatomical knowledge by his accurate dissections, but discovered and established physiological truths by experiments made on living animals. In like manner Mr. John Hunter pursued his enquiries; he was an accurate and minute dissector, a patient experimentalist; and in his researches surveyed the whole field of animated nature. To him we owe in anatomy the descent of the testis, and the natural history of the teeth; by him physiology has been greatly promoted, and the structure and economy of animals displayed and explained. In Germany the brain has been examined, and the nerves traced with the most sedulous attention; and of late Vic D'Azyr, in France, an anatomist equally comprehensive and minute, has published representations of the brain, which are allowed to excel all others. Dr. Monro, in our own country, has also published on these subjects. Some anatomists seem to have directed their attention chiefly to the investigation of some single organ. Zinn has examined and explained the structure of the eye with surprising minuteness and accuracy. Cotuninus, Meekel, and Scarpa, the ear; and the latter has also paid attention to the organ of the smelling sense. Of late some excellent systems of anatomy have been published by Sabatier, in France, and Soemmering and Hildebrand, in Germany.

Morgagni, the pupil of Valsalva, professor of anatomy in Padua, who had very extensive opportunities of observation, and who much improved anatomy in his old age, in the year 1761 published the result of his observations *De Sedibus & Causis Morborum per Anatomien indagatis*, a work of the greatest utility. Doctor Baillie has of late, in this country, prosecuted the same subject, though in a different manner. He has published on the morbid anatomy of the body, and illustrated his descriptions by many elegant, expressive, and accurate plates; the prosecution of this subject promises the greatest advantages.

We have thus cursorily mentioned the principal subjects, in which the most eminent anatomists have been engaged. The names and employments of numbers of men of high

desert have, however, been omitted; indeed, they could not be properly noticed unless this article were of itself to make a volume. Chronological order has been much trespassed against, and we therefore return to mention the most remarkable anatomists, in a series, according to the time in which they lived. As it is difficult to adjust their precedence in this respect, we shall rely on the authority of Haller, whose knowledge and judgment will not perhaps be called in question. He considers Benedictus, Berengarius Carpenfis, Nicolaus Massa, Sylvius, Vesalius, Servetus, and Columbus, as the chief restorers of anatomy, whose writings are dated from the beginning to the middle of the sixteenth century. After the restoration of anatomy, the schools in Italy particularly excelled, and most anatomists received their education in them. From amongst the most eminent of the Italian school we may select the names of Fallopius, Eustachius, Aurantius, Cæsalpinus, Varolus, Plater, Caspar Bauhinus, Aldrovandus, Casserius, Fabricius ab Aquapendente, Riolanus, Hoffman, and Spigelius, whose writings extend from the middle to the conclusion of the 16th century.

In the beginning of the 17th century the dissection of human bodies began to decline in the Italian schools, and more attention was paid to comparative anatomy and physiology. Amongst the most eminent in this department of science we may recite the names of Afellius, Harvey, Marcus Aurelius Severinus, T. Bartholin, C. V. Sneider, Van Horne, Highmore, D. de Marchettis, Rudbec, Glisson, Wepfer, Blasius, Malpighi, Steno, De Graaf, Herborn, Ruysch, Swammerdam, C. Bartholin, Brunner, Leuwenhoeck, Duverney, Bidloo, and of those who confined themselves chiefly to human anatomy, R. Vieussens, Cowper, Raw, &c. all of whom flourished in the 17th century. In the beginning of the 18th century, Haller considers anatomists as having attained a greater degree of learning and knowledge in the science which they studied, and under the title of the more learned in anatomy he gives an account of the works of Morgagni, Winslow, Cheselden, &c. which were dated in about the first 30 years of that century, except Morgagni's work, "de Sedibus et Causis Morborum," which he published at an advanced age. Under the title of the perfect state of anatomy Haller reviews the works of Albinus, Senac, Monros, (the father and son), Haller, Nicholls, Lieutaud, Ludwig, Leiberquyn, Dr. Hunter, and his brother Mr. Hunter, Daubenton, Camper, Walther, Meckel, Zinn, Fontana, Wrisberg, Spalanzani, Hewson, Portal, Sabatier, Scarpa, Blumenbach, Troja, &c. whose writings extend to the present time. The History which is given must necessarily be brief, and cannot, in consequence, be otherwise than imperfect. We therefore refer the reader for more ample and correct information on this subject, to the writings of Le Clerc, Freind, Goelicke, Portal, and to the Bibliothecæ of Haller.

ANATOMY, Comparative.—By this term is popularly understood the anatomy of animals, compared with the structure of the human body as a standard.—This definition, however, is not sufficiently comprehensive. The organization of every animal forms a part of our knowledge of nature, and as far as it exemplifies or explains any of the functions exercised by animal bodies, furnishes those data which constitute the basis of physiology. The anatomy of the human body is not more applicable to this purpose than that of other animals, and many of the most important functions can only be understood by comparing the organs by which they are performed in the different classes of animals.

The agreement which necessarily exists between the structure and the habits of animals, renders comparative

anatomy an essential branch of zoology. No classic division of the subjects of natural history can be either permanent or useful, which is not founded upon internal structure as well as external characters, and in proportion as this is attended to, we come nearer to that natural arrangement, which should be the chief object of all classification. It is in comparative anatomy, then, that the physiologist principally discovers the laws which determine the phenomena of organized matter, and that the naturalist finds all his observations upon the appearances and manners of animals verified and explained.

The anatomy of animals must have formed one of the very first subjects of human investigation, because in the most simple and early stages of society, almost all the means of subsistence or of enjoyment which mankind possess, are drawn from other animals. The savage, therefore, in killing his prey, and preparing it for the different purposes to which it is to be applied, is necessarily led to distinguish the structure and appearance of the several parts, one serving for food, another for raiment, a third for a weapon or an ornament, and so on; it cannot be supposed that this examination should be frequently made, even by the most ignorant, unaccompanied by some reflections upon the uses of those parts to the animal in which they are found, or without comparing in some degree the anatomy of one animal with that of another:—a very considerable portion, therefore, of knowledge on this subject must have been obtained in savage society, but which has been lost to after ages, from the want of any record of human knowledge.

The sacrifice of animals which has always made a part of the religious worship of uncivilized nations, afforded also many opportunities of observing the internal structure of animals.

The first account that we possess of comparative anatomy being studied as a branch of philosophy is amongst the Greeks. Democritus is reported to have directed himself to this subject with so much ardour, that he at first incurred the suspicion of insanity, but when his objects were explained, the utility of his pursuits was fully acknowledged.

Aristotle may be considered as the first professional anatomist; his zoological researches were carried so far that his works are read with pleasure and improvement, even at the present day: his opportunities of studying the subject were indeed unparalleled; for we are told that Alexander bestowed upon him 100 talents, (a sum equal to 50,000l.) to be solely employed in procuring animals for dissection.

Herophilus and Erasistratus, who succeeded Aristotle in the school of Alexandria, are said to have dissected human bodies; but it is more probable that the anatomy of Alexandria was still taught by the dissection of animals, as besides the natural feelings to be conquered, there prevailed at that time a notion, that the touch of a dead body communicated a moral pollution: notwithstanding which, this school became so celebrated, that it was not only visited by the learned men of Greece, but by those of all nations. During the dark ages, comparative anatomy suffered nearly an equal depression, with the other sciences, and it was not until the latter part of the 15th, and the beginning of the 16th centuries, that it began again to be much cultivated; about this time flourished Rondeletius, Bellonius, Eustachius, Coiter, Fallopius, Fabricius ab Aquapendente, Casserius, Severinus, and several others, whose works may be still consulted with profit. The discovery of the circulation of the blood, and of the absorbent system, which may be reckoned as the commencement of another æra in anatomy, opened the door to physiological enquiry, from which com-

parative anatomy derived the greatest improvements, as many of these researches were most conveniently conducted upon animals about this time; also the application of the microscope to the observation of the more minute structure of parts, furnished a new field for investigation; amongst those who most illustrated the anatomy of animals during this period may be enumerated Afellius, Harvey, Stenon, Boerhaave, De Graaf, Redi, Willis, Ruysch, Malpighi, Swammerdam, Leuwenhoeck, Perault, Needham, Blasius, Ohgenuus Jacobæus, Liller, Boerhaave, and Tyson. Comparative anatomy continued to improve in a regular and steady manner, during the early part of the last century, which will appear in the works of Valisneri, Valentini, Geoffroy, De Reaumur, Bradley, Maitre Jean Petit, the elder Monro, Trembley, Baker, Bonnet, &c. but it was not until the middle, and towards the close of the last century, that the anatomy of animals became a connected science; the discourses of the preceding ages were then arranged, compared, and systematically applied to the purposes of physiology; many new and important facts were added, and several of the most curious and interesting circumstances in the animal economy were fully investigated and explained; collections of preparations to exhibit the structure of animals were formed in Paris, Padua, Gottingen, London, and some other parts of Europe; in the three first places, public lectures were delivered, by which a knowledge of the subject was diffused over the continent; this might be considered as the Augustan age of comparative anatomy, in which we meet the names of Camper, Daubenton, Vic d'Azir, Blumenbach, Pallas, Searpa, Comparetti, Hunter, Monro, Hewson, besides a great number of others of the first character.

Some of these eminent men are still living, to whom may be added, as the most distinguished anatomist of the present time, citizen Cuvier.

It would be impossible, within the limits of this article to give any detail of the several discoveries which have been made upon this subject; they have only in a very few instances been published in distinct essays, and are chiefly to be found scattered through works on natural history and human anatomy, or in the transactions of literary societies. The works of Collins, Valentine, and Blasius, which were published under the name of systems, are mere collections of facts, without any suitable arrangement, and although as a simple compilation no book can have more merit than the "Anatomie Animalium" of Blasius; it is, however, to citizen Cuvier we are indebted for the first systematic work on comparative anatomy; the want of such books, and of public lectures has hitherto made this science less an object of general attention than its utility and interesting nature would deserve; but it may be expected that these deficiencies will be supplied by the present age, in which the value of every kind of knowledge is duly appreciated.

All those who have lately written or lectured upon comparative anatomy, have very properly chosen to arrange the subject in a physiological manner, instead of describing the structure of each kind of animal separately. This mode, however, if strictly adopted, would prove highly inconvenient in a dictionary, in which the matter should be so distributed, that it could be immediately resorted to, under familiar heads or titles; on the other hand, to multiply divisions much is tedious and perplexing, and incompatible with the perfect understanding of this subject, which requires that a number of facts should be known before any comparison or conclusion can be drawn. The plan pursued in the present work, combines in some degree both methods of arrangement. Thus certain classes of animals are esta-

blished upon the basis of an agreement in their general anatomical structure; each of these classes forms a distinct article; and the faculties or functions belonging to the animals it contains, make so many subdivisions or lesser heads, under which the structure of the organs, subservient to these functions, is discussed.—See CLASSIFICATION OF ANIMALS AND FUNCTIONS.

ANATOMY, Vegetable.—All natural science consists in the discovery and application of facts; its usual progress, therefore, is gradual; history records no period in which nature has not been studied, and in which the foundation of most of the sciences has not been clearly laid. The internal structure of vegetables, however, during the early ages of mankind, was involved in almost perfect obscurity. It was not indeed until the latter part of the 17th century that the anatomy of plants was formed into a distinct science; before this period the same opinions were entertained upon the subject that were taught by the Greeks, and which were not established upon actual observation so much as the analogy that was very properly imagined to exist between animal and vegetable bodies. Thus they attributed four parts to all plants:

First, the *sap* or *juice*, which they considered similar in its uses to the blood.

Secondly, the *fibres* of plants, which they called nerves, from their resemblance to those parts in animals to which, however, they did not ascribe the property of sensation.

Thirdly, the *veins* or vessels that were supposed to contain the fluids.

Lastly, the *pith*, which they conceived to be analogous to the flesh of animals. A further account of the early state of this branch of science may be obtained in the writings of Aristotle, Theophrastus, &c. and in the phytologia of Du Val.

It was only by investigations, conducted with the microscope, that the real structure of vegetables could ever have been developed; it is to the invention of this instrument, therefore, that we owe almost all the knowledge that is at present possessed upon the subject.

The microscope was first made use of to discover the organic structure of plants by Grew and Malpighi, for what was done before them by Mr. Hooke, and some others, scarcely deserves to be noticed, as their attention was chiefly directed to the examination of the external parts of vegetables. In no instance, perhaps, have the first labours on any branch of science gone so far as those of Malpighi and Grew. The books which they published under the title of the anatomy of plants, rank amongst the highest authorities upon the subject at the present time. It is remarkable also that on the 7th December, 1671, the same day on which Grew presented to the Royal Society the first part of his Anatomy of Plants, the society also received the manuscript of the first part of Malpighi's "Anatomie Plantarum."

In consequence of the degree of perfection to which these eminent men carried vegetable anatomy, the writers who have followed them have been employed in the investigation of the functions, rather than the structure of plants. Some curious and highly important facts have, notwithstanding, been added with respect to the growth of timber, the anatomy of the bark, and the more minute organization of the vessels, leaves, flowers, seeds, &c.

These more modern discoveries in vegetable anatomy may be principally found in the writings of Leuwenhoeck, Bonnet, Duhamel, Relceuter, Gärtner, Hill, Baron de Gleichen, Reichel, Mayer, Guettard, Hedwig, Walther, Desaussure, Desfontaines, and Mirbel.

There is scarcely any branch of science more interesting

in the pursuit, or which holds out a more valuable end, than vegetable anatomy. The delicate, minute, and complicated arrangement of parts, which appears in the organization of vegetable bodies, presents a continual subject of admiration and amusement, in procuring which, the feelings are never wounded, nor the senses disgusted. But this science is not a subject of mere curiosity or idle speculation; it affords the greatest illustration of the structure and functions of animals, and tends in an eminent degree to improve the arts of agriculture and gardening, from which civilized man derives all his means of subsistence, either by his own immediate consumption, or the support which is obtained from domesticated animals.

There are certain parts of vegetables which may be termed common, on account of their being generally distributed throughout the system. These are the cortical substances usually included under the name of *bark*—the *wood*, the medullary part or *pith*, and the different orders of *vessels* for containing the sap, air, or secreted fluids.

There are other parts again which from possessing different external figures, and performing separate uses in the vegetable economy, might be called peculiar parts; these are the *root*, the *trunk* or *stem*, the *branches*, the *buds*, the *leaves*, the organs of reproduction contained in the *flower*, the *seed* or *fruit*. It is under these several heads that the anatomy of plants is discussed at large in this dictionary. Such an arrangement appears the most convenient, if not the most suitable, as by adopting its popular terms are obtained for most of the articles, a thing very desirable in conveying knowledge by means of a dictionary. This disposition of the subject also is nearly the same, that has been chosen by other systematic writers upon the anatomy of plants.

The functions of vegetable bodies are described, arranged, and their proper references pointed out, under the article *PHYSIOLOGY vegetable*, which see.

ANATOMY, Pictureque.—By this term is implied that degree and kind of anatomical knowledge, which is requisite for painters and sculptors, &c. comprehending chiefly the bones which support the figure, the muscles which move them, and the integuments with which they are covered.

Every considerate person will allow, that the painter, &c. who represents the human figure, cannot obtain any great celebrity in his art without some knowledge of anatomy; but it may not soon appear to every one, that there is a necessity for that considerable degree which it is requisite for him to know; and it may be concluded, that little or none of this kind of information will be absolutely necessary for those artists, who devote themselves to the representation of clothed figures. It may also be conceived, that however proper the knowledge of the external muscles may be to the painter of nudities, the bones, being mostly covered by them, will be no considerable object of his attention; and that statues, with the living model, will communicate all the information required.

The skeleton being the frame-work supporting the human fabric, it would be diametrically opposite to our opinion to think lightly of osteology. As the bones describe the grand points of the figure, and are acted upon by the muscles and tendons, a principal part of the painter's attention should be given to the configuration of the bones, especially of the joints; and although the knowledge of the muscles which move them and fill up the cavities demand much of the artist's consideration, yet it is presumed, that with the use of statues and living models, a person well informed in osteology would make a more rapid progress in the representation of figures, where great knowledge of the muscles has not been obtained,

than he who has well studied the myology, but had not a competent acquaintance with the bones. This observation will also apply to the supposition of clothed figures being painted without a prior acquaintance with anatomy; it being presumed, that however capable such a person may be of painting drapery, without a considerable degree of anatomical knowledge, his figures will resemble bundles of cloth or linen without that animation and grace, which are to be seen in the works of those artists who have been honoured with the approbation of the judicious.

It is certain that statues and living models are of great use to the painter; the antique figures will form his taste, and living figures are so continually used by all painters who strive to excel, that they form a very considerable branch of the education of artists in all their academies. It is, however, next to impossible that a painter should copy the object before him, if he do not understand it; for, let him be ever so diligent and attentive, he will fall into considerable mistakes. Although in attitudes without motion or exertion, the living figure may for a long time direct his pencil with success; yet, when violent motion and exertion are to be expressed, the living model can but assist him for a few moments; here the knowledge of anatomy lends its aid, without which the wearied figure before him will only perplex and render his representations inanimate.

“Nor is it, as some may be apt to imagine,” says Algarotti, “merely to represent athletic and vigorous bodies, in which the parts are most bold and determined, that anatomy is requisite: it should be understood, to represent persons of the most delicate frame and constitution, even women and children, whose members are smoothest and roundest, though the parts made known by it are not to be strongly expressed in such subjects; just as logic is equally requisite under the polished insinuations of the orator, and rough arguments of the philosopher. But it is needless to spend much time in proving, that a painter should be acquainted with anatomy, or in shewing how far his acquaintance with it should extend.

“He must be acquainted with the figure and connection of the bones, the origin, progression, and shape of the muscles, the different degrees with which they are covered with fat, which substance lies thicker upon them in some places than in others: but above all he should know in what manner the muscles effect the various motions and gestures of the body.” Count Algarotti wrote with judgment upon painting, and his remarks upon anatomy deserve respect. The following extract was written by a physician, who seems to have had a taste for painting; although some of his remarks may have been anticipated, it is thought proper to present them to our readers; they will be found, amongst other useful things, in Dr. Brisbane's *Anatomy of Painting*. After speaking, in the preface, to surgeons, the doctor observes, that “as the representation of the outside, or the surface of the human body, is the chief object of his art, he ought to study the structure of the body and its inward parts, chiefly for the sake of, or as they affect, or are referred to the external surface, and make their appearance there, or are assilant in the better drawing and representation of it. Hence the parts which shew themselves upon, or affect the surface of the body, ought to be the sole or chief object of the study of a painter. The parts, therefore, that lie nearest to the surface, or outside of the body, and consequently that are most immediately concerned in forming its outline, are first to be considered by a painter, *viz.* the external layer of the muscles, especially the larger ones, and these that are most subject to appear in the movement and attitudes of the body. As to the skin and fat under it, these are spread over

the whole body, and are to be considered merely as a drapery or covering to the more inward parts, which appear every where more or less through them, at some times and places in a stronger, and at other times in an obscurer manner. But though the parts nearest to the surface are the first and most obvious that belong to the study of a painter, yet nature has so contrived the human body, that the external parts cannot be well understood, without a just idea of the internal ones, even of those which are, as it were, buried in the centre of the body; I mean the bones or skeleton, which are the foundation and frame on which the whole fabric is built, and to which, as a basis, all the other parts are mediately or immediately referred; particularly the muscles, so necessary to be known by painters, which are chiefly inserted into the bones, and make considerable marks and impressions upon them; and consequently without the knowledge of the bones, the muscles, and other soft parts cannot be understood; but there is another reason why the bones must be studied by the painter, *viz.* because parts of the bones, though covered by the integuments, appear not obscurely to the eye in many places of the body, and, like the large muscles, are the cause of the outline, and of the character, proportion, beauty, and appearance of many parts; and when properly considered and understood, the bones, by so many fixed points, give the finest direction to a painter, not only how to find and place the muscles, but also how to draw the human body; nor can it be so justly or readily drawn by any painter, as by one who understands anatomy in a masterly manner, particularly the bones and external muscles, and can point them all out upon a living man, and, by means of that knowledge, determines all his points, and the forms and proportions of every part and member, adding one part to another as he knows they lie upon the body; this is the true and natural method of drawing the human figure. But though the bones and external muscles are the most necessary part of the anatomical study of a painter, yet it must be confessed, that at least a general knowledge of the whole fabric is of great use, in order to a more complete and masterly representation of the human body, and in order to be able to diversify, and give reason for every appearance; and not only the solids must be known by a painter, but he ought likewise to have some idea of the fluids, as on these chiefly depend the various tints and colours of the skin that appear in the different sexes and ages of life, in different characters and occasions, climates, and nations. And as the human frame is so contrived, that the movements and passions of the mind affect the body, and are evidently seen and distinguished upon the countenance, and are expressed there and in other parts of the body by strong and certain characters; and as this is the most delicate and highest part of the painter's art, by which he is capable to move, to delight, and to instruct mankind, and to recommend himself and his art to their esteem and admiration; therefore, the study of the mind, and its various characters, passions, and movements, so far as they are marked upon and expressed by the body, ought to be above all things the study of a painter; for as the members of the human body, in a good picture, beautifully appear through the drapery; and as the bones and muscles appear through the skin, so the mind itself, in all its characters and passions, appears upon the countenance, and in the expressive proportions, attitudes, and tints of the various parts. A lover of the arts of design, or indeed any anatomist of true taste, will look upon the human body, and all its parts, with the eye of a painter; otherwise, he will see and describe it in an ignorant and rustic manner. Observing the human body with the eye of a painter, enables us to see all its beauty and perfection, and

raises in our minds a thousand ideas of the uses and propriety of the several parts, whereof one ignorant of painting will be totally insensible; and, in describing the human body upon this plan, we naturally do it in the most clear, short, and agreeable manner." We wish to impress upon the mind of the young painter, that he *must* absolutely obtain a competent knowledge of anatomy, and therefore have strengthened by quotation what we before observed. At the same time we have purposely omitted Dr. Prichard's reprehension of the method adopted by all artists, *viz.* that of proportioning the figure by heads, &c. (see Adrian's measures of the antique figures) which, if he had well considered and understood, he could not have rejected.

In a well-formed figure, all its parts are in proportion to each other: if the head be the tenth part of the height of a perfect model, its imitation cannot be well, or with certainty, made without this being used as a scale for the other parts: if the face be divided into three parts, and one of these parts be allowed to be the length of the nose, which it is in all the fine specimens of beauty and proportion, either ancient or modern, then may the figure be said to measure eight heads in height, or thirty times the length of the nose; and this scale will give a right proportion to figures of all dimensions. It is well to caution the student against departing from the revered *ancient* path by the hasty determination of any person, as the young artist may be seduced by his adherence to *individual* instead of the *generale* of nature. See Reynolds's Discourses to the Students of the Royal Academy. See also Fuseli's Lectures. While he is beginning this pursuit, at the very time when he is the most liable to err, we present our caution. It is not intended to speak of picturesque anatomy, merely to amuse persons who wish to have some conception of it, but to endeavour so to treat the subject, as to assist those who desire to be directed into the right path of attaining necessary information in order to practice; to point out the method, by which the study is to be pursued; what books, tables, and casts are conceived to be most proper; and which, by experience, have been found the most useful. Some observations will also be made that we apprehend are very much required, and which are not to be found in any printed work upon this subject, that we know to be exact. Some of our readers may think too great stress is laid upon anatomy for artists, while to others these instructions will seem superficial. To the former, we recommend a second consideration of what has been said; to the latter we submit, and refer our readers, for deeper knowledge, to the anatomical labours of the gentlemen, to whom those parts of the Cyclopædia are committed; while at the same time we advise the student in painting not to pay too much attention to those curious parts of anatomy, which do not concern his profession. In excuse for any want of connection which may appear, though it is meant to be as methodical as the nature of the requirements will admit, it should be noticed, that some of our observations are meant to be impressed upon the memory, and retained as distinct maxims.

Having thus far offered general observations, we might now immediately proceed in the particular steps, by which the student is to pursue his practical knowledge, were it not for a consideration, that an attention to theory should in a slight manner, at least, precede practice, for which reason it is thought necessary to exhibit a general system of the bones and muscles in this place. This has been done by excellent writers upon anatomy, but many of them have been too particular for our present purpose. As we think it may not be in the power of our readers to procure those works which are written in a slight manner, such as is at present required, when it will be necessary; for this reason the following

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lowing general systems of osteology and myology may be here introduced with great propriety.

The system of the bones or skeleton, is, as it were, the solid frame that contains, defends, and gives stability to the softer parts, and to which they are ultimately attached, and consequently this bony fabric has of itself the general form, size, and appearance of the entire body. This solid frame is most artfully composed of different parts, jointed to one another, so as to be capable of every useful and graceful motion in the whole and in all its parts: and the various bones and pieces of which it is composed differ in size, form, and strength, in position, connexion, and motions, according to the uses and exigencies, and even the beauty of every part, to which they often add a certain grace and character, by obscurely appearing here and there through the softer parts, even in the living body.

The head is, as it were, the dome or cupola to the whole edifice. In this highest part the senses are placed, and the brain defended by solid bone. The head, like the rest of the body, derives its size, form, proportions, and principal characters first from the bones; but the softer parts that cover them add life to the motions and the finishing beauty, in which last the hair also concurs; and it is surprising how so few simple organs, and so thin a covering to the soft parts, are capable of such infinite variety of forms and expressions as we see in the human countenance, affording an endless field of study. In the head the bony part is a more complete fabric, and comes nearer to the form of the living subject than any other part of the skeleton; being the seat of so many noble organs, and the chief part to be studied by the painter, it deserves the first place, according to the custom of some anatomists.

Here vestiges of the smooth polished bone shew themselves in the forehead, in the ridges all around the eye, in the hollow of the temples, on the nose and cheek bones, and margin of the jaw, giving great pleasure to the painter who understands anatomy.

Next comes the elegantly bent pillar of the spine, strong, yet flexible, by consisting of so many parts firmly tied together. This bony column, at the same time, gives size, strength, and motion to the body, attachment to many surrounding parts, and being hollow through its whole length, serves to conduct and secure the spinal marrow, and to transmit nerves to every part of the trunk and extremities. The spine consists of four and twenty vertebræ, generally increasing in size as they descend, and gradually varying in their figure; seven of these vertebræ belong to the neck, which admit of peculiar and considerable motion, and allow of many graceful movements to the head and neck. The next twelve belong to the back; these are almost rigid, and admit of very little motion: to these, as to a solid basis, the twelve ribs of each side are attached, which, together with the sternum and their own cartilages, form a kind of yielding cage or basket to contain the heart and lungs. This bony cage admits of a small motion when we breathe; to the lower margin of it all around is fixed the diaphragm, a transverse muscular partition, dividing the thorax from the abdomen, a main organ of respiration, and of other functions. The five lower vertebræ belong to the loins, admit of considerable motion, and are of great use in the firm and graceful attitudes, and flexions of the trunk, and in many offices of common life. Between the ribs and pelvis there is a great void in the skeleton, especially before. In this space lie many of the abdominal viscera, with the parts that contain and cover them, making on the fore-part the beautiful swell of the abdomen, elegantly marked by the containing parts.

To the superior part of the thorax, by means of the transverse clavicles, and of large and strong muscles, are appended the upper extremities, which, at the shoulders, give breadth to the thorax above, and serve many noble purposes of strength, of art, of defence, of expression, and of beauty. These are divided into the shoulder, consisting of the clavicle before, and the thin broad scapulæ behind, which, moving free among the muscles, by their means govern the motions of the whole arm, and its triangular form has a most beautiful effect, seen floating among the soft parts in the naked figure; and indeed the whole shoulder is a most noble part, and a fine exercise to a painter; for, besides many large muscles, the bones themselves also most beautifully and distinctly appear. Next comes the arm bone, capable of a large and free motion, whose round head at the shoulder, in lean persons, obscurely appears, and at the lower end its condyles are evidently seen, where it is joined to the fore arm; this consists of the radius and ulna, which move upon the arm bone with the more confined motion of flexion and extension; but for the sake of the hand, and its various and important uses, the radius and ulna likewise revolve upon each other lengthways, in a very curious and singular manner, turning the hand alternately prone and supine, as upon an axis. Lastly comes the hand itself; it consists of the carpus, metacarpus, and five fingers, the thumb being, as it were, an antagonist to the other four; the whole together, by its general form, and different parts and motions, serving almost every possible use, and its various attitudes being capable of great beauty and variety.

We come now to the pelvis and lower extremities; the pelvis supports and defends the lower viscera. The back part, or os sacrum of a triangular form is, as it were, the basis and continuation of the spine, whose vertebræ it obscurely resembles, and performs its offices by receiving the extremity of the spinal marrow, and transmitting nerves to the surrounding parts. The lateral and fore-parts of the pelvis, though fixed and immoveable, answer in some respects to the scapulæ and clavicles, as they afford sockets for the thigh-bones, and also a seat to many strong muscles that belong to the trunk and extremities. The upper margins of the ossa ilium appear gracefully in the living body on the fore-part, and form a kind of boundary between the belly and the thighs. The spines of the os isium, as of the vertebræ, obscurely appear in bodies not loaded with fat, and also the great trochanter is deeply immersed among large and strong muscles; but at the knee the bones make a very fine appearance, *viz.* the condyles of the thigh-bone, the tops of the tibia and fibula, and the patella, a bone so beautiful and so useful in the government and defence of this joint. The bone of the tibia appears through the whole length of the leg, and at the lower part of the tibia and fibula, the two ankles elegantly appear, and fix the bounds between the leg and foot. The foot, a thick and solid part, serving as a basis and support to the whole body, consists of the tarsus, metatarsus, and toes; in the whole, and in every part, it in some sort resembles the hand, and, although much inferior, comes next to it in beauty.

The skeleton is one simple system of solid parts, serving as a jointed frame on which to build the rest of the body. But the muscular or fleshy parts that clothe and move the skeleton are soft, and form a more various and complicated system, consisting of different strata or layers, one covering another, and divided into numerous portions of different size and figure, regularly disposed over the whole body, composing a great part of its bulk, and the chief cause of the size and form of the members; for when stripped of its uniform coverings, *viz.* the skin, and cellular or fatty membrane,

the external muscular figure nearly resembles that of the entire body.

The muscles differ greatly in their size, figure, and other particulars, according to the parts where they are situated, and the uses to which they are applied. But in general they are composed of fibres; the middle part or belly being large, soft, and red, and the extremities or tendons, which are generally inserted in bones, being smaller and harder, white and shining. The red part is properly the moving power, and acts by contraction, during which it swells, and becomes hard and shorter, sometimes to a great degree, and thereby pulls the parts to which its extremities are affixed. The muscles are governed by the power of the will, except the fibres of the heart and of the intestines, &c. which are of all others the most irritable; the muscles of respiration act in both ways. The muscles can act in a most gentle and delicate manner, and also with great strength and velocity, though much of their power is lost by the places and manner in which they are often situated and inserted on the parts to be moved. The causes of muscular motion are difficult to be accounted for.

The muscles are arranged in their places, and allowed to slide upon each other by means of the cellular or fatty membrane; and their fibres are lubricated every where by the oil it contains, and in the fabric of the body, and of the muscles themselves, many contrivances are used to assist their actions. The muscles are in sufficient number, and so disposed and contrived, as to be a warm covering and defence to the more inward parts, as well as to move the joints in all the directions they are capable of, to assist in many functions of the body, and to place and retain it in every possible attitude; in doing which the particular muscles seldom act alone, but in the most various manner co-operate with, or oppose each other; so that the whole muscular system may be considered as one muscle, every fibre being under the power of the will, at the pleasure of which the whole body, and all its parts, are at once or alternately moved and governed, as it were, by so many bridles. Besides this grand purpose of the muscles, they likewise serve the general uses of the animal machine, being the chief cause of respiration, and of the circulation of the blood and juices; also promoting digestion, absorption, secretion, excretion, nutrition, and growth; hence they likewise prevent and cure obstructions, and other diseases, and by their incessant action, are one great cause of the hardening and wasting of the body, and the decays of old age.

Although we think too great an attention to the minutiae should be avoided by the student, especially at the first, yet it will be worth the attention of the young artist to examine the nature of a muscle a little more carefully; and to know that the fleshy part of a muscle consists of a bundle of thin long threads, and is divided into a great number of fasciculi, or little muscles, each inclosed in its proper membrane. The fasciculi of muscular fibres have not always the same situation in regard to each other, nor run in the same direction, but sometimes run parallel to themselves and their tendons, and are sometimes disposed obliquely both to their tendons and to each other; but information respecting circumstances of this nature will be more completely obtained by inspecting the muscles themselves. A sight of the object will impress the knowledge conveyed by the anatomist in the most forcible manner upon the student's mind.

Some have thought that the most proper method for the painter to begin his studies is under the instruction of some able anatomist; but, unless the anatomist understand the arts of design, this we disapprove, and think it best that the assistance of dissections should rather follow than precede the

general practical knowledge. It is therefore recommended that the student provide himself with some of the tables which anatomists have published. The tables of Albinus are deservedly esteemed; and what are, perhaps, better, those cut in wood, and which illustrate the ancient folio volume of Vesalius, edited in 1543, said to be drawn by Titian; but whoever the artist was, they are delineated with great judgment, the figures are graceful, the muscles are represented in a robust state, and properly swelling to the action of the figures: if this be of no great consequence to surgeons it is to painters. These tables may be copied with great advantage. We suppose the student to be expert in drawing, which is the first step to be taken in the painter's art. Tinney's compendious treatise of anatomy is also to be recommended: it is a selection made with judgment, although the plates are copied; the shapes and situation of the external muscles, their names, attachments, and uses are mentioned. This compendium was published by Sayer, in Fleet-street, in 1772. While such representations as these are copying, which should not be in a careless but in a decided and determined manner, the student will attain a great deal of the general knowledge of anatomy, especially if he should write upon the margin of his different views of the skeleton the names of the principal muscles, which, in the complete figure, unite themselves by their tendinous attachment to the bones, with lines drawn to their origin and their insertion; and also if the drawings of the muscular figures in this work have in their margins the names of the muscles, to which may be added their characters as flexors or extensors, and the limb they bend, extend, or rotate, pronate, or supinate, &c. Tinney's compendium, before mentioned, will readily assist in this particular, although the original figures in Vesalius are more recommended as objects to copy after, if that work can be procured.

The next step we recommend is to obtain the use of a good skeleton, supplied with a careful imitation of the natural cartilages and its articulations. With this should be compared the drawings which the student has been directed to make, and the different views they represent, as in front, sideways, or behind, gratifying his curiosity, and imprinting the object upon his memory. To the complete bony fabric, the head, trunk, and limbs should be obtained separate, for convenience, and their more particular inspection; and some of the bones singly, that the joints, &c. may be more carefully observed. We advise the young artist to draw these in different views; first, the separate bones as large as nature, marking the tuberosities and ridges, which give attachment to the muscles, the condyles of the joints, &c. with written remarks on the margin. We conclude that the student has been initiated into the principles of grace, and knows, in some degree, how to produce a figure in easy progressive motion, or prepared for such motion, which is what painters mean by grace (see GRACE.) In the skeleton he will observe how the joints, &c. by their mechanism, admit the muscles to produce these effects in the living body: this will open a great field of contemplation respecting his art, and in the wonderfully contrived object before him, the profound wisdom of his *Maker*. When he has thus advanced to an examination of the skeleton itself, he may derive much assistance from an anatomist, who knows how to point out to the artist such parts as will be requisite in his art; adapting himself properly to the degree of attainment which the student has made. In the want of such a friend, however, the works of anatomists are recommended.

The following hints, we apprehend, will be of use; they are few and short, though they may be important, as we only mean to give directions respecting the manner in which the painter is to pursue his studies.

It is of no great consequence whether we commence with the head or the pelvis: but in conformity to the system already given, the head is first mentioned; in which it was observed, the bony part comes nearer to the form of the living head than any other part of the skeleton. This should, like the rest, be drawn carefully; the face being complicated in its parts demands great attention, which may be deferred for the present. Let the artist, however, examine the mastoid process of the head, which will be important to him in future; let him observe how the head is placed upon the atlas of the spine, which moves freely upon the tooth-like process of the second vertebra. Let him observe the general support which is given to the trunk and upper extremities by the basis of the several vertebrae, the degree of motion which is allowed to each part, much in the neck and loins, little in the back, and none in the vertebra of the sacrum; how near the centre of the body this is placed, although the spinal processes of the vertebrae in the back approach so near to the contour of the figure, forming that ridge which is usually called the back-bone; yet the pillar of support which is composed by the basis of the vertebrae, articulated in a peculiar manner to each other, is, upon the whole, much nearer to the centre of the body than will be supposed upon the first inspection. Although the figure of each rib, which is attached to the spine, may be examined in future with more attention, yet, at first, we recommend the consideration of the whole together, that is, the general figure of the ribs with the sternum and cartilages, as the student's proper object, for consideration; the sudden turns which the ribs take backwards from their connexion with the spine, after which their curvature is not so sensible; also that the capacity of the upper part of the trunk is very small when compared with that which is below, contrary perhaps to what might be expected from a sight only of the living figure: he may be inquisitive respecting the extent of motion of the ribs while breathing, in which his anatomical instructor can greatly assist him. Let him examine the junction and situation of the clavicle; the degree of elevation to which the other end of the clavicle being attached to the acromium of the scapula, is permitted to rise by the elevation of the shoulder. The scapula should be carefully drawn as well as inspected, the outside of the parts behind, and especially the spine of that important bone; how much it can be moved by the elevation of the arm above the head, and how much nearer the bases of the scapulae can approach each other, when the shoulders are drawn backward; also how distant from each other the bases are, when the shoulders are drawn forwards. Several views of the end of the scapula should be delineated, both in connexion with, and without, the bone of the arm, marking the acromium and coracoid process. The inside view of this bone should be sketched with the clavicle and humerus removed; that the mind may be clear in these parts, although they are very much hidden by muscles, &c. in the living figure. When the nature of the ball and socket-joint of the humerus with the scapula has been well observed, nothing need, at present, to be noticed, but to draw and mark that bone of the arm, and notice the parts upon it which give attachment to the muscles, until the student come to the extremity united to the ulna; which, we think, should have considerable attention paid to it, both as united with the bones of the fore-arm, and separate, that the hinge-joint may be well understood, being careful to examine the condyles, and also the smaller tuberosities, &c. If he can have an opportunity of drawing from a natural skeleton (a natural skeleton is one prepared with its own proper cartilages) it will be greatly advantageous to him; and more so, if he can inspect and draw from these parts when newly dissected. We

also advise that particular attention be given to the inner and outer protuberance of the humerus, giving attachment to some very important muscles with which artists ought to be acquainted.

The ulna should be drawn separate and in connection with the radius, its hinge-joint also with the humerus: this should not be past over hastily. Its extremity at the elbow should be very much considered, and the permission it receives by the hollow of the humerus, &c. of sinking, as it were, into that hollow, when the fore arm is extended. The same attention must be paid to the peculiar shape of the radius, the junction of the upper extremity of this bone with the ulna and humerus, the rotary motion which is admitted, in pronation and supination; the size of these bones at the elbow and at the wrist, the head of the ulna being larger above, smaller below, and the contrary in the radius; as well as the general shape and proportion when both are united together. Lastly, with respect to the present consideration of the radius, we call particular attention to the tubercle, in which is inserted the tendon of the biceps muscle. The compact bones of the wrist or carpus being articulated to the radius, with the considerable motion it allows, will be an object to which, even at first, the attention is due, and its union with the hand, &c. The metacarpal bones, and those of the fingers may be well understood by making careful drawings.

We now descend to the pelvis, composed indeed of several bones, but perhaps better understood by artists, when they are together, than when separate, as they admit of no motion in themselves, except at the coccyx: but the motions of the pelvis itself, upon the thighs, demands, we think, even at the very first, as much attention, if not more, than any other bone of the human body.

The understanding of the turns which this compages of bones take in standing or moving figures, will particularly assist the informed artist to produce graceful effects in his imitations, or, at least, without knowledge of this particular, it is by accident only that he can produce his figures in graceful postures. When by drawing this basin for the abdominal viscera (without concerning himself with its contents), he is become acquainted with its form, he should study in the following manner: let him observe the upright posture of a graceful figure, standing upon one leg, right or left; let him next consider how the spine of the ilium will appear in that state; then place the pelvis so before him, and draw it carefully, the inclination of that important part being according to the posture. This hint will do for a person who is eager in the pursuit of knowledge, in all other states in which the action moves the pelvis; and will exhibit to him the different nature of the study of anatomy, in a surgeon or a painter, or to what different ends the same study may be applied.

The ball and socket-joint should be well considered, where the femur is articulated with the ilium, the whole form of the thigh-bone should have due attention paid to it: particular notice should be taken of the great trochanter, and also some observation should be made upon the ridges in the femur. This should be studied by the artist; being set in the different postures that it sustains, under particular actions, as was before directed for the pelvis; but the condyles, and the nature of the joint, and its tuberosities, demand strict attention: in connection with the large bone of the leg. It should be observed, that this joint is very ridged when the leg supports the figure, and admits of no rotatory motion; this joint should also be studied without, as well as in connection with the patella. When the leg is firmly extended, as in supporting the body, the patella is drawn up by strong muscles, and rises above the joint, being then stationed on the outside of

the head of the femur; but when the leg is bent, the point of the patella again falls within the joint.

By carefully drawing the tibia and fibula they will be understood; but the protuberances forming the ankles must be observed, and the faithful delineation of them stored up in the mind; noticing that the inner ankle, formed by the tibia, is higher, and advances more forward than the outer ankle formed by the fibula. The heel and tarsal bones with the metatarsal, should be studied as they are united, noticing the manner in which the bones of the leg are placed upon them, together with the whole of that finely constructed arch that bears up the whole body.

In addition to what has been said upon the study of the knee, the aid which the natural skeleton affords, should lead the draftsman to correct knowledge of this important and beautifully formed and useful joint. If he has opportunity, it should be also studied after a fresh dissected subject, with the leg in extension, as well as in its state of flexion, and, as before hinted, his observations written on the margin should accompany the drawings.

In contemplating the articulations in the natural skeleton, it will be observed, that the lengthening of the body at one time more than another, is not by drawing out like a worm one part of the body from another, but by the muscles bringing the bones more perpendicularly over each other. This leads to the consideration of the *muscles*.

“A muscle is composed of two tendinous and slender parts,” as Count Algarotti expresses himself; “one called the head, and the other the tail, both terminating at the bones, and of an intermediate part, called the belly; the action of a muscle consists in an extraordinary swelling of this intermediate part, while the head remains at rest, so as to bring the tail nearer to the head, and consequently the part to which the head of the muscle is fixed, nearer to that part into which the head of it is inserted. There are many motions, to effect which several of the muscles (for this reason called co-operating muscles) must swell and operate together, while those calculated to effect a contrary motion (and therefore called antagonist muscles) appear soft and flaccid. Thus, for example, the biceps and the brachizus internus labour; and when the arm is to be bent, and become more prominent than usual, while the gemellus, the brachizus externus, and the anconæus, whose office is to extend the arm, continue as it were flat and idle. The same happens respectively in all the other motions of the body. When the antagonist muscles of any part operate alone and at the same time, such part becomes rigid and motionless; this action of the muscles is called tonic.” It is to be wished that the student may be informed by a dissected subject of the nature of the different sorts of muscles, as those whose fibres are direct, like the biceps, of others which are oblique, as the pectoral muscle, of those which are called penniform or feathery, as that which moves the thumb. Those which are round, being internal or little seen, do not belong to his studies. He should also be taught that the tendons admit of no contraction or extension; that they are long for convenience, and that they are in general confined near the centre of motion, by annular ligaments, to prevent deformity, and also to admit of a more quick motion, as in the wrist; but where the contrary arrangement renders them more useful, they are not thus confined as in the hamstrings, and the bend of the fore-arm.

He should know that the same muscles are used to draw the body to the arm, which draw that member to the body; also, that those muscles which bend the thigh on the body, when the feet are fixed, bend the body on the thigh; that some muscles have not all their motions engaged in every action in which such muscles are employed, but only part of

them, as the deltoid, the portions of which have various motions; such portions, however, never act without the concurrence of some other assisting muscle with them.

These things being premised, the student is to be directed how to proceed, and what are the readiest means. We before directed him to the tables published by anatomists: this advice, we suppose, to have been complied with. It is, therefore, recommended him to draw with care from a good cast of a muscular figure, after the skin and other integuments have been taken away by a skilful anatomist. In the Royal Academy there is a valuable figure of this kind, which is strongly recommended to those who can have access to it; and where he will also find other subjects of this nature worthy his attention, as well as proper instruction from a very respectable professor of anatomy; but in the want of the instruction which that institution has provided for its students, &c. and the use of the large anatomical casts, which it possesses, a cast should be procured from those shops which supply artists with anatomical and other figures in plaster of Paris. Mr. Banks made an excellent model after the original, which we mentioned to be in the Royal Academy, about three feet in height, which was cast in plaster; and we recommend it above any others that we know can be obtained. The figure (of which this is an admirable copy, though of reduced size) was prepared for the artists by the late Dr. William Hunter, to which every attention was paid both by him and the artists who assisted in placing the figure in a graceful attitude.

The unfortunate subject of that cast was executed for murder, the body was taken from the place of execution as quickly as possible, and while warm, and the muscles capable of contraction, to which their nature disposes them (even without the influence of the will), the body was set in the posture it now stands, and in which state it was dissected; then the cast, of which we speak, was produced. Many similar attempts have been made, but this appears to be by far the most successful of any figure we are acquainted with, which arises from several concurring circumstances; such as its being a well proportioned figure, its attitude graceful, the limbs so disposed as to shew each part distinctly, and its having been prepared by a great anatomist. Being a cast from nature itself, the mind has an unbounded confidence that he who studies from it cannot be misled by the mistakes of an artist; and that the figure being set while the muscles were warm, they have, in a great degree, the proper swell, comporting with the state of the limbs. Mr. Spong made a small model of this figure, the bronze casts from which, for their size, are excellent. There are several other casts to be met with which may greatly assist the student: that after the anatomical figure which was modelled by Mr. Rubiliac, is very natural and good; there are also some executed by the French Academy. We recommend the head and neck as large as life from the French, and also the trunk and upper extremities in a reduced size; one side having the external muscles taken off, and the other side retaining them for the sake of comparison. Another of the leg and thigh of a man with half the pelvis, exhibiting the psoas muscle; the last which we particularize, and deserving as much notice as any, are two dissected arms, cast under Dr. Hunter, which are fine exhibitions of muscular strength. While the student is in practice, and as his judgment expands, or his fellow practitioners recommend, he will find assisting objects of this nature presented to him in abundance. These hints concerning the casts, &c. may be of use to some of our readers, especially those who are situated at a distance from the metropolis.

Whatever cast of the muscles the student's judgment or
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convenience has selected, he ought to examine and copy different views, writing upon the margin (as we directed concerning the study of osteology) the names of the muscles, their origin, insertion, and their use, as flexors, extensors, and rotators; observing, with the same attention, the situation of the bones behind the muscles, and where the projections on the surface are caused by them. While the young artist is making such drawings, he will do well continually to examine and compare the living figure with the anatomical cast; the figure being placed in the same attitude with the object of his imitation; tracing with the finger the bones and muscles of the living subject to ascertain the causes of the effects he observes, and which he cannot otherwise account for. This will greatly facilitate his knowledge.

A common-place book for anatomical sketches, as well as the complete drawings he has been advised to make, will be very useful, in which the separate parts may be delineated; beginning with the head, and descending to the lower extremities, in the following manner. First, suppose it to be the front view of the head and face of the skeleton; then he may draw from a plaster cast of the head, &c. with the skin taken off; such as the large dissected head, from nature, which we mentioned as being prepared by the French academy; or if this be not at hand, the head from any of the before-mentioned anatomical figures. Then a drawing should be made in the same view from a living person, one in whom the muscles are to be distinguished, the subject not being covered too much with fat. Several views of the face should be treated in this manner.

What has been said of the head will apply to the neck, trunk, the arms, hand, thighs, legs, and feet; this practical method will be of considerable use to the artist, and if the separate parts in different views be also drawn from some of the antique figures, such as are placed in a similar posture, his taste and style will, at the same time, be greatly improved; it will naturally suggest itself, that such of the antiques as are robust and herculean, will be most proper for him at first to select, for such purposes; these objects will lead him not only into the knowledge of the parts, but he will naturally imbibe the right style of representing muscular motion from them. We are acquainted with no critic who has observed any anatomical error in the antique statues, or an instance in which the profound knowledge of anatomy does not appear; none who have detected a false swelling of the muscles, or any ostentatious display of anatomy; for those well-informed artists exhibited no more of their knowledge than was proper, as it respected the character of the subject, either delicate or robust, at rest, in motion, or in violent exertions.

This remark, we believe, is strictly due to the statues and fragments of the ancients, though it may not be so applicable to the valuable works, in other respects, of the great *Michael Angelo* himself; whose figures will, notwithstanding, be of a very improving nature, especially while the artist is in pursuit of anatomical knowledge; but he should be cautioned not to follow even this extraordinary man in representing these appearances too strong, where it is not requisite; nor in giving the swelled motion of the muscles to the whole body and limbs, flexors, and extensors, at the same time,—which cannot be, but in rare instances, as in sudden starts of surprise or agony. A common-place book of the nature which has been recommended, besides the original exercise, will restore to his memory the impression which time may efface from it. This being the student's own work, a sight of it, and his other studies of the same nature, will more assist his recollection, concerning the subject he has formerly considered, than a much

longer examination of prints or drawings by other persons can be supposed to do.

In order to prevent embarrassment amongst the great number of muscles, the following arrangement is made; by which the student's attention at first may be circumscribed, and *these* demand his particular attention, *viz.*

<i>Temporalis</i>	<i>Rectus abdominis</i>
<i>Zygomaticus</i>	<i>Latissimus dorsi</i>
<i>Masseter</i>	<i>Teres major</i>
<i>Sternohyoidæus</i>	<i>Infraspinatus</i>
<i>Sternomastoideus</i>	<i>Splenius</i>
<i>Latissimus colli</i>	<i>Sacrolumbaris</i>
<i>Cleidomastoideus</i>	<i>Longissimus dorsi</i>
<i>Trapezius or cucularis</i>	<i>Gluteus major</i>
<i>Rhomboides</i>	<i>Gluteus medius</i>
<i>Pectoralis</i>	<i>Triceps</i>
<i>Deltoides</i>	<i>Psoæ</i>
<i>Biceps</i>	<i>Membranosus</i>
<i>Brachialis internus</i>	<i>Sartorius</i>
<i>Gemellus</i>	<i>Gracilis</i>
<i>Axonæus</i>	<i>Biceps femoris</i>
<i>Pronator teres</i>	<i>Seminervosus</i>
<i>Supinator radii longus</i>	<i>Semimembranosus</i>
<i>Flexor carpi radialis</i>	<i>Vastus internus</i>
<i>Flexor carpi ulnaris</i>	<i>Vastus externus</i>
<i>Palmaris</i>	<i>Rectus femoris</i>
<i>Perforans</i>	<i>Tibialis anticus</i>
<i>Perforatus</i>	<i>Peronæus</i>
<i>Extensor digitorum</i>	<i>Gastrocnemius</i>
<i>Extensor minimi digiti</i>	<i>Soleus</i>
<i>Extensor pollicis manus</i>	<i>Extensor digitorum pedis</i>
<i>Serratus major anticus</i>	<i>Extensor pollicis pedis.</i>
<i>Obliquus descendens</i>	

These muscles selected, and thus arranged, are few in number, and will not perplex the student; considering how important they are to his art, he should not be discouraged when informed, that with most of these he ought to be intimately acquainted. With respect to the psoæ, and one or two more of the internal muscles, it is necessary only to know that they exist, and where they are situated; but most of the other muscles, thus particularised, should be very familiar to him, not only where they are placed, but how they appear when at rest, in common action, or in violent exertion; and if the method we have recommended be adhered to, a tolerable capacity will attain a great degree of knowledge respecting the muscles, as well as the bones of the human figure.

In the Royal Academy will be seen, beside that already mentioned, another muscular figure, prepared by Dr. Hunter, one side only of which has the skin, fat, &c. taken off, that a comparison may be made with the other side of the figure, in which it may be seen how much thicker some parts of the human body are covered than others. The student ought to have information respecting this circumstance by other means, if he has not access to this figure. It should also be known that although there is a considerable difference in the size of the muscles in different subjects, between those who are accustomed to labour and exercise, and those who are more sedentary; yet it is the cellular membrane, or fat, which principally constitutes the difference between corpulence and meagreness, and not the muscular fleshy substance of the body; and also that children's muscles are in proportion with adult, according to their size and age: the painter will see the propriety of this remark.

One more observation is necessary to be made respecting the covering of the muscles, which is concerning those tendinous expansions that wrap up and bind them together

in many parts; these are usually strong, although thin and transparent; on that account they cannot in general be so well expressed by casts or drawings, but in the dissected subject, which the student should inspect if possible; the skin and fat being taken off, the expansions are discovered by their white and shining appearance. We advise all young artists to obtain instruction respecting these aponeurotic expansions, and particularly the fascia, which arises from the tendon of the biceps muscle inserted into the radius, and also from the palmaris covering the palm of the hand, and the expansion from the glutens, where it is united with the trochanter, covering the muscles of the thigh; he should consider this as no trivial object of his concern. In the fore-arm the structure from the aponeurosis is so strong as greatly to affect the form of that part of the limbs where it passes over the pronator teres, flexor, carpi radialis, palmaris, &c. and it is strong enough to shew itself, even in casts from nature; in the cast from an arm prepared by Dr. Hunter, this is beautifully preserved, although a dissected arm will shew it better. It will perplex the student to account for such appearances in general, although he may have the most perfect knowledge of the bones and muscles, unless he be informed respecting this circumstance also.—In various parts of the body some of the larger veins appear, such will be found upon the surface of the subjects, from which the painter makes his studies, and therefore he need not to be particularly directed, nor concerning those which reddens the parts upon exertion, as the fore-arm, when the hand is strongly grasping a sword, &c. or the redness and paleness occasioned by the different passions of the soul. See P A S S I O N S.

We might describe the action of the muscles we have selected, and in the order they are arranged; but this would be descending to particulars more than we proposed, especially as they are best learned under the immediate instruction of an anatomist, pointing them out on the living figure, or which the student may observe upon his own person in a glass, (a method much recommended by the late Dr. Wm. Hunter,) or upon a living muscular subject. We shall, however, particularize a few muscles as specimens, in order to lead him into the proper method, by which he is to proceed with the rest, and also present some observations for his consideration.

A figure standing gracefully cannot, with propriety, be said to be in motion or exertion, but many of the muscles are in exertion to produce even this effect, *i. e.* those which support the figure in the erect position, especially the muscles of the standing leg and of the loins.

When the body is prepared by the mind to receive and support a weight, the muscles are in exertion, prepared to support what it expects to be received: should a man offer to another any heavy weight, covered with a light substance, as cork, &c. bringing it with such an air as to imply it was not heavy; from the mind being thus deceived, there would not be a preparation or exertion of the muscles adequate to support it, and consequently it would fall and endanger his toes, although the person would be more than capable of supporting it under other circumstances. On the contrary, if a body of a light nature be thus presented, covered so as to represent a very heavy substance, and the person conveying it seems to exert himself as bearing a considerable weight, so soon as the palms of the hand come in contact with the pretended heavy substance, the muscles would be so prepared to exert themselves, as immediately to heave it into the air. This may be seen also in the muscular exertion of a person catching a ball projected with a strong degree of force. An artist may obtain information respecting the propriety

of muscular exertion, from the ancients, by placing a living person in the action of any of the antique figures, as performing what they represent the figure doing; strictly comparing with the figure the several muscles and limbs, as well as the general form; whether standing gracefully, as the Antinous, more exerted as the Apollo Belvedere, or in violent exertion, as the Laocoon.

This method is the best we can recommend for the improvement of the student's taste and judgment, other methods will conduce to his knowledge of the parts; but this will communicate the idea of graceful motion and the proper expression of the figure. Studies from the living figure should be continually made, and those who are wise and are not prevented by other avocations, should in England, as in France and Italy, never forsake the life academy, in which school much of practical knowledge will be learned; but the student's taste must be formed from the antique figures, in all that relates to proportion, elegance of form, and anatomical propriety. A sound knowledge of anatomy, is the ground of the painter's art; it is, however, better to know and produce the effects like the ancients, after their deepest researches, so as to hide the artifice by which those effects are produced. *Ars est celare artem.*

Although it is not our intention to describe the minutiae of the muscles, included in the list, yet we shall notice a few of them and some other circumstances, as a specimen. Dr. Hunter has often been heard to say, that the principal method he used in order to attain the knowledge of muscular motion was by consulting his own body, because he could give the action to those muscles he wished to examine, and he strongly recommended this method to others. This trial, from so eminent a character, will be adopted so far at least, as it respects the intricate muscles of the fore-arm, and by a glass he may inspect the front of the whole figure; but such parts as cannot thus be examined, must be sought for in another person. When a living muscular subject is placed before the student, (with an assistant to oppose the effort which he is to make, in order to retain the muscles in action for a short space of time, while they are under immediate notice), the commencement may be with the head. The masseter and temporal muscles will be in exertion when the teeth are strongly pressed together; this exertion will be seen in a man when he is lifting a great weight; these muscles should be felt as well as seen, that the mind may be quite satisfied respecting them. The effect of the zygomatic muscles in drawing up the corners of the mouth will be perceived when the subject is smiling, &c. Although these muscles do not always shew themselves, they ought to be considered attentively, as they have a great influence in expressing the passions. Sternohyoideus will be in action when there is an attempt to swallow any thing. We suppose all the muscles in our arrangement have been well considered; and that the student has become acquainted with their form, origin, and insertion, and also with the use of the separate muscles.

The sterno-mastoideus draws the head downwards, forwards, and sideways; now in order to notice the action of this muscle, first let the man turn his head over the right shoulder, when it will be found that the portion of this muscle, which is on the left side, will belly out, consequently it will grow tense, and shorten itself, while that portion which is on the right side, will be longer and flaccid; this will be evidently seen, and may be felt and measured with a string, that the student may be perfectly informed respecting a muscle so important to all artists. The face should be then placed in the centre, and the person must be then directed to endeavour to bring his face down upon the breast,

Breast, while an assistant places his hands upon the forehead of the living model, to oppose his bringing it down; while making this attempt the sterno-mastoideus will be seen in strong action in both portions, and be very conspicuous; but when the head is in the centre, and in each way in the same direction with the body, and that perfectly upright, this muscle will not so visibly shew itself, excepting near the insertion in the sternum.

The pectoralis will be seen in very strong action, by the man endeavouring to bring the fore-arm to his breast, the hand being lifted up about the height of his shoulder; if the assistant, at the same time, make an effort to keep the arm outwards. If the man with his arm thus raised, move it inwards and outwards several times, an opportunity will be given to observe the motion of this muscle: so also if the hand be lifted higher than the head, then brought downwards and inwards, he will also perceive that the pectoralis should properly be considered as a muscle belonging to the arm, notwithstanding it is situated upon the breast.

Thus the flexors and extensors, pronators and supinators, should be examined in motion, after their place and use have been rendered familiar by the order and method of study we have been detailing. What has been advanced upon the study of muscular motion in a few instances, we hope, will be a proper clue to all the other external muscles; many errors may be avoided, and much time will be saved, if the several parts be pointed out to the student, by a skilful anatomist, who will demonstrate to him, that although it may be proper to remark the action of the separate muscles by themselves, yet still no action of a limb is performed without the co-operation of several muscles. This should become as evident to the mind of the artist, as that the deltoid elevates the humerus, or that the biceps is a flexor of the fore-arm.

He will, by such an instructor, be informed that some of the muscles, or parts of them, are so thin, as to shew the motion of those which lie underneath, as the latissimus dorsi; and although others are deeply seated, yet they have great expression in some actions, as the longissimus dorsi, which will become very conspicuous, when the body of the figure, being bent downwards, endeavours to regain an erect position.

The student should let the figure before him raise his head and depress it again; turn it over one shoulder, then over the other; this may be done quickly and repeatedly, while he makes his observations on the muscles in the neck.

He should direct the man to bow his body downwards, and bring it up again repeatedly, at one time more quickly than at another, while he observes the motion of the rectus abdominis, &c.

The model should also be directed to draw in his breath, to shew the boundary of the true and false ribs, which must be well observed. He should make him stand upon one leg, then upon the other, shifting them continually more or less quickly, while he notices, with great strictness, the change this will cause in the spine of the ilium, and the other parts of the pelvis; on this we lay particular stress, as in a preceding instance, when directing the study of the bones, without the muscles.

He may now examine the motion of the patella, and the muscles rectus and vastus of the thigh, with the same care.

He should cause the man to lift up one foot, and bring the heel to the other knee, in order to exhibit the motion of the sartorius muscle.

By quickly moving the toes, the man will shew the muscles in action, which give them their motion.

He should be directed to elevate and depress the arms, as

well as bend the fore-arm, to shew the performing muscles of those parts; to turn the palm of the hand upwards and downwards, which will exhibit the pronators and supinators. The wrist bent and extended, and the fingers quickly moved will shew their muscles.

When the back of the figure is seen, the same method should be pursued to express those muscles which are behind upon the trunk, and the extremities; carefully noticing the motion of the scapula, especially the different situations of that bone, when the arm is lifted upwards, and brought downwards; likewise examining the motion of the muscles in the side view of the figure in the same manner.

Particular attention should be given to those muscles which form the edges of the armpits, and of the hamstrings of the thighs; and lastly, as study and drawing ought to be considered by the painter as synonymous words; we advise that such things as strike the mind, when they are newly discovered, should be noted by the student in a book kept for the purpose, with such sketches as may tend to recal to his mind in future, or describe to others, what cannot be so well conveyed by words alone. Advice of this sort has been repeated under each head of study, as we know the consequence it may be of to some of our readers.

Dr. Brisbane judiciously observes, respecting comparative anatomy, "that the painters should at least be acquainted with the anatomy of those animals which are most commonly introduced into their works, particularly of that noble and useful animal, the horse, and of that faithful companion of mankind, the dog; as for other animals, as they more rarely appear in pictures, and are less particularly known and attended to, a slighter representation of them may generally suffice." We, however, believe that birds should be examined in the interior, as opportunity offers, especially the skeleton. In respect to the horse, we recommend the painter to read, and examine the valuable labours of Mr. Stubbs and Mr. Blaine, which we conceive to be an honour to our country. He may also be furnished with an anatomical cast of an horse, which is sold at the shops; from whence information in this respect may be derived, especially after the human figure has been well understood; for, by knowing which are flexors, and which are extensors, in general, the student will be in a great measure informed how they will act in this animal. Assistance will be also gained by observing the animal itself, which he will have before him while he is painting it. Some animals, but especially leopards and tigers, are formed so much like a cat, that this common animal will be very useful to him; their muscles may be judiciously expressed, if a dead cat be put into the posture of the animal to be represented, before its muscles are cold, and then the skin being taken off, it will be an almost perfect direction to the painter, who is familiarly acquainted with the action of the muscles in general.

See the names of the MUSCLES of the human body in the Cyclopaedia, their character, nature of their fibres, origin, insertion, and uses, to which our readers are referred for more particular directions concerning them.

ANATOMY, *Veterinary*.—Human anatomy, in point of interest and importance to mankind, evidently holds the first place; that of brutes, particularly such as are domesticated and employed for various important purposes in society, in respect to their anatomy, holds the second place. The anatomy of these, without being entered upon so circumstantially as the human anatomy, deserves a due share of regard equal to its importance. To describe each part of the horse individually and separately, would be often only repeating the more elaborate

descriptions of the human anatomy more frequently than those but little conversant with this subject would suspect; many of the viscera, and even the myology of the trunk and extremities, often correspond in their principal circumstances: there are, however, great and various differences in the structure of the two animals, which it will be our duty more particularly to describe. For the same reason that the study of the human anatomy is useful, as it tends to preserve the health and lives of men, equally so is that of brutes, inasmuch as it tends to save the lives of these useful and often costly animals. Nor will it be necessary to descend far down the chain of quadrupeds; the few only which from their domestication are rendered serviceable to mankind, deserve this particular notice; in carrying anatomical research farther among the brutes, and in descending into the more subordinate orders of animated beings, the study of their anatomy receives its share of importance, in proportion only as it serves to illustrate the uses and functions of particular organs and parts of the more complicated and noble animals, from the very various figure and structure these parts are found to assume in them, from which much information of their use may be obtained; and then, instead of *veterinary anatomy*, it becomes properly the subject of, and arranges under the head of *comparative anatomy*.

This science may be properly termed *veterinary anatomy*, which, in strict propriety, should include only those animals employed as beasts of burden, as the root of the word (*veho veño*) from whence it is derived implies; but it is necessarily extended to all domesticated animals employed in the service of man. The horse, the ass, the camel, the ox, the hog, the dog, the sheep, &c. rank principally under this class. The anatomy, however, of the horse has only been much cultivated, and that but of late years; various establishments of considerable munificence have appeared within the present century for the cultivation of this study, as that of Charenton near Paris, Lyons, Berlin, London, Copenhagen, Vienna, &c. These institutions, together with the exertions of individuals, have begun to advance this science into respect and estimation; the anatomy and surgery have already received a high state of cultivation, as being more easily attainable by direct mechanical means; the progress of medicine is more slow, and it will be more readily admitted by those most conversant with the subject, to be at present in a state of great obscurity; and from certain difficulties attending the culture of medical science in general, and particularly in these animals, a long period will be necessary for it to obtain much consistency or precision; small effects are with difficulty traced in mute animals, and no feeling or change in them can be described or known, unless powerful enough to be externally visible. On the other hand it is but just to remark, there is a more free and unlimited opportunity of experimental inquiry and research, as their diseases are fewer, and arise from less complicated causes, than those of men.

This science, though it has long lain in a neglected and degraded state in this country especially, and throughout all Europe, yet has not wanted men of refinement for its cultivators. Among the writers who have distinguished themselves in this line of science are to be enumerated among the ancient Romans, Vegetius; he is supposed to have lived about the time of the emperor Valentinian the Third, in the fourth century, and is generally considered the same writer, whose book "*De Re Militari*," has been so much admired, as giving the best account of the military tactics and warlike weapons of the ancients; his treatise "*De Arte Veterinaria*," is not less curious in the present age, as handing down to us the practice and opinions on the veterinary art

at a very refined period of the Roman empire: his work is principally a compilation from the most esteemed authors of his own time, and especially the Greeks; the prefaces, or introductory chapters to his four books carry with them sufficient evidence of their author, and are remarkable for strong and elegant language. Better reasons or apologies for the cultivation of this science have, we believe, never been penned; and though medical reasoning and physiology were at this period in a low state, still we view with surprise, that the practice was very often not materially different from that which would be suggested by the most refined reasoning of the present day. Columella has treated largely on this subject; he lived prior to Vegetius, in the second century, under the emperor Tiberius. Cornelius Celsus, about the same period, is also understood to have written on this subject, but of his work there are unfortunately no remains. At a still more remote period than this we find Greek writers on this subject of considerable note; no less than seventeen are enumerated by Ruellius, who was physician to Francis First, king of France. The surviving fragments of these authors were edited by Ruellius, by the orders of his munificent patron, first in Latin, in folio, in the year 1550; afterwards the original Greek text, in 8vo. in the year 1537; both splendidly printed, so as scarcely, in this respect, to be surpassed by any thing of the present day. To this collection of essays, Absyrtus, Eumelus, Hierocles, Pelagonius, Theomnestus are among the chief contributors: their writings consist of dissertations on the various diseases of the horse, beginning mostly in the epistolary form, with the usual salutations in use among the Greeks. We learn from Sudas, that Absyrtus was a Bithynian by birth, and served under Constantine in the Scythian war. Hierocles appeared in the courts of law in trials respecting those animals, and did not, like Theomnestus and Absyrtus, serve in the armies of the emperor. The period in which the others lived there are no means left of ascertaining; it appears, however, to be most probable that they lived at an early period after the formation of the eastern empire. In these writers the symptoms of some disorders are pointed out with much acuteness, in which consists the great value of their writings. Their prescriptions are often ill-digested farragoes, composed of many incongruous ingredients, some but little known, and others altogether disused at present in medicine. In the administration of remedies of a surgical nature they were more happy, especially that of topical bleeding, which they well understand, from every part of the body. Xenophon has also treated expressly on these subjects in twelve short essays or chapters respecting the training, management, and external figure of horses, and is the most ancient of all the writers extant on horses, being between three and four hundred years before Christ. At the decline of the Roman empire this science underwent the general fate of all the other sciences, and suffered an occultation longer than almost any of them. A period of more than a thousand years elapsed without adding as much to the human knowledge of this subject as has been done within the last twenty only in Europe: during this period, however, of the obscuration of science, at an uncertain date, was propagated the art of shoeing horses' feet with iron, and which at length became general; an art that has been variously practised, and never yet reduced to certain rules. It appears also, that, during this period of declining literature, the veterinary art ceased to exist as a distinct profession, or was practised so feebly, that, on the discovery of the art of shoeing, what knowledge then remained of it was easily transferred to the working smiths, who alone could practise this art. Its sister science, human surgery (it would hardly now be credited), underwent a similar fate; and, for the

want of schools to teach, and professors to practise, passed into the hands of the barbers, from whom it has not been entirely removed till within the last century. These smiths became at length from habit, and the custom of mankind in seeing them so employed, as it were, the legitimate sons of veterinary science; their labours, through a long period of years, have not advanced the science a single step, and they were necessarily employed in this art when it had no regular professors, as being more likely to be skilled in these matters than those less deeply engaged in them, though it would be clearly seen, on reflection, that the good practice of medical knowledge, even on brutes, would require as much knowledge of anatomy and the principles of medicine as the same practice in the human being. Therefore, for the liberal practice and advancement of it previous information on these points was absolutely necessary. In the modern revival of this science the French appear to have led the way; and in taking a short review of those men who have principally promoted it, we shall first mention the name of Bourgelat, (*Les Elements de l'Art Veterinaire*) and Lafosse (*Cours d'Hippiatrique*) as among the earliest useful authors on this subject. The Earl of Pembroke very much promoted the science in this country by a small treatise on the manege, in which he first suggested the idea in England of schools being formed expressly for the cultivation of this subject, having seen those in France about this time. Many expensive and ostentatious works were published on the manege, which nevertheless did not appear in the smallest degree to promote the medical branch of this art. Berenger's work in 4to. 1771, "on the history and art of horsemanship," is filled with interesting matter respecting the manege, and must highly gratify every inquirer after this branch of the art. We cannot recommend too strongly the writings of Mr. James Clark, of Edinburgh, on these subjects, as possessing much good sense, and none of that fulsome sufficiency which marked most of the later writings of our countrymen previous to his time. In France Vitet (*Medicine Veterinaire*) has laboured the anatomy of the ox, and added it to that of the horse, which had not been much cultivated before. Our countryman, Mr. Stubbs, has, however, done the greatest service to the science by his excellent anatomical engravings of the bones, muscles, and many of the blood vessels and nerves of the horse, a work in port folio size, which, for faithful design and good engraving, will not easily be exceeded. Snape's work is also respectable on the general anatomy of the horse. Blundeville published a useful treatise on all the different branches of this art in the reign of Queen Elizabeth, written with considerable learning and modesty; and there is another publication of this description by Leonard Mascall, in the year 1662. Soon after this a bad style of writing on these subjects crept in, and has too much held its place to the present time. Gervase Markham, in the reign of Charles II., published his "Master-piece," and here appear to begin the presumptuous style and empty knowings which has characterised the greatest share of the works which have followed; these have not promoted the science in the smallest degree, but have grossly declaimed against and abused what they were pleased to denominate the ignorance of grooms, the ignorance of smiths, and the ignorance of all their predecessors, taking all unfair advantages of their works, in judging concerning them by the improvements of succeeding times. In this way we find Markham, Burdon, Bracken, following each other with uncharitable asperity and "puny criticism;" and to this list others might be added of the present day. They have written page on page in this abusive way, without adding one single discovery or useful fact to that art they so arrogantly pretend to teach.

And in this place we cannot help noticing a singular barbarism, that appears to have been the offspring of the above writers, which has found its way into common use, in one of the terms belonging to the veterinary science, and which we conceive ought no longer to pass uncorrected, as terms misapplied in science always confuse, and often lead to error. The word *farrery* is at this present time universally in this country employed to signify the whole veterinary art, and is a barbarous mode of spelling the word *ferriery*, as it is immediately derived from *ferrer*, French, to shoe a horse, and that from the radical *ferrum*, Latin, iron; and should signify no more than what the word implies, the application of the iron shoe to the horse's foot. The want of regular practitioners in the veterinary art rendered it necessary that the *ferrer* should adopt the art; and hence the whole art became included in the general term *ferriery*. In reducing this word to its proper spelling, for there can be no authority to justify the present mode of spelling it, and in expunging it, we commit no violence on the usage, or introduce any innovation on the English language, for there exists sufficient testimony to prove that the old English writers did not spell it as we do at present; as in Blundeville, who wrote during the reign of Queen Elizabeth, which, according to Johnson (see preface to his Dictionary), was the purest era of the English language, we find it spelt, with great propriety, with an *e*; see book fourth, in his "Address to the Gentlemen of England:" he writes, "All horses, for the most part, do come into their decay sooner than they should do, by one of these four waies: that is to say, either for lacke of being well bred, or through the rashness of the rider, the negligence of the keeper, or else through the unskillfulness of the *ferrer*." Again, in the same chapter, "Martin Ghelly, of Arton, called Martin Alman, chiefe *ferrer* to the Queen's majestie;" and so on throughout the work. The title of Earl of Ferrers and Derby might also be adduced in proof of this being the ancient and proper mode of spelling this word, the arms of this nobleman being quartered with the horse-shoe, and formerly accompanied with some singular privileges to the family. This word, therefore, reduced to its original and proper signification, only relates to the art of making and applying the iron shoe to the horse's foot; and in this sense we shall have occasion to employ it, as the veterinary art embraces this and all the other branches of the science.

Indeed, on pursuing an historical retrospect of the state of this science in England, it has seemed to us, for the last hundred years and upwards, to have been taking a retrograde course, which we feel rather disposed to attribute to the unbounded rage for horse-racing, which, while it was of great service to the British nation, by encouraging the best breeds of strong and fleet horses, was of disservice, by promoting an artificial vitiated taste with regard to these animals, which overawed all attempts at modest inquiry respecting their diseases. The knowledge of horses was supposed to consist in a sort of intuition, which was not to be defined or taught to others. Jockeys, sharpers, and gamblers, were supposed principally to possess this knowledge, which was all that was thought necessary respecting them, and all farther information could be of no use. Jockeys before this period were of small note, but from being entrusted with the secrets of the course, soon became engines of great importance in pursuing this species of traffic, and men at length were brought to resign their understandings to them, imagining it a subject too mysterious and difficult for them to comprehend; hence also appears to have arisen the great difficulty of founding a seminary for the study of veterinary medicine and surgery in this kingdom, which was almost the last country in Europe that adopted this salutary step for the improvement of the art.

A more free and candid mode of considering this subject let now appear; and a style of writing and enquiry, which must (however it may labour under difficulties for a time) bring forth light, and, with the great improvements in chemistry, and all the arts and sciences which can promote it, will soon place it on a footing far beyond what was known in ancient or modern times.

Having gone through what appears to us to be the outline of the history of the art, as far as we are at present acquainted with it, we shall immediately pass to a description of the skeleton of this useful animal.

On taking a general survey of the bones of the horse, (see *Plate I.*) we may divide them into those of the head, spine, trunk, fore and hind extremities; and here it will be proper, in pursuing this general view of the skeleton, to remark a circumstance that is not universally known, *viz.* that the horse, when in the best possible proportion and shape, comes within the square, the head and upper part of the neck only being excepted; and this applies alike to horses of every description, as well the race-horse as the dray-horse: to explain this assertion, the dotted line is given, pointing out the limits of the square. If this principle was more generally known to the painters and statuaries, we should not have so many ugly and miserably disproportioned animals from their hands. This subject we propose to treat of more extensively under the article *SYMMETRY of Horses.*

On a further examination into the general properties of the skeleton, we propose to shew also, that the weight of the horse is supported by a *contraposition* of the angles of the superior part of the fore and hind extremities, as the shoulder-blade, or scapula, *a, b, c, d, e*, from the withers, leans obliquely forward, forming an obtuse angle with the arm, or humerus, *f, g, c, h*; in the hind extremity the reverse of this structure is observable in the position of the bones, as the hip-bone, or ilium, *a, b, c, d, g*, and the ischium, *f, f*, which pass in a sloping direction backwards, and form with the thigh-bone, or femur, *h, m, k, n*, an obtuse angle forwards. Now it is evident, that the angular position of these bones being opposed to that of the shoulder and arm, will readily, by acting in opposition to it, sustain the weight of the body which is placed between the two angles; the rest of the two extremities are disposed nearly in the perpendicular line to these angles, and support the weight as simple columns, still, however, following, in a slight degree, at the hocks and knees the above angle of support. From this cursory view of the entire skeleton, it will be necessary to pass to a more detailed examination of the bones which compose it, without being too minute for an elementary work of this kind; and we shall begin with the *head*, which is formed of the skull, face, and jaws, and which are divisible into about 32 distinct bones; the *skull* consists of 11 bones; the two *frontal* (see *Plate I.*) bones, *a, b*, the two *parietal, c*, four *temporal, h, i, k*, one *sphenoid*, one *ethmoid*, and one *occipital* bone, *d, e, f, g*. The temporal bone in the horse is made up of two distinct portions, the squamous and petrous, which in this animal always remain distinct. The occipital bone differs much from the corresponding one in the human skull, forming the top of the head, and is possessed of very great strength and thickness, with a deep depression on the centre, where the cervical ligament is attached. The *face* is made up of 21 bones, as follows, two *nasal* bones, (see *Plate I.*) *r*, two *angular* bones, *m*, two *malar*, or cheek bones, *l*, two superior maxillary, *n, o, p*. The inferior maxillary bone, *q*, is not found in the human skeleton, and has been termed by Professor Blumenbach, the *inter-maxillary* bone: it was supposed by him for a considerable time to be peculiar to the brute, and would serve for a dis-

tinctive mark by which every animal genus of the *mammalia* might be distinguished from the human; his latter researches have, however, discovered that no such bone existed in some of the long-tailed monkeys, though it is worthy of remark, the same bone is found in several of this tribe of animals with short tails. There are two superior palatine bones, two inferior palatine, two superior turbinate, two inferior, two pterygoid bones, and the vomer. The turbinate bones are particularly large in the horse, as are also the maxillary cavities; and by the elongation of the face, the head of the horse is extended in length beyond almost every other quadruped. Two thin plates of bone, almost distinct from the palatine bones, and divided by a suture, following the same direction as the large palatines, are observable in the space between the incisor and molar teeth of the upper jaw: these might be termed the lesser palatines; they are, however, merely processes of the intermaxillary bones, and not divided from them by any suture. The intermaxillary bones in this animal contain the whole of the incisor teeth, but not the canini, or tusks, the suture passing between them. The inferior maxilla, or rather, in the horse, the posterior, or jaw bone, is formed of one bone, at least in the adult, and is not, as in the human, made up of two bones, united by symphysis at the chin; it is necessarily longer and deeper than the jaw of most other quadrupeds. The jaws are furnished with alveoli, or excavations, which receive 40 teeth, *viz.* 12 nipping, or incisor teeth; 4 tusks, or canine teeth; and 24 grinders. The tusks are never shed in the horse, though they are in the dog, and some other carnivorous animals; the three first pair of molar teeth are also shed in the horse, and receive a second set; the three last pair are permanent; the first set of incisors, or milk teeth, are also shed as in all other animals. For the growth, structure, and other particulars of these bones, and some remarks respecting the indications of the age, we refer the reader to the article *TEETH of Horses.* The *spine* is a canal of bone, of a very elongated conical figure, and, in the horse, is made up of about 32 pieces, independent of the bones of the tail, which is formed of about 14 bones. The cervical vertebræ are seven in number, which number it has been remarked by anatomists, prevail in all quadrupeds, whether the neck be long or short. These bones in the horse are altogether different from those of the human skeleton in their formation: the body of the bone is considerably more elongated, and the processes of a different figure.

The first vertebra in the horse is termed, as in the human skeleton, *atlas*, but evidently with not so much propriety, as the head of the horse is rather suspended from this bone than resting upon it; it differs essentially in figure from the other vertebræ of the neck, being more extended laterally, and in being without any dorsal apophysis; it is also much shorter than any of this range of vertebræ; it receives anteriorly the condyloid processes of the occipital bone, and likewise posteriorly the tubercle of the second vertebra within its articulating cavities.

The second cervical vertebra is in figure almost the reverse of the former, being long and narrow in its body, the dorsal process, or crista, very elevated and enlarged, rough on its upper surface, for the strong insertion of ligament; and this spine, or elevated plate of bone, at its posterior part, is bifid, or cloven, with a middle depression, or fossa, affording a stronger and wider surface for muscular and ligamentous attachment. This vertebra has no superior oblique processes, and enters the former bone by a half tubercle, or capitulum, exposing the spinal marrow on its upper part, and is kept in its situation by two broad lateral articulating surfaces.

The other five bones, which compose the neck, are of a more uniform figure than the two former, consisting of a body of bone, somewhat lengthened, having a large cylindrical perforation for the passage of the spinal marrow, externally of an irregular, almost quadrangular, figure, having various angular and spinous elevations of bone, which are termed according to their situation, as the spinal apophysis, the superior and inferior oblique processes, the transverse and anterior processes, which are intended for the strong insertion of muscles, tendons, and ligaments for the support and motions of the neck. The articulating process of these bones consists of a round head of bone, the posterior articulating surface of a suitable indentation to receive it. This knob of bone is observed by Stubbs to be wanting in the sixth vertebra of the neck: these bones possess also various perforations for the transmission of blood vessels and nerves.

The dorsal vertebrae are 18 in number, sometimes 19, and are remarkable in the horse for the length of the dorsal or spinous processes, extending from the first to the eighth, and which form what is called the withers of this animal, and against which the superior part of the shoulder is brought to recline.

The dorsal vertebrae differ in structure from the cervical, being much shorter in the body or solid part of the bone, the spinous apophysis being longer, the anterior process is wanting for the underside of these vertebrae, and those of the loins present a smooth rounded semicircular surface to the viscera. The interposing cartilage, or elastic ligament, in the cervical vertebrae, is not considerable in the dorsal vertebrae; it makes in the recent skeleton more than an eighth part of the whole length of this part of the spine.

A dorsal vertebra of the horse possesses almost a similar number of processes as are found in those of the neck, though very differently situated and proportioned; these processes are all placed superiorly to the two articulating surfaces of the ribs; and it is almost unnecessary to repeat that they possess foramina for the passage of nerves and blood vessels, and the spinal marrow.

The lumbar vertebrae. Where the ribs terminate, begin the lumbar vertebrae, which are six in number, and possess very much the same processes and character as those of the back. The spinous processes are stronger, the lateral processes broader and longer, and sometimes articulate with the body of the vertebra, and in some measure serve the purpose of spurious ribs. These bones are often united into one mass in the horse, by ossific deposit, as are also those of the back.

The five next bones of the spine are united into one mass in the adult, to give strength and energy to the various motions of the hind quarter, and in their consolidated state are called the os sacrum. The interstices occasioned by the union of these bones on their underside, form what, at first sight, appear to be huge foramina, being rounded, as these generally are.

The superior part of this bone possesses longer spinous processes than those of the loins, and admits a vast surface for the attachment and deposit of muscles; and here are placed the muscles of *loco-motion*, which, in all animals, are the largest in the body.

On the superior surface of the transverse processes of this bone rests the flat inferior surface of the ilium, to which surface it is attached by strong ligaments, so that the body of the horse is, as it were, entirely suspended by ligamentary and muscular substance, for the scapula has no other than this species of attachment; hence the entire exclusion

of a solid bony articulation of the extremities with the spine, must soften every motion of the animal to itself, and consequently to what it has to carry.

The remaining portions of the spine, consisting, in the horse, of 18 pieces, gradually lose the structure and properties of the foregoing parts of the spine, and become simple rounded cylinders of bone, solid and enlarged at the points of articulation, and towards the extremity of the tail are of a consistence nearly cartilaginous.

Of the trunk. The costae, or ribs, are bones of a curved figure and elastic, serving to defend the principal part of the thoracic and abdominal viscera; and in the horse are generally 18 in number, sometimes 19; these are articulated by one extremity to the dorsal vertebrae by two surfaces, a lateral and terminating articulating surface. The eight first of these ribs terminate on the sternum itself by an *offo-cartilaginous* substance; the others do not reach the sternum, but are attached to each other by a long surface of adhesion of the same kind.

The sternum in the horse is composed of seven pieces of bone firmly united, and differs widely from the human in being curved, and, instead of being flattened, is anteriorly acute, like the prow or keel of a vessel. This anterior part is also of an *offo-cartilaginous* consistence, terminating above by an obtuse eminence above the articulation of the first rib, and inferiorly by the scrobicular cartilage of an oblong figure. This structure enlarges the chest, and gives room for a stronger attachment of the fore extremities to the shoulder for the support of the body.

Of the ilium, ischium, and os pubis.—These we may consider as forming part of the trunk; they are, however, only attached to the spine by ligaments, having no actual articulation, and might be referred to the hind extremities. These bones form collectively the haunch, the thigh being included, and internally the pelvis.

The ilium, or hip-bone, in the horse, is not of a rounded figure, as in the man, but is extended in three directions, forming three powerful branches or processes, which may be denoted, by way of distinction, the superior, inferior, and posterior rami, the three exterior margins or edges of the bone included; between the above rami we propose to distinguish by the terms anterior, superior, and inferior cristae. The ramus inferior is shorter than the others, and obtusely truncated, giving an anterior and posterior pointed angle. The extended branches and wide upper surface of the ilium give a place for the attachment of several strong muscles which are thus situated, to the greatest mechanical advantage, to the points on which they are to act, giving with the ischium a magnitude and power to the buttock not equalled perhaps by any other animal.

The ischium in the horse is remarkably extended, forming a strong process posteriorly for the reception and attachment of powerful muscles, and which process is entirely wanting in the human skeleton. This elongation of the ischium may be denominated the *processus triquetrus ischii*, from its figure: this singular process disposes the muscles attached to it very advantageously for powerful action on the thigh and leg, by removing them to a distance from the centre of motion.

In the os pubis there is to be remarked the very extraordinary depth of the symphysis, affording an extensive surface for muscular attachment.

The above three bones unite in forming the acetabulum, or cup, which receives the head of the thigh bone, in both the human and equine skeleton.

There appears to be a slight degree of motion of the ilium on

on the transverse processes of the sacrum, arising from the ligamentous connection between these bones; in the dog this motion of the ilium is more evident, and on dissecting this part we have observed a singularity which, we believe, has not been generally noticed, and which is worthy of remark in this place. The os ilium in this animal rises so considerably above the transverse processes of the lumbar vertebrae on its interior part, that the middle of it, instead of being occupied as in other animals with the iliacus internus muscle, is entirely filled up by the muscles of the back, and the above muscle is entirely wanting. We may, perhaps, illustrate the cause of this peculiar structure by remarking, that the action of the dog, as in galloping, is performed principally by the muscles of the back, in the horse it is more effected by the action of muscles of the extremities.

In taking a view of the figure of the pelvis in this animal we may observe its depth is greater, its area wider, and axis more in the line of the spine than in the human.

Of the extremities.—The great variety of accidents and diseases to which the extremities are liable, and the peculiarity of structure which attends these parts in the horse, render a knowledge of them more interesting and necessary to the veterinarian or amateur in these matters than any other part, and will engage us to consider them with more minuteness and detail than we have done in executing the preceding imperfect outline of the description of the other parts of this animal.

The extremities of the horse are constructed of much the same members as the human, though very differently distributed and proportioned; the human hand, the first of all executive instruments, is here converted into the solid foot, useful only for support and progression: the hand grows more complex towards its termination, while the horse's foot becomes more simplified, following the purpose for which it is designed. Notwithstanding, these parts in all quadrupeds have a relation to each other, and possess rudiments which even appear superfluous, but serve to point out the connexion between the different families of them; as the styloid bones of the horse are evident rudiments or relics of the two outside metatarsal bones of the digitated animals, and appear to serve no very important purpose, as the mammæ or nipples of the male quadrupeds are rudiments void of use of the same parts, which are highly useful in the female.

Of the fore extremity. The scapula, blade bone, or shoulder of the horse is considerably lengthened, and is proportionably narrower than the human, being of an oblong triangular figure, possessing neither acromion nor coracoid process, though there is a prominent, obtuse point of bone in the situation of the latter, and a rounded eminence often on the spine of the scapula, which denotes the situation of the former. The horse, we may observe, possesses in this part no proper back, for the withers can hardly be considered as such, therefore the scapula does not materially pass out of the plane of the os humeri, or arm, as in the human, but is simply reclining on the side, its upper part reaching near the extremities of the dorsal apophyses or withers, its lower part directed forwards, and approaching the first rib and upper extremity of the sternum. The under side of this bone is concave, and is found in old horses covered with asperities for muscular attachment: the upper surface is divided longitudinally into two unequal parts by a bony ridge, called its spine, affording surface for the attachment of various muscles and tendons; the base or broad extremity of the scapula is furnished with a cartilage, which embraces the muscles of the withers; its small end possesses an articular cavity which

receives the head of the humerus, and is termed the glenoid cavity. The motion of this bone is different from any other in the body, not moving upon either extremity, but librating round a point which is situated near the centre of the bone.

Of the humerus, or arm. This bone is particularly short when compared with the bone of the human arm, scarcely passing beyond the line of the chest, and is proportionably stronger, passing from the point of the scapula in an oblique direction backwards; and instead of partaking of the various motions of the above bone, possesses but one motion, that of being brought from its inclined position forwards to the perpendicular line of the body. This bone possesses various strong elevations and depressions for the lodgment and insertion of muscles, of which there is hardly any trace in the bone of the human arm. It articulates inferiorly by two strong condyles with the radius. It is this bone, often by being too long, that brings the horse's fore-legs too much under his body, a fault much disliked by the amateurs of riding horses; this may also arise from the shoulder being too upright. The fore-limb of the horse not requiring any rotatory motion, as in the human arm, we find no distinct os ulna, but the point of the elbow, or olecranon, being very much enlarged and extended in length, is firmly fixed to the back of the radius, sending off a process of bone downwards, which is brought to a point about the middle of the radius, uniting firmly with it; from its position being fixed in respect to the radius, it can perform but one of the offices of the human ulna, and serves for the attachment of those muscles, which bring back the fore-arm, from its bent position forwards, to the straight line, under the pressure of the weight of the body. For the os radius, see *Fig. I. l. l.* The radius or fore-arm of the horse is nearly straight towards its middle and inferior extremity, bending a little forwards; it is usually mistaken for the arm of the horse by casual observers, its posterior surface is flattened, it grows broader at its extremity, forming two condyles, possessing motion, upon the bones of the knee, admitting an extent from the perpendicular of the leg, considered together with the bones of the knee, to a very acute angle backwards.

Bones of the carpus, (see *Plate I. fig. 1, 2, 3, 4, 5, 6,*) are the bones which compose the carpus, vulgarly called the knee of the horse, and correspond to the bones of the human wrist; these bones do not afford a similar extent of motion with the same bone in the human carpus, not admitting any motion forward beyond the perpendicular line, nor of any lateral motion whatever.

On a first view of the bones of the knee of the horse, their position seems reversed to the human wrist, the olecranon or elbow being placed at the back of the radius, and the flexion taking place in a direction towards it; and the bones which form the back of the wrist appear to form the front of the knee. This inversion, however, is only apparent, and not really so, as by a slight rotation of the radius, the human wrist may be placed in the same relative position to the ulna, as the bones of the knee of the horse are with respect to it.

The knee of the horse is made up of seven bones, sometimes eight, a very small, round bone being often superadded on the side, about the size of a pea, and is not preserved in the generality of the skeletons of the horse.

This joint is formed of two regular layers or phalanges of bone, the upper phalanx or row being placed upon and between the divisions of the other three in each phalanx, the 7th being thrown behind.

The first layer, *viz.* that placed on the cannon, has little

or no motion; the second layer has considerable motion on the first as those have also on the radius, making in their total flexion about 30 degrees of a circle.

To strengthen this joint, and to secure these bones more firmly in their situations, they are formed with alternate elevations and depressions both in their upper and lower surfaces; this joint is also rendered stronger from having an articulation, which admits of motion in one direction only, that of flexion, and that in the opposite direction to the flexion of the hock, tending by this means to support the animal, as we have before observed.

The weakness of this joint, called *knuckling* in horses, observable in those that have been overworked, or grown old, does not, we believe, proceed from any defect of the joint itself, but from the rigidity of those muscles which serve to bend it, and especially those which pass to the foot, the extensors, which are comparatively small, not having sufficient power to counteract it.

These bones have but little resemblance to those of the human wrist, though they occur in the same number; it will therefore answer no good purpose to force an analogy between them by calling them by the same names; for the use of the names deduced from the human anatomy makes a perpetual recurrence to those bones necessary to see where they may, without impropriety, be introduced, and where they cannot be admitted; it is this circumstance which has rendered it absolutely necessary to compare both the skeletons in this present essay.

These bones might very naturally be denominated from their situations as follows; the *os externum superius* and *inferius*, *os internum superius* and *inferius*, *os medium superius* and *inferius*, *os pollicum*, *os accessorium*, and this would be a very desirable thing, for they would belong to a great number of quadrupeds without being misapplied. There is, however, a considerable objection to their adoption, which is, that in describing the attachment or insertions of ligaments or muscles, it would render a circumlocution necessary if any other language was used, which would be attended with inconvenience, and for which reason we decline the use of them.

Mr. Stubbs, in his excellent work, in following too closely the names of the bones after the human skeleton, has been betrayed into the use of names, which cannot well be admitted in the equine anatomy. The *pisiforme* is a very small rounded bone in the human, not larger than a pea; the *os pollicum*, though a perfectly distinct bone, and differently figured from any in the human anatomy, has been described by Mr. Stubbs under that name.

If it were desirable to make any analogy between these bones and the human *carpus*, we should on comparing them remark, that in the horse's knee there is a consolidation of some of the human *carpal* bones, and a separation or division of others; there is, however, the small *accessorium* bone included, the same number in each, *viz.* eight bones.

The *os trapezoides* and *magnum* appear conjoined in the horse, forming one large flat bone, whilst the bone in the horse, which serves the purpose of the *unciform* bone at the back of the knee, is made of two distinct bones; the human *unciform* bone appears in front of the wrist as well as behind and is one single bone. This curved bone also differs in the horse in being removed to the upper row or phalanx, for the bone, serving the same purpose in the human wrist, is seen in the lower row of the *carpal* bones.

In this way they may be compared and understood, as, after this explanation, the others fall in very naturally in their proper situations in both. Were it not on account of the names, it would not be necessary at all for the veterinarian to pursue any comparison with the human skeleton, and we

think it would be advantageous to avoid it; for the alteration of their figure, on which the human names are founded, renders the same names in the horse totally inadmissible.

A nomenclature for the osteology, which would include nearly, or quite all the quadrupeds known, might be constructed, and would be attended with great utility; such a nomenclature, however, would require, that neither figure nor situation should supply the names, as these would be perpetually varying.

It is no easy matter to give appropriate and unexceptionable names to all these bones, nor should we be desirous of undertaking it, if the above circumstances, and others that might be adduced, did not point out the absolute necessity of it; we are aware of the circumspection necessary in such a measure; and after as much consideration as we have time to devote to this subject at present, venture the following as the best adapted which at present occur to us.

The middle bone in the upper phalanx we propose to name *os intermedium*, being found near the middle of the upper range of bones in all the animals we have examined.

The large internal bone of the same phalanx we propose to denominate *os parietinum*, which, not conveying any precise geometric figure, will apply, without glaring impropriety, to a great variety of shaped bones: the external bone of this range, *os gibbosum*, having some gibbous elevations on its surface.

Of the lower series, the central one we should be led to express by the term *os majusculum*.

The external one, *os pollicare*, carrying the thumb in all digitated animals, and resting even in the horse on the internal styloid bone, which appears evidently the corresponding rudiment of this member in the horse, and is actually elevated above the level of the shank bone, and is placed higher than the styloid bone on the opposite side, serving to confirm the resemblance. It is this bone which so frequently becomes diseased with osseous deposit, termed splints.

The external bone of this range we would denominate *os subunciforme*, being provided with various elevated points, rudiments of the hook-like process, and corresponding to the human *unciform* bone.

The bone serving the office of the *unciform* bone in the horse, and holding nearly the situation of the *pisiform*, connecting and supporting the tendons, &c. which pass through it, being altogether a different bone from that of the human serving the same office, which has a curved process on the inside the wrist; that no confusion might arise with this bone, we change the terms *unciform*, or *pisiform*, in the horse, and call this additional bone, which is found in most quadrupeds, and even in the feline tribe, whose digitated extremity is a much nearer approach to the human hand, the *os pollicum*, or the *post-carpal* bone.

This bone gives great force and support to the tendons which pass through it, or are attached to it, allowing depth and solidity to the knee. It is this bone which occasions the prominent point at the back of the knee, affording a strong and handsome outline to this part; it also serves for the attachment of a very strong tendon at its extremity, which being then removed farther from the centre of motion in the joint, is empowered to act with very great force, and resembles, in this respect, the office of the *os calcis* on the hind extremity.

The *os accessorium* is a small round bone, about the size of a pea, which articulates with the posterior surface of the *os pollicare*.

The *os posticum* has been termed by Vitet, a celebrated French writer on this subject, *os hors de rang*, a name perfectly

fectly inadmissible in any other language. *Médecine Vétérinaire*, Lyon, 1783, tom. 1. p. 100.

We shall only farther observe on the bones of the present joint, that the surfaces for motion between the second phalanx and the first are particularly disposed to the outside of the joint, tending by this means to separate the legs when in action from each other, and prevent cutting. This is particularly remarkable in the *os subunciforme* and *majusculum*. The flexion of the upper phalanx upon the radius is directly backwards only, and forwards to the perpendicular of the extremity.

Of the metacarpal or shank bone.—The great difference of proportion in the parts which compose this extremity to the human is no where more conspicuous than in the metacarpal bones. The range of bones which form the wide palm, or the paws, of animals, is here for the principal part condensed into one solid cylindrical bone, longer considerably than the humerus itself, the rudiments considerably abbreviated of the two exterior metacarpal bones remaining to point out the general connection among quadrupeds; the cow has the shank bone destitute of splint bones, but at its inferior extremity is divided, forming two condyles for the reception of the two claws, and in this way forms as near an approach to the fingered animals, though in a different way.

The shank bone is flattened posteriorly for the reception of the suspensory ligament and tendons going to the foot, which we may observe is more considerable in the fore extremity than the hind one; the latter is longer, and of a more cylindrical figure, being generally described as having no perceptible difference. The styloid, or splint bones, adhere to the shank bone strongly, and are mostly united to it by ossific depositions, otherwise every where preserving a divided outline between the two bones. In the fore extremity these mostly dwindle to a point, about two-thirds down the length of the shank bone, and are not so large as in the hind extremity. These splint bones, though so often productive of disease, tend to strengthen the joint laterally; and perhaps by their elastic yielding to the perpendicular pressure of the limb, being elevated above the general articulating surface of the shank, may act as cushions in a slight degree in preventing concussion; they also serve to strengthen the limb, by affording a surface for ligamentary attachments. The inferior extremity articulates with the pattern bone by a condyle, having an elevated ridge of bone in the middle to support it, which enters a corresponding depression in the pattern bone. This joint, though strongly fortified with ligament and tendon, is more subject to suffer from violent usage than any in the body. In the cloven footed animals the division begins in this part.

Ossa sesamoidea. Sesamoid bones, *fig. 1. p. p. v. v.* are placed at the back of the pattern joint, and resemble, in their figure and properties, the same bones in the human foot; diminishing friction, powerfully assisting the tendons going to the foot, and at the same time supporting the pattern joint by their pressure.

Of the os suffragineum, or pastern bone. This bone corresponds to the first phalanx of bones of the fingers, the five bones of which may be considered as consolidated into one single bone; its general figure resembles sufficiently a bone of this part.

The pastern bone, at either end, is indented for the reception of the prominent condyles of both the shank and coronet bone, *fig. 1. o, o, u, u.*

The *os coronæ*, or coronet bone, *fig. 1. r, r, w, w,* is, like the former, a similar condensation of the five bones of the second phalanx of the fingers, and is proportionably

shorter than it; it articulates by a divided condyle with the coffin bone.

This and the preceding are rough on their sides, with depressions for the strong insertion of ligament, especially laterally, in the point of the axis of the condyle, where a deep indentation is observable.

Of the os basis, or coffin bone. *Fig. 1. s, s, x, x.*—This name, and that of the two former bones, have been taken from those Latin writers who have treated on this subject, and, we conceive, will not require any alteration.

A distant resemblance may be traced between the enlarged rounded point of the extremity of the bone of the finger and this bone. The particular structure, however, of this bone and the shuttle bone, and their various appendages and integuments, is sufficiently important to form a separate description. See *Foot of the Horse*.

Of the hind extremity.—The femur, or thigh bone, of the horse, compared with the human, and, indeed, with most other quadrupeds, is unusually short, so as scarcely to appear beyond the *parietes* of the abdomen externally on a cursory view, and is therefore overlooked by those unaccustomed to this subject; and the bone below is usually mistaken by them for the thigh of the horse.

This bone is of vast strength, possessing several elevated and depressed points for the strong insertion of tendons and muscles, which serve to distinguish it from the thigh bone of every other animal. See *Plate I. fig. 1. b, i, k, l, m, n.*

The head of the thigh bone in the human is carried by an oblique process, or neck, to a distance from the bone, whereas, in the horse, the head is without any length of process of this kind, placed at right angles, nearly to the bone, not affording that variety of motion which the human structure of this part does; a motion directly backwards and forwards, being for the most part the only movement requisite in this animal.

In a state of rest the thigh bone is not nearly in the perpendicular line of the body as in the human thigh, but inclines forwards, making an angle with the body of about 45 degrees, and forms posteriorly an obtuse angle with the rest of the extremity. This circumstance is necessary to be observed with attention previously to understanding the design of the muscles of this extremity, concerning the uses of which we propose to advance some ideas, which, as far as we know, have not before been entertained respecting them.

The muscles which are attached to the posterior part of this bone are called its extensors, serving to draw it from the oblique line it describes forwards, backwards to the perpendicular of the body, being attached near its head, and rather laterally.

Those muscles also which render this angle more acute, by drawing it forwards under the belly, are called its flexors, and are attached to its anterior superior part. We mention these rules respecting the functions of the muscles of this part the more particularly, as the terms flexion and extension but ill express the operation of these two classes of muscles on this bone, for the inversion of the terms would apply almost equally well; adduction and abduction are also generally attributed to other muscles, as they are found to attach to the inside or outside of the limb. We propose to demonstrate that such are rarely or never necessary among quadrupeds; and that such a vast body of muscles as there are to be found in both extremities of this description, have a much more important purpose to perform.

The great trochanter of the horse, see *fig. 1. Plate I.* rises considerably above its articulation with the acetabulum. This removal of the surface of attachment of the glutæus muscle farther from the head of the bone, must bestow uncommon power

power on this muscle in the horse, in extending the thigh backwards.

The lesser trochanter in the human thigh is placed almost behind it, in the horse laterally internally.

The most notable circumstance in the thigh bone of the horse is a strong, curved process of bone on the outside opposite the lesser trochanter, see *fig. t. k*, which receives in its curvature the *vastus externus* muscle, *musculus fasciæ latae*, and *musculus fasciæ glutæalis* send off portions of tendon, which are inserted in this curved process.

As this process is altogether wanting in the human, and in the ox, hog, dog, and in most quadrupeds, it is without a name; we have, in our description of muscular and tendinous attachments, termed it the *processus recurvatus femoris*. Mr. Stubbs terms it the protuberating part of the *linea aspera*; and Vitet *l'apophyse recourbée*, tom. i. p. 121.

On the posterior and inferior part of this bone, near its exterior condyle, there is a deep cavity, in which the *perforatus* muscle takes its rise.

The condyles of this bone are remarkable for their magnitude and strength; the outer condyle is larger, and is placed posteriorly to the inner condyle.

In the dog, and also in the cat, we have observed a small, round, moveable bone attached to the exterior condyle by a ligament not observable in the horse.

Of the patella.—The knee-pan, or tibia bone, is particularly large, elevated, and thick in the horse, having the lubricous cartilage on its inside where it meets the femur possessing correspondent, impressed condyles for this purpose. This species of cartilage is common to all surfaces of bones which are contiguous; therefore the continual repetition of this circumstance, in describing the articulations of the bones of the skeleton, has been omitted.

This bone serves to increase the surface for tendinous insertion of the muscles of the thigh, &c. passing over an angle on which it can easily glide; it elevates the tendons high above the point they are destined to act upon, and in this way vastly increases their force on the principle of the pulley and block: and we may here observe a property of this bone not generally observed, that it serves to unite in one focus the action of the muscles lying on the opposite sides of the bone, as the *vastus externus*, *internus*, and *anterior*, bringing them to act for one purpose on a single point, in which is clearly seen an instance of a principle we are about to deduce respecting the adductor and abductor muscles.

Of the tibia, or leg-bone of the horse.—This bone corresponds in structure with the human much more than the *femur*; it is, however, shorter, *cet. par.* There is near its head a sharp apophysis, which might be called its anterior crista; its external side is concave, in which lie the bodies of several muscles; its internal side convex, posteriorly it is flattened; its epiphysis may be divided into two condyles, external and internal, in the young foal; from the latter springs a small, spinous process of bone, the rudiment of the human *fibula*, which is totally wanting in the ox; the hog, cat, and dog possess a perfect *fibula*.

Of the tarsus, hough, or hock of the horse.—This important joint in the horse is made up of six bones, sometimes seven; the internal cuneiform being sometimes divided in two parts, as in the preparation at present before us. This joint in the ox, deer, and sheep appears to have no more than four bones, which seems to point out an extraordinary provision in the horse to increase the perfection of the joint, and prevent the ill consequences of violent concussion, as the additional bones in the joint of this animal are evidently well calculated for such a purpose.

The human tarsus makes a right angle with the tibia, and,

in the act of standing or walking, meets the ground; in the horse it makes a very open angle with the tibia, and is very far elevated above the ground: and here we may remark, that all the bones from the hock downwards are used for walking on by different tribes of animals; where the metatarsal bones are elongated, it is raised above the ground. The kangaroo, however, appears to be a remarkable exception to this general rule.

The astragalus bone in the horse possesses two very strong, prominent condyles, which are not observable in the human astragalus.

The *os cubiforme* is found holding the same figure and situation in both animals resting by its inferior surface upon the external styloid and shank bone, its upper surface receiving the inferior extremity of the *os calcis* by an articulation not possessing motion.

The two central cuneiform bones of the human tarsus appear to be united in the horse to form one flat extended bone, which rests upon, and covers greatest part of the articulating surface of the head of the shank bone.

The *os naviculare* also of the human tarsus is here converted into a flat extended bone, resting on the former; these two bones together equal in height the *os cuboides*. By these two flat plates of bone, with their interposing cartilages, a species of cushion is formed, which renders the effect less severe of the violent efforts and concussions this part is exposed to: that they have a purpose of this kind may be inferred from their taking no part in the flexion of the joint.

The internal cuneiform bone, or a bone that holds its situation in this animal, is found resting on the head of the internal styloid bone, which appears to correspond with the bone of the great toe in the human anatomy.

We are again subject to the same difficulty in giving appropriate names to the bones of this joint as we were respecting those of the knee. The bone, called in the human anatomy *os naviculare*, in no respect in the horse resembles a boat, nor the one beneath it a wedge, therefore to continue these names would be absurd; their situation also as little corresponds as does the purpose they serve in the two animals.

The cuboid bone, the *astragalus*, the *os calcis*, and the internal cuneiform bone may, without any impropriety, continue to receive those names in the horse, and particularly as it will be attended with convenience to hold as many names as can be admitted corresponding to the human anatomy, by which, at all times, a more ready communication can be held between the two sciences, but not so as to press this comparison too far by a servile copy of it, and a comparison between things which have little or no resemblance, or relation, by which the greatest confusion may be created, and the science at its commencement be clogged with improprieties.

The only changes it will be necessary to make in this joint from the human anatomy respects the two flat bones, which may be termed, with propriety, the *os planiforme superius* and *inferius*. These are the bones which often become diseased with the deposition of ossific matter, forming an enlargement which is termed spavin, and also the internal cuneiform bone.

The metatarsal, or shank bones of the hind extremity do not differ in any respect, so as to deserve a separate description, from those of the fore extremity; to the differences there adduced, we may perhaps add, that the styloid bones in general descend lower in the hind extremity, and are often clavated at the extremity instead of being pointed.

Of the muscles of the horse, &c. The following is a brief account and explanation of a large portion of the most interesting muscles of the horse; the short space of time al-

lowed for the preparation of this article, and the pressure of other affairs have prevented us from considering more accurately this subject; the muscles of the extremities, as being the most interesting and important, are more particularly selected; they are accompanied with descriptions taken from actual dissection, during our studies, in the year 1793. The remainder is an explanation of two of the principal muscular figures, given by Mr. Stubbs.

This account is necessarily imperfect; it may nevertheless afford those who are desirous only of an elementary knowledge of the subject sufficient information; those who wish to descend deeper into the study will do well to consult the following writers: Bourgelat, *Elemens de l'Art Veterinaire*; Lafosse, *Cours d'Hippiatrique*, and especially the useful work above mentioned of Mr. Stubbs: a good monograph on the muscles of the horse, giving a proper description of their figure, attachment, insertion, and use, still remains a desideratum in veterinary science, to which should be subjoined the synonyma of the different writers on this subject.

Our description of the muscles of the hind extremity is with diffidence presented to the public, as a specimen of the manner we conceive such a work should be executed.

Of the panniculus carnosus. The fleshy pannicle is the most exterior and general of all the muscles of the body; it is found in most or all quadrupeds, and often serves them in lieu of hands, lying immediately underneath the skin, to which it is attached, and over the cellular membrane covering the muscles; it is of a pale red colour, and envelopes a large part of the body; as it passes towards the extremities it forms a thin expanded tendon or *aponeurosis*, which descends to the superior part of the extremities, enveloping the muscles, and losing itself in the cellular membrane of those parts, and by attachment to the tendons and elevated points of bone.

When this muscle contracts it corrugates the skin, and assisted perhaps by other muscles, it can shake the whole frame with considerable violence, thereby dislodging from the coat dust, dirt, flies, and other offending matters.

The butchers are careful in exposing this muscle on their meat, which serves to give it a more agreeable appearance; it is seen of a pale red colour, and here and there they cut through it a longitudinal nick or slit to expose the white cellular membrane and fat which lye beneath.

The muscles of the fore extremity of the horse are about 34.

They are disposed about the limb when detached from the body so as to form a pyramidal figure, whose base is attached to the body, and whose apex is resting on the ground: on the base of this pyramid, if we may be allowed the expression, or upper end of the extremity, the muscles are found to possess a four-fold position, *viz.* an exterior, interior, anterior, and posterior position; such is especially their arrangement about the scapula and humerus; as we descend they become more simple, and occupy at length only a two-fold position, serving for mere flexion and extension, as is observable about the *radius*; at the apex of the cone no muscles are observable but merely the tendons of the last series of muscles, with the bones and ligaments to which they are attached.

Abduction and adduction have been the use imputed to such muscles as are attached to the inside or outside of the scapula, extension and flexion to such as are attached behind or before it; it will, however, we believe, be obvious on reflexion that the scapula can have no occasion for such movements as adduction or abduction, and so also respecting those of the *humerus*; therefore we are disposed to conclude that these muscles in whatever direction situated have their

principal effect in producing a combined operation, promoting the grand object in view, the support and progression of the animal; and we shall endeavour to shew hereafter, that an abductor and adductor contracting at the same instant of time with equal force, will not produce an effect in either of those directions, but will co-operate according to the position of the bone in an extensor or flexor motion.

The muscles of the scapula are six: *trapezius, rhomboideus, levatorius, pectoralis anticus, triangularis, serratus major.*

1. The *trapezius*, is a thin extended muscle of a triangular figure, whose point or termination is fixed on the spinous ridge of the *scapula*, rather above its middle, its base extending from the cervical ligament along the ligament of the 1st, 2d, 3d, 4th, 5th, 6th, 7th, spinous apophyses of the dorsal vertebræ or withers. It sends off an aponeurosis which envelopes great part of the abdominal muscles, terminating at length on the *linea alba*; it also sends off a fleshy portion to the muscles of the neck. Le Trapeze, Vitet. tom. 1. p. 155. Stubbs, *Anat. Horse*, tab. 1. o. p. q. r. f. t. w. x. y. z.

2. The *rhomboideus* is a short almost square, fleshy muscle between the former, takes its attachment to the cervical ligament and ligament connecting the spinous apophyses of the dorsal vertebræ, and passes underneath the cartilage at the base of the scapula, which it almost wholly occupies by its fleshy adherence.

This muscle possesses no tendon, and serves, independent of its effects on the motion of this part, strongly to attach the scapula to the body.

See Plate II. letters *a, a, b.* Triangulaire, Vitet. Med. vet. i. p. 157. Stubbs, *Anat. Horse*, pl. ii. *a, a, b.*

3. *Levatorius, or extensor scapulae.* This muscle is of considerable length, and of a conical figure, its base being fixed to the superior and anterior angle of the scapula, its fibres mixing with those of the *rhomboideus*, from which in some subjects it can hardly be separated; it passes tapering along the neck, adhering to the cervical ligament till it terminates in a point or tendon on the same ligament about the second vertebra.

4. *Triangularis.* The triangular is a fleshy muscle arising from the occiput; where it embraces the neck it grows narrower as it approaches the scapula, where it terminates by a flat tendon, uniting itself to the *rhomboideus*, and to the tendinous insertion of the *serratus major*; its fibres are straight, and the muscle is divided into distinct fasciculæ by interposed cellular membrane.

5. *Serratus major.* This very large muscle forms collectively the figure of a fan inverted, the point thereof being towards its insertion beneath the scapula, its circumference on the ribs.

It takes attachment by numerous digitations of muscle from the first to the 10th or 11th rib, the posterior digitations of this muscle interweave themselves with the digitations of the oblique muscles of the abdomen, and the anterior portions or *radii* with the intercostal muscles. The *triangularis* above described may also be considered as a part of this very extensive muscle; the fibres converging from this vast circumference at length terminate by a transverse fleshy adherence to the superior interior part of the scapula between the *rhomboideus* and *subscapularis* muscles. There is a fascia arising from the upper surface of this muscle which runs to the *linea alba* over all the muscles of the abdomen.

These digitations of the *serratus major* may act in succession, as so many separate muscles, or in masses, the motion being transferred from one to the other, by which it can co-operate with any other series of muscles or alone, by producing a species of rotation of this bone about its axis.

It is also in quadrupeds a powerful suspender of the body, raising it on its contraction upon the extremities. *Plate II. c, d, e, f.* Vitet, Le grand Deuntlé. Stubbs, Anat. H. *Plate II. c, d, e, f.*

6. *Pectoralis anticus.* This is a fleshy muscle of considerable length, of the figure of a very elongated cone; its base being attached by fleshy fibres to the sternum and first rib, anteriorly to the large pectoral, from whence it grows narrower till it terminates on the anterior *crista*, or edge of the scapula, it also contracts a strong adherence to the pectoralis minor, and its aponeurosis covers all the muscles of the scapula. *Plate II. c, d, e, f.* Vitet I. p. 155. Le pectoral antérieur. Stubbs Anat. Horfe. *Plate II. c, d, e, f.* Ser-ratus minor anticus, p. 12.

Note. The human *subclavius* muscle is only wanting, all the other muscles belonging to this part in the human anatomy are found in the horse.

The muscles of the humerus of the horse are 12: *Elevator, antepinatus, communis, pectoralis major, depressor, dorsalis major, latissimus dorsi, subscapularis, pectoralis brevis, adductor, postea spinatus abductor, abductor brevis.*

1. *Elevator proprius* lies immediately before the *antepinatus*, uniting itself with it. Its attachment is along the anterior *crista* of the scapula; passing with the *antepinatus* it terminates on the lateral internal part of the humerus. This muscle is so closely connected with the *antepinatus*, that one tendinous expansion is common to them both. It terminates on the anterior process of the head of the humerus by a tendon which surrounds it.

2. *Antepinatus.* This muscle fills the whole space of the scapula anterior to the spinous ridge, adhering to its whole surface by fleshy fibres; it terminates by a strong tendon on the head of the *os humeri*, covering entirely the protuberance representing the coracoid process.

Plate II. a, b, c, d, e, f. Vitet. Med. Vet. L'Anti-epineux. tom. i. p. 159. Stubbs, Anat. Horfe. *Plate II. a, b, c, d, e, f.* supra-spinatus scapulæ.

3. *Communis.* This muscle is of considerable length and nearly uniform size throughout, and is common to the *humerus* and neck; the panniculus carnosus forms strong fleshy adhesions to this muscle; its first attachment is by a small tendon to the side of the atlas; it there forms attachments to the muscles of the neck by fleshy portions sent to them, and lower down the neck it sends off similar portions, mixed with tendon, to be inserted in the oblique processes of the 4th, 5th, and 6th cervical vertebræ, passing fleshy over the articulation of the *humerus* with the *scapula*, it terminates on the anterior part of the humerus, about its middle, by a short tendon; it sends off a large aponeurosis, which unites several muscles together, and forming at the joints the annular ligaments. It also contracts a very strong adhesion to the lesser pectoral muscle. Vitet. Med. Vet. i. p. 158. L'Humero-cervical.

The above three muscles come under the denomination of extensors.

4. *Pectoralis major.* On removing the skin and fleshy pannicle this muscle is seen taking its attachment along the sternum and ribs, from the middle of it, between the fore-legs, to its posterior extremity, growing smaller as it approaches the humerus, terminating on the internal surface of the superior condyle of the humerus.

Plate II. 1, 1, 2, 3, 5, 6. Vitet Med. Vit. i. p. 160. Le grand Pectoral. Stubbs, Anat. Horfe. *Plate II. 1, 1, 2, 3, 5, 5, 6.* Pectoralis, p. 12.

5. *Latissimus dorsi.* This vast muscle is situated above the *ferratus major*, and under the *panniculus carnosus*: its aponeurosis is covered by that of the *trapezius*. It takes rise by a

very strong aponeurosis on the spinous processes of the last dorsal vertebræ, extending to the loins; on the back it becomes fleshy about its middle, covering part of the false ribs, and part of the surface of the *ferratus major*; passing between this last muscle, and the scapula, it terminates by a thin tendon on the lateral internal part of the humerus: it has likewise a strong attachment by tendon to the middle of the *depressor* muscle, passing with the tendon of that muscle to the small prominence on the inner side about the middle of the humerus, going between the extensors of the *ulna*. *Plate II. r. r. f. t. w. w.* Vitet, Le grand Dorsal. i. p. 160.

6. *Depressor, or teres major.* This muscle is of some length, oval, and somewhat flattened, lying on the under side of the scapula, and closely embracing the *subscapularis*, having its attachment to the superior and posterior edge of the scapula; passing over the articulation, it terminates by a flat tendon with the preceding muscle, observing the same direction in its course as the long abductor does on the opposite side of this bone. Le grand rond. Vitet. i. 159.

The above three muscles are depressors or flexors of the humerus.

7. *Abductor proprius seu coraco-humeralis.* This is a small muscle, cylindrical, and tapering at each extremity, forming a tendon; the uppermost takes its attachment to the lateral internal part of the coracoid process of the scapula, the lower tendon to the inferior and anterior part of the humerus, passing over the articulation, and in contact with the inside of that bone. This muscle acting singly draws the lower part of the humerus to the body, as the *subscapularis* does the upper part of this bone. Vitet. Med. Vet. Le Coraco Humeral. i. p. 161.

8. *Pectoralis brevis.* This muscle will admit of being variously divided, and is strongly attached to the *panniculus carnosus*. This muscle forms the breast like prominence between the fore-legs of the horse; it is of a figure nearly square, divisible into distinct parallel fasciculæ, from the point of the sternum, where it joins the muscles on the opposite side, it passes, forming a flattish tendon to the humerus. We have seen this muscle deficient on the one side, and full on the other.

9. *Subscapularis.* It occupies the under side of the scapula, with which it accords in figure, and needs not any particular description, growing narrower with this bone it descends, forming a broad tendon in the large inner process of the head of the humerus, and will admit of being separated into several smaller muscles. Vitet. Med. Vet. Le sours scapulaire, i. 160.

There are also two other small muscles, which may be considered as adductors, or perhaps rather inflexors; the first of these is not so small as the other, and takes its rise at the interior projection of the scapula, or rather superior part of the glenoid cavity by a flattish tendon passing over the joint on the inside, and taking an oblique direction over the humerus; it terminates in the cavity formed by the condyles of the humerus. We give it the name of *M. articularis major*. The other, which is much smaller (*M. articularis minor*) arises from the tendon of the preceding muscle, or the superior and internal side of the glenoid cavity, and terminates on the head of the humerus by a fleshy attachment. This muscle is not found, we believe, in every subject. These small muscles, it is clear, cannot produce any motion of the limb; their bulk is too small, and they are situated too near the centre of motion to operate with any force in this way. Some have imagined these small muscles about the articulation were designed to move the capsular ligament out of the way of being pinched, an idea we cannot subscribe to: those ligaments surrounding the cavity of the joint not being

is enough to be in any danger of this sort, and with their inner surface too well lubricated to be caught hold of by an oblique round head of bone. The above three muscles may be considered, with the two small ones when acting singly, as adductors.

10. *P. minor* occupies the osseous part of the scapula behind the spinous ridge; it grows narrower with the bone till it reaches the joint, where it forms a lubricous cartilage, which is kept in its situation by two round prominences in the head of the os humeri, acting like the sides of a pulley-block: it then terminates on the external round process of the head of the humerus. *Plate II. b, i, k, l, m, n.* Vitet. i. p. 101. le petit épineux.

11. *Abductor longus* takes its attachment at the superior part of the posterior edge of the scapula; in descending it closely adheres to the *postspinatus*, becoming gradually broader and more fleshy; it terminates on the curved process, which is observable on the upper part of the exterior surface of the humerus, following the same direction on this side as the adductor does on the opposite side of the bone. *Plate II. o, p, q, r.* Vitet. Le grand rond. i. 159. Stubbs. *Teres Minor, Plate II. o, p, q, r.*

12. *Abductor brevis* takes its rise at the inferior and posterior edge of the scapula, or rather from the fibres of the *postspinatus* muscle, lying between it and the *longus abductor*. This and the former pass over the extensors of the cubitus, and terminate between the above muscles on the large crooked process of the humerus. It only differs from the former in being considerably shorter. It sends a tendon to the scabrous edge of the cotyloid cavity. Vitet. *Med. Vet.* i. p. 162. Le petit rond. The effect of the principle we wish to establish respecting the co-operation of muscles on opposite sides of the bone, is no where more obvious than in the two foregoing muscles, with their congeners, the adductors on the inside. This mode of operation of these muscles appears to have escaped entirely the writers hitherto on this subject. Vitet has remarked respecting them, "ils font executer a l'humérus des mouvemens, de flexion, et de demirotation en dehors."

The muscles of the radius and ulna are seven; two to bend, five to extend them.

1. *Extensor longus seu posterior*. This muscle is the most exterior of those which fill up that triangular space formed by the humerus and scapula. It takes attachment at the superior and posterior edge of the scapula, and passing down closely, adhering to the large extensor, it terminates on the extreme point of the olecranon. This muscle is the most powerfully situated of any of this extremity. *Plate II. P.* Stubbs Vitet. *Med. Vet.* p. 165, Le long anconé.

2. *Extensor magnus*. This is nearly the largest muscle of the extremity, of a triangular figure, and occupies great part of the angle between the humerus and scapula posteriorly; it rises by tendinous fibres from two-thirds of the posterior and lower edge of the scapula, growing narrower, it terminates on the inner side of the olecranon by strong and short ligamentous fibres. *Plate II. fig. 1.* N. Vitet. *Med. Vet.* Le Moyen anconé, p. 164. Stubbs, *Plate II. N.*

3. *Extensor transversus*. This muscle is of a figure nearly square; passing obliquely across the other muscles, it rises from the interior part of the crooked spinous process of the humerus, and terminates on the point of the ulna, uniting often with the preceding. *Plate II. O.* Vitet, *Med. Vet.* p. Le Court anconé.

4. *Extensor pygmaeus*, is situated beneath the others, of a cylindrical figure, tapering to either extremity, rising from the middle part of the humerus, and terminating by tendon on the inside of the olecranon. Le petit anconé. Vitet, *Med. Vet.* 165.

5. *Extensor minimus*. This is a small muscle of a pyramidal shape, whose base is fixed by fleshy fibres to the olecranon on its anterior edge, growing narrower, it terminates by fleshy fibres on the back part and inside of the humerus, rather below its middle; this muscle fills up the cavity formed by the two condyles of the humerus posteriorly. Stubbs, *Anat. Horse.* tab. 5. c. Vitet, *Med. Vet.* L'Oli-cranién, p. 165.

These muscles straighten the limb after it has been carried forward by the flexors, raising the body upon the extremity as a fixed point.

6. *Coraco-radialis*. This beautiful muscle is externally covered with a ligamentous coating, which gives it a silvery appearance, especially on its inside, a strong tendinous fascia enveloping it; it occupies the front of the humerus, extending from the coracoid eminence of the scapula to the anterior part of the head of the radius, to which it is fixed by strong, short, ligamentous fibres. Near its lower extremity it sends off a strong tendon, which, passing along the radius, inserts itself into the tendon of the extensor muscle of the shank. This muscle, in passing the joint, is lodged between the two circular, smooth prominences on the anterior part of the head of the humerus, and is provided with a lubricous cartilage beneath. This muscle is the biceps of the human anatomy, which name will not apply in the horse, having but a single origin. Its body is very deeply cleft. Stubbs, *Anat. Horse, Plate VIII. i, k, l, m, n.* Vitet. *Med. Vet.* Le Coraco-Cubital, p. 166.

7. *Flexor convolutus*. This muscle lies in contact with the bone, filling the large cavity or neck of the humerus; formed by the curved process on its exterior part it rises under the posterior part of the head of the humerus, making a spiral turn, it passes over the bone, filling the cavity above-mentioned, and terminates anteriorly in the hollow of the head of the radius. Stubbs, *Anat. Horse.* tab. 9, r, s. *Brachialis internus.* Vitet. *Med. Vet.* p. 165. La brachial.

The two last muscles are termed flexors; they carry the lower part of the extremity forwards, and the extensors serve the purpose apparently of removing the body to it as a fixed point on the ground.

The muscles of the knee and shank are six, two to extend, four to bend them.

1. *Extensor carpi*. It is the body of this muscle which forms the handsome rotundity observable on the lateral and rather external part of the radius. It is attached superiorly to the anterior condyle, uniting to the extensor of the foot; it decreases, suddenly, forming a flat, broad tendon lying close to the bone, passing under the lateral extensor tendon, and over the bones of the knee, it terminates on the superior part of the shank bone, on the anterior tuberosity, by strong ligamentous fibres. Stubbs, *Plate a, a, b.* *Plate II. d, e.* *Extensor carpi radialis.* Vitet. *Med. Vet.* Le Cubital externe antérieur, p. 168.

2. *Extensor lateralis*. This muscle takes its attachment for a considerable length along the sharp edge on the external side of the radius; forming a flat tendon, it takes a direction across the leg, and passing over the tendon of the principal extensor, pursuing an oblique direction over the bones of the knee, it terminates on the inside this joint on the os pollicare. *Plate II. g.* Stubbs, *Plate II. q.* L'extenseur de Genou, Lafosse.

3. *Flexor carpi posterior*. This muscle has an attachment by strong tendons to the posterior and lateral external part of the humerus; increasing in size, and becoming very flat, it descends, keeping an uniform size, down the radius, forming a large flat tendon, dividing into two parts; one is strongly

strongly inferted in the crooked bone, (*os posticum*,) the other passes to the shank, and is inferted on its head. Stubbs, *Plate II. m, n, o, p, q, r, s.* Vitet. i. p. 169. Le Cubital externe postérieur.

4. *Flexor ossis postici.* This muscle takes its attachment on the opposite side of the humerus to the former, sending off a considerable branch to the inside of the *olecranon*, it terminates by strong tendon on the external convexity of the post-carpal bone. Stubbs, *Plate XII. f.* Vitet, Le Cubital interne postérieur.

5. *Flexor internus.* This muscle is smaller than the two former, and is placed more internally; it takes attachment at the lateral internal condyle of the *humerus*, and, passing along the radius, forming a thin tendon, which passes through the capsular ligament, it at length terminates on the posterior part of the cannon or shank bone, and suspensor ligament of the perforans muscle. Vitet. Med. Vet. Le Cubital interne.

6. *Flexor postremus.* This small muscle is the most posterior of those about the head of the radius, extending from the point of the ulna on its inside to the annular ligaments of the knee, uniting to the cartilage which furrounds the flexors of the foot, its aponeurosis covers the whole surface of the extensors of the cubitus. Le cubital grêle, Vitet. i. p. 170.

Besides the above muscles, there are two others belonging to the shank bone which are very minute; they are termed by LaFosse *les canoniers*, and by Vitet *lombrieaux*, p. 175. These very small muscles, which are not always described, are found between the suspensory ligament and the styloid bones, one on each side; they rise under the knee, are fleshy about two or three inches, then form a tendon, which terminates on the cellular membrane of the fetlock joint. They appear of little use, and may rather be considered as the effete rudiments of the interossei muscles, or *lumbricales* of digitated quadrupeds.

The muscles of the pastern, coronet, and foot are five; two to extend, and three to bend them.

These three bones always forming one line and making an angle to the rest of the limb, we consider as one bone in describing the muscles and their effect, as any division would tend to confuse rather than elucidate the general purpose of the muscles going to these parts. LaFosse has, we think, erred in being too minute in this respect by subdividing parts necessarily connected.

1. *Extensor suffraginis* is a small, thin muscle, rising by fleshy fibres from the external condyle of the humerus; it passes fleshy about half way down the *radius*; adhering to its external sharp edge, it passes in a groove through the annular ligaments and capsular ligaments of the knee, and continues its course along the outside of the shank to the fetlock, where it becomes wider, and terminates by a broad tendon on the superior anterior part of the pastern bone. It sends off a branch of tendon which passes round the knee to the flexor tendons under the post-carpal bone. Vitet. i. 1752. L'extenseur antérieur du Paturon.

2. *Extensor pedis.* This is the largest of that assemblage of muscles which furrounds the head of the radius. It arises from the external condyle of the humerus uniting its fleshy fibres with those of the extensor of the cannon or shank, it becomes tendinous above the knee, being lodged and confined by ligaments in a groove; it perforates the capsular ligaments of the joint, and, passing down the front of the shank at the fetlock joint, it forms an union with the extensor of the pastern, and growing broader, and enveloping almost the whole front of the coronet, it finally terminates on the anterior eminence of the coffin bone. Stubbs, Anat.

Horse, tab. viii. 1, 2; 2, 3, 4, 5, 6, 6. Extensor Digitorum Communis. Vitet Med. Vet. i. p. 173.

The two former muscles serve to bring the three bones of the foot forward, and we may remark are, when compared with the flexor, disproportionately small, for the weight of the horse operates as a powerful extensor of this part, and renders great muscular power unnecessary.

3. *Perforatus.* This muscle takes its attachment by fleshy and tendinous fibres to the internal condyle of the humerus; uniting with the *perforans* near the knee, it forms a strong tendon, which, at the back of the knee, (within the concavity of the post-carpal bone,) is received within a strong ligamentous groove, passing down the shank behind the tendon of the *perforans*; at the pastern it forms a remarkable ligamentary *annulus* for the reception and passage of the *perforans* tendon, expanding into a broad flat tendon at the back of the pastern, and, covering the *perforans*, it divides, forming two tendons which pass obliquely over the joint, and terminate on the upper part of the coronet. Stubbs, Anat. Horse, tab. 13. *m, n, o.* Sublimis, p. 42. Vitet. Med. Vet. i. p. 173. Le Perforé.

4. *Perforans*, is a considerable muscle rising with the former, and lying more internally; it will admit of division into three parts, which Monf. LaFosse has described, with his usual bounty, as three distinct muscles. This muscle is fleshy till it reaches the knee, when it forms a flat tendon joined by the *flexor postremus cubiti*, and *radialis* tendons inferted into a flat, smooth cartilage under the *os posticum*, forming here a large cylindrical tendon, when about half way down the shank it is joined by a ligament from the posterior part of that bone arriving at the fetlock, it passes through the *annulus* of the *perforatus*, and continuing between its divided tendon, terminates by a broad, flat tendon on the inferior surface of the coffin bone being covered by the frog. Stubbs, Anat. Horse, Profundus. Vitet. Med. Vet. i. p. 174. Le Perforant.

5. *Aljutorius.* This is a flat muscle lying close to the *radius*, and filling the hollow on the posterior part of that bone, it soon becomes tendinous, uniting with the tendon of the *perforans*.

Of the Ligaments of the Fore Extremity. 1. *Ligamentum suspensorium*, suspensory ligament, takes its rise a little below the head of the shank by muscular and ligamentous fibres, lying between the heads of the styloid bones, it passes down the posterior surface of this bone, quitting its adherence to it about the middle, and, becoming detached, it divides at the fetlock into two branches, which closely and strongly embrace the sesamoid bones; it forms one ligament again at the back of the pastern, filling its hollow cavity, and finally terminates on the head of the coronet bone. At the fetlock it also sends off two branches in an oblique direction downwards, which unite with the extensor tendon of the coffin bone, and preserves it firmly in its situation. Stubbs, Anat. Horse. Interosseum. LaFosse has made a muscle of it. Flechisseur du Paturon.

This ligament is the main support of the fetlock joint, and this joint, though so strongly fortified, is, for obvious reasons, the most subject to be injured of any part of the body.

There are many other ligaments belonging to this extremity, which the proposed limits of this article will not allow us to give a description of, as the lateral ligaments, the capsular ligaments, the burial ligaments, the restraining ligaments, crucial ligaments, &c.

The muscles of the abdomen, allowing for the magnitude and depending position of this part in the horse, are much resembling those of the human.

Obliquus externus, see *Pl. II.*—I. I. I. K. K. L. *m. n.*
Obliquus

Glutæus externus. This muscle lies the most exteriorly of all the muscles of the buttock, and is of a small size: it extends from the second and third spinous processes of the sacrum to the anterior angle of the inferior *ramus* of the ilium, where it joins the *fascia lata*; from thence it extends to the *processus recurvatus externus* of the thigh. This muscle is surrounded on all sides by *aponeurosis*, that on its superior part, covering over the muscles of the rump, is affixed to the spinous processes of the loins; the *aponeurosis* of its posterior part passes underneath the *sacro-tibialis externus*, to which this muscle is contiguous in passing to the external curved process of the thigh.

The *glutæus externus* is so small in quadrupeds, that a doubt might arise whether this was not a part of the *fascia lata*, and the muscle beneath it the corresponding one to the *glutæus maximus* of the human anatomy. From a farther investigation of this subject, we believe that not to be the case, and that it is the real representative of the *glutæus maximus*.

The singular diminution of this muscle in the quadruped may be, perhaps, explained on the following principles of the difference of structure necessary to the two animals. In the man, the legs have to perform a greater variety of motions, as abduction, adduction, rotation, &c. which the horse, whose motions are principally confined to going straight forwards in a line, does not require, so we see this great abductor of the human anatomy becoming a very small one in this animal, while the muscles of the rectilinear progression are vastly increased in bulk, as we may see by looking on the *glutæus medius*, which is the *maximus* of the horse in point of size, and from its attachments, is evidently a direct extensor of the thigh. Others might say it was diminished on account of the increase of the purchase obtained by its insertion into the extended point of the curved process of the thigh being taken farther from the centre of motion, which would compensate for its want of power; for it seems pretty nearly the same thing whether we make a muscle very large, or give it a powerful insertion; sometimes bulk, sometimes power only is necessary, but the consideration of the circumstance in which power should be obtained by accumulated muscular fibres, or by favourable insertion, would lead us beyond our present purpose.

This point once admitted, *viz.* that it is the *glutæus maximus* of the human body, the others follow naturally, and admit of a nearer comparison. The anatomy of the thigh of the dog, which has no curved process, seems to confirm this opinion.

Its use. The direction of this muscle seems to point it out as an abductor; the best way, however, of considering it is to regard it in this animal as a *tensor aponeurosis* of the buttock, assisting the muscles of this part, by its gentle compression and elastic springing and reaction, in their motions.

In the ox it exists with pretty much the same characters.

In the dog it is much larger than in the horse, *cæt. par.* and more fleshy, having a strong attachment to the sacrum underneath the muscles of the tail, and terminating in the back of the thigh by a long tendon.

In the cat the same as in the dog; but here it might well be denominated the *glutæus posticus*.

Synonyma. Stubbs Anat. Horse, p. 23. *Tab. II. m, n, o, p.* *Glutæus externus.* Lafosse, Cours D'Hippiatrique, p. 118. Le moyen fessier. Lafosse, Dictionnaire, p. 456. Bourgelat Elemens D'Hippiatrique, p. 278. Le petit fessier extenseur de la Cuisse. Vitet. tom. i. p. 181. Le fessier externe. Winslow, Exposition Anatomique, p. 135. Le grand fessier. *Glutæus magnus seu maximus omnium auctorum humanæ anatomix.*

2. *Glutæus medius.* This vast muscle lies immediately un-

der the preceding, occupying great part of the upper surface of the ilium; it takes its rise by a point on the lumbar muscles, growing more fleshy as it reaches the ilium; it takes a strong adherence, by fleshy fibres, to the external angle of the inferior *ramus*; after passing the ilium it becomes smaller, and dividing itself into two bodies, one terminates on the superior posterior trochanter, the other by a very strong tendon on the inferior external trochanter, which is covered by the tendon of the external *glutæus*. This muscle may be divided into two distinct parts, one of which might be considered by some as the *maximus* of the human; however, the nature of its attachments seems fully to prove its agreement with the *medius*.

Its use. To draw back the thigh, or (the leg being made a fixed point on the ground) to advance the body upon it.

In the ox. This muscle is more distinctly divided into two bodies, nor does it pass so far over the muscles of the loins. There is also a small almost linear muscle not found in the horse.

In the dog. It is not at all attached to the muscles of the loins, but fills up the ilium entirely, and terminates on the posterior trochanter; and in the cat the same.

Synonyma. Stubbs Anat. Horse, p. 18. *tab. 3. a, a, a, b, b, b, c, d.* *Glutæus Medius.* Lafosse, Cours D'Hippiatrique, p. 18. Dictionnaire, 457. Vitet, Medecine Veterinaire I. Le grand et le moyen fessier. Bourgelat, Elemens D'Hippiatrique, p. 278. Le grand fessier. Monf. Sainbel, first professor of the Veterinary College of London, in his lectures, principally adhered to the names and arrangement given by Bourgelat. Douglas, Myographia comparata, p. 130. *Glutæus medius.* Winslow, Exposition Anatomique, p. 329. Le moyen fessier. *Glutæus medius omnium auctorum hum. anat.*

3. *Glutæus parvus.* This is a short, strong, (and though small, compared with the former) not inconsiderable muscle, lying immediately over the joint; it takes attachment round the posterior ramus of the ilium; passing over the head of the femur it fills the anterior concavity formed by the superior trochanter of the thigh.

Its use. It operates in the combined effect of extending the thigh; its position is that of an abductor.

In the ox, nearly the same. Le petit fessier, Vitet. p. 185.

In the dog, it is of a different shape, being more pyramidal, and attached at the anterior superior part of the thigh.

In the felis, it is attached to the inferior and posterior ramus of the ilium, and terminates at the anterior part of the thigh in a nick or excavation. Stubbs Anat. Horse, *tab. 4. b, i, k, l, l, l, l.* Vitet. Med. vet. p. 181. Le petit fessier. Lafosse, Cours d'Hippiatrique, p. 118. Dictionnaire, p. 457. Le petit fessier. Bourgelat. il n'a rien dit la dessus. Douglas, Myologia comp. p. 131. *Glutæus internus.* Winslow, Exposé Anatomique. Le petit fessier. *Glutæus minor, Albinus. minimus, Innes.*

4. *Psoas magnus.* On removing the intestines from the abdomen and the peritoneum, this beautiful muscle presents itself; it is attached to the inside of the two last ribs, and to the transverse apophyses of the lumbar vertebrae, passing to the edge of the pelvis it joins the iliacus, and is with it inserted into the little trochanter, running between the iliacus major and minor: this muscle can never be mistaken for any other in any animal; it is rather depressed at its origin, but becomes cylindrical and pointed going to its termination; this muscle, near its insertion, is confined by a ligament which binds it and the iliac muscles in their situation.

The *psoas parvus* we consider as a flexor of the loins, by bending the pelvis (to which it is always attached) on the lumbar vertebrae.

Veterinary writers have mostly described this muscle as belonging to the thigh; it, however, generally terminates where the sartorius begins, forming together a digastric muscle of great length.

Ox nearly the same. Le grand Psoas. Vitet. p. 188.

Dog. It is attached to the four last lumbar vertebrae; is vastly larger, and more fleshy in proportion to the animal; it terminates in the same place; but the iliacus parvus, we may observe, does not in this animal terminate where the sartorius begins, for this muscle rises from the anterior angle of the ilium.

In the cat there are three very distinct muscles of this description.

Vitet. Med. Vet. Le grand Psoas l. 179. Lafosse, Cours D'Hippiatrique. Le grand Psoas, p. 117. Dict. 455. Bourgelat, Elemens D'Hipp. Le Psoas, 281. Stubbs, p. 18. tab. 9. a, b, p. 34. Psoas magnus omnium auctorum hum. anat.

5. *Iliacus major*. This muscle takes attachment to the whole inferior ramus of the ilium growing cylindrical, and tapering it is joined to the *psaos magnus*, passing with it through Poupert's ligament to the little trochanter of the thigh.

In the ox it is more intimately blended with the iliacus parvus.

In the dog it is remarkable this muscle is entirely wanting. The ilium is elevated so far above the lumbar vertebrae, that the muscles of the back occupy its place: it is singular, that this circumstance should have escaped the notice of Douglas, who has expressly treated of the anatomy of this animal.

In the felis the same as in the dog.

Stubbs Anat. Horfe. p. 18. tab. 3. tab. 9. p. 34. Lafosse, Cours D'Hippiatrique. p. 117. Dict. Hipp. 455. Bourgelat, Elem. D'Hipp. L'Illiaque. Iliacus internus auctorum hum. anat.

6. *Iliacus minor*. This muscle, which, in general, is quite separate from the iliacus major, takes its rise from the inside of the first sacral apophyses all the length of the posterior ramus of the ilium, passing over the head of the femur it terminates with the psaos and iliacus on the little trochanter; it permits the psaos to pass between it and the iliacus major, and might be considered as a portion of the latter; it is connected by aponeurosis with the muscles which line the pelvis.

These three last muscles have all the power of bending the femur; the two last on the pelvis, the psaos, on the loins, bending both femur and pelvis.

Ox. Not a distinct muscle.

Dog. Is altogether wanting, but appears to be compensated for by having three psaos muscles.

Cat. The same as in the dog.

Lafosse, Cours D'Hippiatrique. Planche 22. Dict. 456.

7. *Adductor teres* is a cylindrical muscle, which makes its appearance on the inside of the thigh; the integuments being removed, it takes its rise on the os pubis, near the symphysis, attached to the same ligament with the rectus abdominis; it terminates along with the adductor magnus, about half way down the inside of the thigh, or rather on the back part of this bone.

Stubbs, Anat. Horfe. tab. 5. s. s. Le pectineus. Lafosse, Cours d'Hippiatrique. p. 118. Le pectineus. Vitet. Med. Vet. p. 180. Le petit pectiné. Bourgelat, Elem. Hipp. Le pectineus. Douglas Pectineus. p. 153.

Comparison of this muscle with the human pectineus. We see by its attachments that it is by no means the same muscle; it is much more nearly allied to the triceps adductor primus,

which it also differs from; it rises too near the symphysis; instead of the brim of the pelvis to be the pectineus, and terminates by insertion along with the large adductor low down the thigh; it is also a more external muscle than the pectineus; but as there is no real pectineus, nature seems to have united in this one muscle the properties of the pectineus and adductor longus, so that we have chosen to call it by a different name from either, viz. *adductor teres*.

The ox has a much flatter muscle, and it sends off a slip to the ligaments of the knee.

Dog. This muscle is rounded, and much resembles the human long head of the triceps.

The cat. There are four adductors, one of which resembles more nearly the human pectineus.

8. *Adductor magnus*. There are three distinct muscles of this description in the horse; this portion of it is seen very distinctly by removing the adductor planus of the leg, taking attachment to the symphysis pubis, and extends down to the posterior and inner part of the thigh, and sending off another portion which is attached to the tibia, or rather to the joint of the femur and tibia by a flat tendon. This muscle may be divided into two portions; one has been called by veterinary writers, *la portion moyenne, et la portion anterieure*; but this we consider as unnecessary and unnatural; for after such division it does not correspond to the three portions of the triceps muscle in the human.

Stubbs, Anat. Horfe. p. 18, 15. 36. 36. &c. tab. 3. p. 46. tab. 14. p. p. q. r. s. t. Lafosse, Cours D'Hippiatrique, le gros et le moyen extenseur. p. 117. Dict. 454. Bourgelat, Elem. Hipp. p. 282. triceps. Vitet. Med. Vet. La Portion anterieure et moyen du triceps crural. p. 182.

Comparison with the human. On actually comparing this muscle with those of the human thigh, it is difficult to decide whether it most resembles the short or great head of the triceps, but it certainly is not much like either of them; therefore, to prevent confusion, we have given it a different name, and left out the term triceps altogether; this muscle, and the *sacro-ischio tibialis internus* both agree in some points with the great head of the triceps, and differ in others. Stubbs considers it one, and the French writers the other; in this confusion I think it best, for distinctness, to avoid the comparison, and give it a name that will not interfere with either.

Dog. This muscle lies underneath the long head of the triceps, and is the largest of the extremity.

Cat. In this animal the artery perforates the tendon of the *adductor magnus*, as it does in the human body, to pass to the gastrocnemius, which serves to identify the muscle in this animal.

Ox. No such portion appears.

9. *Adductor brevis seu quadratus*. This muscle lies immediately underneath the former, and is of a linear figure, being throughout of nearly equal size, rising on the *os ischium* near the edge of the *foramen ovale*; it takes an oblique direction, and terminates on the posterior flat part of the thigh, on the back of the posterior trochanter.

Ox. It exists of the same figure. Vitet. L'Ischio-crural, p. 186.

The dog possesses it, and also a muscle which exactly corresponds to the short head of the triceps in the human.

Stubbs, Anat. Horfe, tab. 15, p. 47. Vitet. Le rond. p. 183. Lafosse, Cours D'Hippiatrique, p. 117. Le petit extenseur. Dict. 454.

10. *Tenforius, or M. fascia lata*. This is considered by some a muscle of the leg, others of the thigh; in this animal, however, it is common to both, and might be very well placed with the common muscles before mentioned. This muscle often varies in figure, but is generally of a triangular shape,

shape, formed of two or three fleshy bodies, the superior point of the triangle is affixed to the *os ilium* on the external angle of its inferior ramus, its posterior point is affixed to the *processus recurvatus femoris* with the *gluteus externus*, with which it forms an intimate union, its inferior part terminates by *aponeurosis* which covers all the muscles of the inside the thigh, and its anterior part, extending also over the patella and tibia.

Ox. This muscle not so completely divided into two portions.

Dog. Besides this muscle there is another strong muscle above it, and which has been noticed by Douglas.

Cat. The same as in the dog.

Stubbs, Anat. Horse, tab. 2. fascia lata.

Lafosse, Cours d'Équippatrique, p. 120. Le fascia lata abducteur de la jambe.

Vitet, Med. Vet. p. 185, Lileo-crural.

Bourgelat, Elem. d'Hipp. abducteur de la cuisse.

Tenon varixæ femoris, Innes et aliis.

Douglas, Myolog. comp. 164.

Although the utmost brevity has been observed in the foregoing descriptions and remarks, and nothing introduced which was not of importance in establishing this science on a rational basis, yet have we already passed the limits we had proposed in treating of this article; if the remaining muscles were considered as the subject at present demands, it would extend beyond the proper bounds for a communication of this sort, we shall, therefore, confine ourselves for the remainder of this extremity, to give only the names as we find them in our MSS. and conclude this article by a description of a few of the most interesting viscera of the horse.

11. *Obturator externus*.

12. *Obturator internus*.

13. *Pyramidalis*.

14. *Articularis*.

15. *Genelli*.

16. *Vastus externus*.

17. *Vastus internus*, Plate III. 7, 8, 9.

18. *Vastus anterior*, Pl. III. 1, 1, 2, 2, 3, 4, 5, 6.

19. *Adductor planus tibiæ*, Pl. II. e, e, f. *Gracilis*, Stubbs.

20. *Adductor longus*, Pl. II. c, d. *Sartorius*, Stubbs.

21. *Poplitealis*, Pl. III. b, b, i.

22. *Sacro-tibialis externus*, tab. 2. i, k, l, u, u, w, w, x, y,

z. *Biceps Cruris*.

23. *Sacro-tibialis posticus*. Bourgelat and Vitet consider this as the *biceps cruris*, and Stubbs the *femitenosus*, Pl. II. 16, 17, 17, 18, 19.

24. *Sacro-tibialis internus*. We insert the synonyma of this muscle, to shew the confusion that is likely to arise from pursuing too close a parallel with the human anatomy.

Lafosse, Cours D'Équippatrique, le gros adducteur de la jambe, p. 119.

Bourgelat, Le Demimembraneux.

Sainbel, Semimembranosus.

Vitet, Med. Vet. p. 182. La Portion posterieure du triceps.

Stubbs, Anat. Horse, adductor magnus femoris. We have here an equal division of opinions, whether it should be considered as part of the triceps, or the semimembranosus. Stubbs has also given a muscle which he calls semimembranosus. The writer of this article is at a loss to understand what is there intended, but is disposed from the figure to believe that the short portion of the sacrotibialis has been divided and taken for that purpose.

These three immense muscles evidently co-operate to one effect, and are better denoted and understood by considering

them in this way, and by the above names than by the human names, even supposing their corresponding muscles in the human body could be clearly ascertained, as those names would only serve to convey the confused and erroneous idea of a detached office to each of those muscles, and as though they were in no way connected; it was the consideration of the three muscles last mentioned that first gave us the idea of the real effect of abductor and adductor muscles, in promoting animal locomotion. That such vast masses of muscle as these should be carried about by the animal to perform such trivial offices as abduction or adduction it would be highly absurd to imagine: for it may be laid down as an axiom that the bulk of the muscle always bears some proportion to the importance of its office, and pursuing this reasoning a step farther, we may conclude that even abduction and adduction itself are often performed by the co-operation of what are termed extensor and flexor muscles.

25. *Tibialis anticus*, Pl. II. tab. 1. Pl. III. 10, 11, 12, 13, 15, 16.

26. *Tibialis internus*. a muscle not always distinct.

27. *Gastrocnemius*, Pl. II. m. m. m.

28. *Linearis*, seu *tibialis externus*.

29. *Extensor brevis pedis*.

30. *Extensor longus pedis*, Pl. II. 36, 36.

31. *Peroneus*, Pl. II. 37, 37.

32. *Perforatus*, Pl. III. k, l, m, n, o, p.

33. *Perforans*, Pl. III. 23, 24, 25, 26, &c.

34. *Perforans minor*.

Of the lungs of the horse. This viscus in the horse consists of three lobes, two large ones which occupy the sides of the chest, having at their anterior presentation two elongated auriform appendages which closely envelope the heart; the third or central lobe is much smaller, lying between the other two, and presents itself to the sternum. It is not unfrequent in the lungs of horses that small red patches are observable that will not inflate like the other parts of the lungs, and are therefore, not improbably, obliterated cells from colds, inflammation, &c. the settling of the blood will also give an appearance of this kind, but this does not prevent the lungs from inflating.

The trachea of the horse, where it passes into the chest, and previous to its entering the lungs, has a singular duplication of the cartilaginous rings which is more flexible than the rest of this tube, so as to admit by very slight pressure, the sides of the tube to be brought in contact, and the total obliteration of its cavity: this structure may perhaps adapt the diameter of the trachea to any quantity of air that is passing through it to the lungs.

Of the liver. This viscus in the horse is large, deeply cleft into lobes, and possessing no gall bladder. The ductus venosus of the human fœtal circulation is also wanting in the equine fœtus.

Of the stomach. The stomach of the horse consists of a pouch or bag of the usual obcordate or reniform figure without, within, it is lined with membranes, which more resemble the coats of the different stomachs of ruminating animals than the inside of the generality of stomachs of this external figure.

There is distinguishable on the inside a white rugose coat, (see Plate IV.) not vascular, which appears to be a continuation of the elastic insensible white tissue, which lines the œsophagus; this spreads over the upper part and broad end of the stomach, till it abruptly terminates about its middle; this part of the stomach corresponds very much to the paunch, or first stomach of ruminating animals.

The second division occupying the lower part or great arch of the stomach, extending high up the sides, towards

the small arcl., and reaching nearly to the cardiac orifice is lined with a smooth red membrane, and is highly vascular, resembling more the stomach of carnivorous quadrupeds; the rest of the stomach extending from the termination of the former to the entrance into the duodenum consists of a pale red membrane, extremely loose, and thrown into longitudinal folds or duplicatures, intermixing with the former by almost imperceptible gradations of colour; this coat is thickly covered with a slimy mucus, not observable on the other coats; this part of the stomach has a strong resemblance to the fourth, or last stomach of ruminating quadrupeds.

The exact purpose of these three constructions of membrane in the same stomach is not easily assigned; whether they all unite in one common purpose, as though the stomach consisted of one common membrane for its lining, or whether the food is changed by the successive operation of each of these membranes, we know not: we may observe on opening the stomach that the food makes pretty much the same appearance against whatever part of the stomach it may lie, that one should be hardly led to conclude they have in the horse distinct functions, but combine in one common effect, and are in reality the rudiments only of the structure of the stomach, peculiar to the generality of granivorous quadrupeds, without producing any precise effect here; for it seems difficult to imagine how the different operations should take place in the same sack without disturbing each other. Nature seems to observe a connected system, not only in the entire animal, but also in each particular organ, forming an insulated system of structure and operations.

It is generally imagined there is some valvular apparatus to this viscus, which prevents the horse from vomiting, and much has been written on this subject; we never could discover any thing of the kind, and are disposed at present to believe, that as the form of the horse would render vomiting inconvenient, the power of receiving the impression which excites this operation is withdrawn from the animal, as it would be idle to suppose a power given to vomit with a structure of parts not admitting of it; it would be as inconsistent as placing the head of the lion on the shoulders of the hare, or giving the disposition of the hare to the lion's form, by which the very purposes of nature would be defeated. It was, however, an opinion entertained with some confidence, at the Veterinary College of Copenhagen, that the root of the white hellebore (*veracrum album*) would occasion a horse to vomit, being placed under the skin!

In an ass's stomach I have seen a valvular apparatus at the cardiac orifice, and the insensible white membrane extended into the inside of the stomach, about one inch, forming a loose fold, which served to mark the divisions of the stomach more strongly, but could not in the smallest degree operate as a valve; this lusus is, however, not very frequent. The stomach of the hog also partakes of this sort of structure, though not so distinctly marked as in the horse.

Of the chyle duct of the horse. This duct in the horse is not very difficult to find, both from its magnitude and situation, lying on the aorta, at the loins, very much exposed as it passes forward towards the thorax, it dips lower beneath the surface passing nearly under the aorta, it is much smaller in the middle and enlarging to each end; about the 4, 5, 6 ribs, it is as large as a man's thumb, it becomes narrower again as it passes into the axilla, but enlarges again at its termination, where it enters the vena cava, or rather the vessel formed by the union of the two jugular veins, and anterior to the subclavian, it there forms a large round head or cyst, and is provided with a valvular apparatus to prevent the return of the chyle or the blood

from entering the duct. Toward the loins it has a strong adherence to the coats of the aorta, and lower down is strongly embraced by the tendon of the diaphragm; it then enlarges, and passing upon and by the side of the lumbar veins, discharges itself by several openings into them, which openings are also provided with valves.

The openings of this duct into the lumbar veins which have never been before remarked, seem to point out a double circulation in this vessel, *viz.* from the middle to each end as the smallness of it in the middle would also seem to indicate; we have, however, in some subjects found a valve opening anteriorly, or towards the jugular veins, within six inches of its posterior termination; this duct, however, is subject to very great variation.

In another subject we found this duct terminate about the second lumbar vertebra, where it divided one branch forming a sharp curvature, circumscribing a portion of the insertion of the diaphragm, the other seemed to be lost about the fourth or fifth lumbar vertebra in smaller ramifications. In another subject which we injected, the duct was discovered on the left side, about the situation of the last dorsal vertebra, it crossed the aorta, and passed to the right side, immediately before and resting against the superior mesenteric artery; it then divides into several small canals, which appeared to be passing to their termination in the lumbar veins.

Parts of generation. No animal whatsoever is more richly provided with the various apparatus belonging to these parts than the horse, for nature here seems to have lavished with profusion whatever can tend to perfect the generative act; there is no part of the human construction of these parts but is found in the horse; the most essential difference appears to us to consist in the male, of the penis being suspended from the integuments of the abdomen, and not immediately from the pubis as in the human; hence the acuteness of the angle where it passes the pubis, is such as to render the passage of the catheter almost impracticable.

We have remarked that the penis of the horse possesses a voluntary power of erection, not known to the human, or perhaps most other animals; this power is exerted on making water, and though the erection is not very considerable, it is yet sufficient to bring the penis from its sheath, which is effected apparently by its increased gravity from blood accumulating in the cavernous cells of this part. After staling this semi-erection of the penis subsides, and it again is retracted within the sheath: this operation, though occurring daily to the sight of every one, has not, it is apprehended, been noticed by any veterinary writer.

The urethra of the horse is muscular from one extremity to the other, being formed on the outside of strong transverse fleshy fibres and supported by a strong ligament.

Naturalists were long at a loss to discover the *mammæ*, or teats of this animal; in the male they were at length detected by Buffon, on the sheath of the penis. Mr. John Hunter also made the same remark without knowing that Buffon had previously noticed it; these teats are largest in the foetus and young foal.

In the glans of the penis, immediately over the opening of the urethra externally, there is a large cell or cavity, smooth on the inside, and lined with a membrane, which secretes a brown unctuous substance for the lubrication of the penis, and defending it from the corrosive effects of the urine; another cell of a similar description with the former is observable, on the side of the urethra, and nearly surrounding it, it is separated from the former by a membranous partition.

The apparently unctuous secretion above described is miscible with water; it burns, however, in the fire like an oily

oily substance, and is not soluble in spirits of wine or nitrous acid, nor does it dry on exposure to the air during several weeks.

There is nothing resembling a frænum to the penis of the horse.

The cavernous body of the penis has no longitudinal septum; its cells are divided by transverse fibres, which are probably muscular; it terminates in a point near the extremity of the glans, where it is surrounded on every side by the venous body, termed in the human corpus spongiosum.

Another singularity in the genital parts of this animal is, that there is an immense congeries of veins, lying on the back of the penis, which are filled during copulation, forming an elevation nearly as large as the penis itself; these veins communicate with both the cavernous and spongy bodies.

The *vesiculae seminales*, and the bladders attached to them, are very large in the horse, having integuments of considerable thickness.

There is a great peculiarity in the structure of the *vas deferens* of the horse, which in passing over the bladder, enlarges to the size of the human thumb; this amplification extends from its entrance into the urethra to the distance of five or six inches from this point, where it again becomes of its ordinary diameter.

The inside of this enlargement is composed of cells, and somewhat resembles in construction the cells of the *corpus cavernosum penis*, passing in a transverse direction across the tube. In the centre of this enlargement passes the small canal of the *vas deferens*, each cell communicates by one, two, or more small pores with the canal of the *vas deferens*, these cells diminish as they approach the neck of the bladder till they are lost in a smooth passage entering the urethra.

What the purpose of this structure is does not appear; it must retard the passage of the *semen*, and probably adds some fluid to it, secreted from the cells themselves.

On a first view of the pudenda of the mare the position of the clitoris appears to be inverted, compared with the position of the same part in the human, being found on the lower part of the vagina; this apparent difference is removed when both are considered in the same position.

That the present article may not be too far extended we refer the consideration of the other viscera and parts of the horse to be introduced under their proper heads.

ANATOMY is also used for an artificial representation of the structure and parts of the human body in metal, plaster, wax, or the like. In this sense we say, the wax-work *anatomy*. R. Dickenfon, statuary, finished an human *anatomy* in plaster of Paris, representing a man standing upright with his skin flayed off.

There is likewise a wax-work *anatomy*, said to have been invented by Gaetano Giulio Zumbo, a Sicilian of Syracuse. Yet M. des Noues, who learnt it of him, and probably made some improvements in it, bringing it to Paris, arrogated the chief honour of it to himself. Some prefer, above all the rest, for public lectures and courses, the use of real parts of dead bodies prepared by injection. Anatomical injections are either of mercury, or mixtures of equal parts of bismuth, lead, and tin. Neumann. The inconveniences that attend the dissecting of dead carcases, have occasioned the invention of another cleaner and more durable kind of subjects. Reifelius contrived a human statue, wherein the circulation of the blood was represented to the sight, and some hing of the like kind was shewn by M. Chovet; and more lately still by Madame Bacheron, who has brought this art to great perfection. See her observations on the artificial anatomy, in the Memoirs of the Acad. des Scienc. an. 1759. Hist. 94.

ANATOMY is sometimes used to denote the subject to be anatomized. Thus (by 39 Hen. VIII. cap. 22.) the company of barbers and surgeons may have and take yearly four persons condemned, adjudged, and put to death for felony, for *anatomies*; and to make incision of the same dead bodies.

And by 25 Geo. II. cap. 37. the bodies of felons convicted of murder, in the county of Middlesex, or city of London, are, after execution, to be delivered to the hall of the surgeons company, to be dissected and anatomized; and in case such conviction and execution shall happen to be in any other county, or place, in Great Britain, then the body of such murderer shall be delivered by the sheriff, &c. to such surgeon as the judge shall direct.

ANATOMY is also used, in an improper sense, for the ANALYSIS of mixt bodies.

In this sense the chemists sometimes call their art *Spagyric anatomy*, *anatomia Spagyrica*.

In which sense we sometimes say the *anatomy* of vitriol, the *anatomy* of sulphur, the *anatomy* of Rhenish wine, &c.

ANATOMY is also used in a less proper sense, to denote the art of resolving compound bodies into simple ones.

In this sense any kind of compound body may be considered as the object of anatomy; that is, any body wherein there are divers parts joined together; even the taking asunder an artificial, political, or moral being, may, in this sense, come under anatomy.

ANATOMY is also used, *figuratively*, for an exact search or examination of the parts of a discourse, business, or the like: in which sense, we say the *anatomy* of a book, a doctrine, or the like.

ANATORIA, in *Geography*, a small town of Greece, anciently TANAGRA.

ANATRIPSIS, from *ανα* and *τριψω*, *I wear*, in the *Ancient Medicine*, denotes friction.

The word is sometimes also written simply TRIPSIS.

ANATRON, or NATRON. See NATRON.

ANATRON is also used for GLASS Gall.

ANATROPE, *ανατροπη*, from *ανατρεπω*, *to subvert*; a subversion literally, or relaxation of the stomach, attended with the loss of appetite, vomiting and nausea.

ANATTOM, in *Geography*, an island in the southern Pacific Ocean, and the most southern of those called New Hebrides. S. lat. 20° 3'. E. long. 170° 4'.

ANATZARTHON, in *Ancient Geography*, an archiepiscopal see of Asia, under the patriarchate of Antioch.

ANAUA, or ANAVA, a city placed by Herodotus in Phrygia, between the rivers Marfyas and Meander, but nearer their sources than their confluences. To the south-west of this city, and near it was a lake, from which they obtained salt.

ANAUDIA, among *Naturalists*, denotes dumbness, or a want of the use of speech.

Anaudia is, by some, made to differ from *aphonia*, as the former is owing to a defect of the nerves of the tongue, the latter to that of the nerves of the larynx.

Infants and mutes are *anaudi*, *αναυδοι*, not *aphoni*, *αφωνοι*.

ANAUDOMA, or ANADOMA, in *Ancient Geography*, a town of Ethiopia, near Egypt.

ANAVINGA, in *Botany*, a genus of plants, with incomplete flowers, comprehending some trees of the East Indies, which are not much known to botanists. The generic characters, according to La Marck, are, that the flower has a calyx of five oval, concave leaves, opening in a rose, and permanent; it has no corolla, but at the base of each foliola of the calyx are seen two pedicles shorter than the folioles of the calyx, and somewhat hairy; the stamina are ten, of the length

length of the calyx, and have their filaments inserted alternately, between the pedicles, upon the base of the folioles of the calyx; the anthers are small, ovate, and divided into two by a furrow or suture; the ovary is superior, globular, or oval, seated on a short style, and terminated by a stigma, with a sphenoidal head. The fruit is an oval or globular berry, marked by five slight channels, and containing ovate and reddish seeds in a pulp. There are two species; 1. *A. lanceolata*, with alternate leaves, lanceolated, slightly serrated, subpubescent beneath, with oval berries longer than the peduncle. 2. *A. ovata*, with alternate leaves, ovate, acuminate, and ferrulate, and globose berries equal to the peduncle. This is also called *tabana* and *a. barbata*. The anavanga is a tree of middle size, that grows in the sandy soil of Malabar, in the East Indies, especially about Cochin. It is an evergreen, and its fruits or berries are ripe in August. Its leaves, bark, and fruit have a bitter taste.

The juice of the berries drank excites sweat, cures malignant humors, and keeps the body soluble. A decoction of the leaves in water makes a sit bath for such as are afflicted with boils in the joints.

ANAUNACHION, from *α, ναυς, slip*, and *μαχημα, I fight*, in *Antiquity*, the crime of refusing to serve in the fleet. The punishment assigned for this offence was infamy.

ANAURUS, in *Ancient Geography*, a river of Greece, in Thessaly; also a river of Syria; and a river of the Troas, near mount Ida.

ANAX, in *Ancient Writers*, denotes a hero or god. The word seems formed of the Hebrew *anacim*, or *enacim*, which signifies the same. Some will have it originally to import giants, called also *γηνεῖους, earth-born*. Cicero assures us, that the three eldest sons of Jupiter, called *Διοσκυδοί*, were also denominated *anaces*.

ANAXAGORAS, in *Biography*, one of the most illustrious philosophers of antiquity, was born at Clazomene, in Ionia, in the first year of the 70th Olympiad, or the 500th year before Christ. In the ardent pursuit of knowledge he left his native country, where he possessed a patrimony sufficient for securing him distinction and independence, and went to reside at Athens. Having surrendered his lands to his relations, "he devoted himself wholly," as Cicero says, (*Tusc. Qu. lib. v.*) "to the divine pleasure of learning and inquiry." At Athens he diligently applied himself to the study of eloquence and poetry, and was particularly conversant with the works of Homer, whom he admired as the best preceptor, not only in writing but in morals. From Athens he removed to Miletus, that he might attend upon the public instruction of Anaximenes. At the age of 20 years he left Miletus, and entered upon the study and profession of philosophy at Athens, where, according to Diogenes Laertius, he remained 30 years. As a teacher of philosophy he acquired high reputation, and his pupils were some of the illustrious men of the age in which he lived; such were Euripides the tragedian, Pericles the orator and statesman, to whom some add Socrates and Themistocles; but the date of the birth of the latter is several years prior to that of this philosopher. In process of time his reputation excited jealousy and envy, and exposed him to severe persecution. Cleo accused him with impiety for teaching that the sun was a burning mass of stone, and thus robbing it of its divinity; and Thucydides charged him with treasonable practices. But the chief offence of Anaxagoras was, probably, the propagation of new opinions concerning the gods. There can be no doubt that he contradicted and opposed the vulgar opinions and superstitions; accordingly, it is related, that he ridiculed the Athenian priests for predicting an unfortunate event from

the unusual appearance of a ram which had but one horn; and, in order to convince the people that there was nothing preternatural in the phenomenon, he opened the head of the animal, and shewed them that it was so constructed, as necessarily to prevent the growth of the other horn. Anaxagoras, however, was thrown into prison, and condemned to death; and it was with difficulty that Pericles obtained from his judges the milder sentence of fine and banishment. Upon receiving his sentence of condemnation, he comforted himself by saying, "Nature long ago pronounced the same sentence against me;" and to one of his friends, who expressed regret on account of his banishment, he said, with a mixture of fortitude and vanity, "It is not I who have lost the Athenians, but the Athenians who have lost me." When news of the death of one of his sons was brought to him, as he was delivering a lecture of philosophy, he calmly said, "I knew that I begat him mortal."

After his banishment he passed the remainder of his days at Lampfacus, where he employed himself in instructing youth, and obtained great respect and influence among the magistrates and citizens. At length the infirmities of age terminated his labours in the year before Christ 428. Through his whole life he appears to have supported the character of a true philosopher. Superior to motives of avarice and ambition, he devoted himself to the pursuits of science; and, in the midst of the vicissitudes of fortune, preserved an equal mind. Being asked, just before his death, whether he wished to be carried for interment to Clazomene, his native city, he said, "It is unnecessary; the way to the regions below is every where alike open." In reply to a message sent him, at that time, by the senate of Lampfacus, requesting to be informed in what manner they might honour his memory after his decease, he said, "By ordaining that the day of my death be annually kept as a holiday in all the schools of Lampfacus." His request was complied with, and the custom remained in Lampfacus in the time of Diogenes Laertius. The festival Anaxagoria was instituted on this occasion. The inhabitants expressed their veneration for his memory, by erecting a tomb, and inscribing upon it the following epitaph:

“Ενθάδε, πλαστον ἀληθείας ἐπι τεμα πειρασκι,
Οὐρανόε κοσμου κείηαι Ἀναξαγόρας.

“This tomb great Anaxagoras confines,
Whose mind explor'd the paths of heav'nly truth.”

It is also said, that two altars were raised in honour of his memory, one dedicated to "Truth," and the other to "Mind," an appellation which was given him on account of the doctrine which he taught concerning the origin and formation of the world.

With the credible records of Anaxagoras many fabulous relations are intermixed; nevertheless, it is sufficiently attested, that this philosopher possessed a very extensive and accurate knowledge of nature, considering the age in which he lived, and allowing for the strange and erroneous conceptions which are blended with his more rational opinions. Of the heavens he seems to have had no other idea than that of a solid vault in which luminous bodies are fixed; and these bodies he conceived to be stones, raised from the earth by the rapid motion of the ambient æther, set on fire by its heat, and kept in their places by the swift circular motion of the heavens. On the other hand he is said to have taught, that wind was produced by the rarefaction of the air; that the rainbow is the effect of the reflection of the solar rays from a dense cloud placed opposite to it like a mirror; that the moon is an opaque body enlightened by the sun, and an habitable

habitable region, divided into hills, vales, and waters; that the comets are wandering stars; and that the fixed stars are in a region exterior to those of the sun and moon.

Of the opinion of Anaxagoras concerning the origin of the material world, the information transmitted to us is more correct. Having learned in the Ionic school that bodies are composed of minute parts, and having observed in different bodies different and often contrary forms and qualities, he concluded, that the primary particles of which bodies consist, are of different kinds; and that the peculiar form and properties of each body depend upon the nature of that class of particles, of which it is chiefly composed. A bone, for instance, he conceived to be composed of a great number of bony particles, a piece of gold of golden particles; and thus he supposed bodies of every kind to be generated from similar particles, *ὁμοιομεγεθῆσι*, and to assume the character of those particles. This system is thus exhibited by Lucretius, lib. i. v. 380, &c.

“ — Principium rerum quam dicit homœomeriam,
Ossa videlicet è pauxillis atque minutis
Ossibus: sic et de pauxillis atque minutis
Visceribus viscus gigni; fanguenque creati
Sanguinis inter fe multis cœeuntibus guttis;
Ex aurique putat micis consistere posse
Aurum; et de terris terram concrefcere parvis;
Ignibus ex ignem; humorem ex humoribus esse,
Cætera consimili fingit ratione, putatque.”

“ With Anaxagoras, great Nature’s law
Is similarity; and every compound form
Consists of parts minute, each like the whole;
And bone is made of bone, and flesh of flesh;
And blood, and fire, and earth, and massy gold,
Are, in their smallest portions, still the same.”

The absurdity of this notion is evident; it admits of no simple, uncompounded principles; it makes no provision for production or dissolution, the formation of any new body being, according to this doctrine, nothing more than the collecting together of a number of small similar bodies; and it gives no explanation of the original formation of the small compound bodies of which the larger consist. The invention of the system, however, evinced the ingenuity of the author, who had recourse to the notion of similar particles, with a view of obviating the objections which lay against the doctrine of atoms, as he had received it from Anaximenes. But the most important improvement which Anaxagoras made upon the doctrine of his predecessors, was that of separating, in his system, the active principle in nature from the material mass upon which it acts, and thus introducing a distinct intelligent cause of all things. The similar particles of matter which he supposed to be the basis of nature, being without life or motion, he concluded that there must have been, from eternity, an intelligent principle, or infinite mind, existing separately from matter, which, having a power of motion within itself, first communicated motion to the material mass, and, by uniting homogeneous particles, produced the various forms of nature. That Anaxagoras maintained an infinite mind to be the author of all motion and life, is attested by many ancient authorities. Plato (Phæd. Hippias major) expressly asserts, “that this philosopher taught the existence of a disposing mind, the cause of all things.” Aristotle says, (Metaph. lib. i. c. 3.) that Anaxagoras taught, that mind was “the cause of the world, and of all order,” and that “while all things else are compounded, this alone is pure and unmixed; and that “he ascribes to this principle two powers, to know and to move,

saying, that mind put the universe into motion.” Cicero (De Natura Deor. lib. i. c. 10, 11. tom. ii. p. 511. Tuscul. Quæst. lib. iii. c. 24. tom. ii. p. 404. De Orator. lib. iii. c. 34. tom. i. p. 351. ed. Olivet.) also asserts, though not without some inconsistency, with what he had before said of Thales, that Anaxagoras was the *frst* who taught that the arrangement and order of all things was contrived and accomplished by the understanding and power of an infinite mind. Plutarch (in Pericl. Oper. tom. i. p. 154. ed. Xylandri) confirms this account of the doctrine of Anaxagoras. “The Ionic philosophers,” says he, “who appeared before Anaxagoras, made fortune, or blind necessity, that is, the fortuitous or necessary motion of the particles of matter, the first principle in nature; but Anaxagoras affirmed, that a pure mind, perfectly free from all material concretions, governs the universe.” To the same purpose Diogenes Laertius (lib. ii. n. 6. tom. 1. p. 82.) represents Anaxagoras as teaching, that “the universe consists of small bodies composed of similar parts, and that mind is the beginning of motion.” “He was the first,” says the same writer, “who superadded mind to matter, opening his work in this pleasing and sublime language,” “All things were confused, then came mind, and disposed them in order.” Dr. Davies in his note on the passage, in which Cicero seems to be charged with inconsistency, observes, that Thales supposed God to be the soul of the world, mixed and united with matter; whereas, Anaxagoras held him to be a pure mind, free from all material union and mixture. From these and other concurrent testimonies, it sufficiently appears that Anaxagoras was the first among the Greeks who conceived mind as detached from matter, and as acting upon it with intelligence and design in the formation of the universe. The infinite mind or deity which his predecessors had confounded with matter, making them one universe, Anaxagoras supposed to have a separate and independent existence, and to be simple, pure intelligence, capable of forming the eternal mass of matter according to his pleasure. Thus he assigned an adequate cause for the existence of the visible world. Diogenes Laertius, lib. ii. in Anaxagor. Plutarch in Pericle, *ubi supra*. Suidas, Gen. Dict. Brucker’s Hist. of Philos. by Enfield, vol. i. p. 148—153.

ANAXAGORIA, in *Antiquity*, a festival observed in honour of ANAXAGORAS.

ANAXANDRIDES, in *Biography*, a comic poet, was a native either of Rhodes or Colophon, and flourished during the reign of Philip of Macedon, B. C. 370—80. Suidas says he was the first who introduced on the stage love-adventures, turning upon the mishaps of young damsels. He was a personable man, and affected great magnificence in his dress and equipage, and he is said to have once recited a piece at Athens on horseback. His temper was morose and splenetic; and he was much chagrined at the ill success of his performances, which were often incorrect, and which he would not take pains to amend and polish. Of 65 plays which he composed, ten only were crowned. The Athenians condemned him to die of a famine for a line in which their government was censured. An “Odyssey” of this poet is mentioned by Athenæus. Casaubon suggests, that Anaxandrides was the Alexandrides of other writers. Gen. Dict.

ANAXARCHUS, a Grecian philosopher, was a native of Abdera, and belonged to the Eleatic sect. He flourished about the 110th Olympiad, or 340 years before Christ, and enjoyed the confidence of Alexander, whom he treated with the freedom of a friend in some instances, but with the servility of a sycophant in others. On one occasion, when Alexander aspired at the honours of divinity, this philosopher checked his vanity by pointing to his finger when it bled, saying,

taving, " See the blood of a mortal, not of a God ;" and on another occasion he recited a verse from Euripides at a banquet, in order to admonish him of his mortality. For an instance of his misapplied and unseasonable adulation, see **ALEXANDER**. Anaxarchus was addicted to pleasure ; and on this account, not from the apathy and tranquillity of his life, he obtained the appellation of *Ευδαίμωνος*, " The Fortunate." Diogenes Laertius, lib. ix. tom. 1. p. 579. Brucker's Hist. Phil. by Enfield, vol. i. p. 436.

ANAXILAUS, a native of Larissa, lived in the time of Augustus, and professed himself a follower of Pythagoras. That his pretensions to an intimate acquaintance with the mysteries of nature, and to the exercise of magical powers might obtain credit, Phny (Nat. Hist. lib. xix. c. 1. lib. xxviii. c. 11. lib. xxxv. c. 15.) relates several curious arts by which he astonished and alarmed the ignorant multitude; and of these one was that of giving a livid and ghally hue to the countenance by means of sulphureous flame. He was banished from Italy in the 28th year before Christ, by order of Augustus, for the crime of magic. Brucker's Hist. Phil. vol. ii. p. 40.

ANAXIMANDER, a famous Greek philosopher, was the disciple and friend of Thales, and was, probably, born at Miletus, in the 3d year of the 42d Olympiad, or in the 610th year before Christ. An anecdote is related concerning him, from which it has been inferred, that he was employed in the instruction of youth. Being laughed at for singing or reciting his verses ill, he said, " We must endeavour to sing better for the sake of the boys." He was the first among the Greeks who taught philosophy in a public school; and is often spoken of as the founder of the Ionic school, though this honour really belongs to Thales. The mathematical and astronomical sciences are, without doubt, much indebted to Anaximander. He framed a connected series of geometrical truths, and wrote a summary of his doctrine. He is said to have been the first who delineated the surface of the earth, and marked the divisions of land and water upon an artificial globe. The invention of the sundial has been ascribed to him; but Herodotus (lib. ii. c. 32.) with greater probability, ascribes the origin of this instrument to the Babylonians. He might possibly have used a gnomon, in order to ascertain more correctly than Thales had done, the meridian line, and the points of the solstices. Pliny (lib. ii. c. 1.) refers to this philosopher the discovery of the obliquity of the ecliptic; but if Thales was acquainted with the method of predicting eclipses; he could not be ignorant of this obliquity. It is related of him that he predicted an earthquake; but we need not say, that, as this is impossible, the relation must be fabulous. Among the physical notions imputed to Anaximander are these: That the stars are globular collections of air and fire, borne about in the spheres in which they are placed; that they are gods, that is, inhabited and animated by portions of the divinity; that the sun has the highest place in the heavens, the moon the next, and the planets and fixed stars the lowest; that the earth is a globe, placed in the middle of the universe, and remains in its place; and that the sun is 28 times larger than the earth.

The doctrine of this philosopher concerning the first principles of things, and the origin of nature, is so obscurely and variously related, that it cannot be well ascertained. His general system seems to have been, that infinity, *τὸ ἀπείρον*, is the first principle of all things; that the universe, though variable in its parts, is immutable as a whole; and that all things are produced from infinity, and terminate in it. What Anaximander meant by infinity, and whether he understood by it the material subject, or the efficient cause of

nature, are subjects of controversy. Plutarch asserts, (Plu. Phil. lib. i. c. 3. Oper. vol. ii. p. 875.) that the infinity of Anaximander was matter; and Aristotle (Nat. Aufc. lib. i. c. 5. lib. iii. c. 4. Oper. tom. i. p. 319—331.) explains it in the same manner; and several modern writers adopt the same idea. Others suppose that he used the term infinity to denote the humid mass of Thales, together with the divine principle by which he supposed it to be animated. This opinion is supported by the authority of Hermias, who asserts (Iris. Gen. § 10. apud Tatian.) that Anaximander supposed an eternal mover or first cause of motion, prior to the humid mass, or *τὸ ὑγρὸν* of Thales. And Aristotle himself speaks of the infinity of Anaximander, as comprehending and directing all things. Anaximander is said to have been the first who laid aside the defective method of oral tradition, and committed the principles of natural science to writing. Anaximander lived 64 years. Diog. Laert. lib. ii. Strabo, lib. i. Pliny, lib. vii. c. 56. Suidas. Euseb. Prap. Ev. lib. x. c. ult. Brucker, by Enfield, vol. i. p. 145—147.

ANAXIMANDRIANS, a name given by some writers to the followers of Anaximander. These are otherwise denominated *hylopathii*; and stand opposed to the *atomists*. The *Anaximandrians* make the most ancient sect of *philosophical atheists*; they allow of nothing in nature but bodies. These bodies, they assert, admit of qualities which produce and destroy each other, in a circle without beginning or end. See **ANAXIMANDER**.

ANAXIMENES, a philosopher of Miletus, was born about the 56th Olympiad, or 556 years before Christ, and was a disciple and companion of Anaximander. On his inquiring into the nature and origin of things, he traced the footsteps of his master, and endeavoured to throw new light upon his system. According to him the first principle of all things is air, which is infinite or immense, and perpetually active. This air is a subtle æther, animated with a divine principle, whence it becomes the origin of all things, and is God. His doctrine, therefore, was a continuation of that of Thales and Anaximander, with this difference, that he supposed the divine energy to reside in air or æther. He also taught, that all minds are air; that fire, water, and earth proceed from it by rarefaction or condensation; that the sun and moon are fiery bodies of a circular form; that the stars, which are fiery substances, are fixed in the heavens, like studs in a crystal plane; and that the earth is a plane tablet resting upon the air. Plut. Plac. Phil. lib. i. c. 36. lib. ii. c. 11. lib. iii. c. 10. Oper. tom. ii. p. 876—888—894. Cicero de Nat. Deor. lib. i. c. 10. Oper. tom. ii. p. 511. Academ. lib. ii. c. 37. tom. ii. p. 64. Suidas. Diog. Laert. lib. ii. Brucker, by Enfield, vol. i. p. 147.

ANAXIMENES, a Greek rhetorician and historian, was the son of Aristocles, of Lampascus, and the disciple of Diogenes the Cynic, and of Zoilus of Amphipolis, who railed against Homer. He was born about 580 years before Christ; and employed by Philip of Macedon to instruct his son Alexander in the art of rhetoric. Some have ascribed the treatise on rhetoric, which bears Aristotle's name, to Anaximenes. This learned man, with many others, accompanied Alexander in his expedition against the Persians; and he contrived by a smart and seasonable retort, mentioned under **ALEXANDER**, to preserve the city of Lampascus. On another occasion having conceived a grudge against the historian Theopompus, he revenged himself by writing a severe satire against the Spartans and Thebans, exactly in the style of Theopompus, and addressing it, under his name, to the Athenians. By this deception, though not of the most honourable kind, he gratified his resentment, and exposed his adversary to reproach and ill-will throughout almost all Greece.

Greece. Anaximenes wrote a history of the life and actions of Philip, and another of those of Alexander; and he also wrote 12 books on the early history of Greece, beginning with the theogony, or fabulous history, and ending with the battle of Mantinea, which was fatal to Epaminondas. But none of these works are extant. Suidas. Paulan. Eliac. lib. ii. c. 19. p. 495. ed. Kuhnii. Gen. Dict.

ANAZARBUM, in *Ancient Geography*, a city of Asia, in Cilicia Proper, or Cilicia Campestris. It was situated on the river Pyramus, at some distance from the sea. Suidas informs us that it was first called Cyinda, and afterwards Anazarbum, from its founder Anazarbus, who was sent by the emperor Nerva to rebuild it, after it had been quite ruined by an earthquake; but he is certainly mistaken, since Pliny, who died long before the reign of Nerva, calls the inhabitants of this city *Anazarbeni*. The etymology of Stephanus Byz. is therefore more probable, who derives its name from mount Anazarbus, at a small distance from the place where this city stood. The territory adjacent to Anazarbum was very fertile, and produced abundance of grain and fruit. The symbols of this fertility were expressed on the coins of the city; such as the cornu-copia, ears of corn, branches loaded with fruit, &c. This city is distinguished by an æra, marked on its medals, called the æra of Anazarbum. The Abbè Belley, (Mem. de Lit. tom. xxx. p. 714.) proves that this æra ought to commence with the year of Rome 735, 19 years before the Christian æra. By a decree of the senate it had permission to assume the name of Cæsarea, in acknowledgment of the privileges conferred upon it by Augustus. It also took the name of Justinopolis and Justinianopolis, in honour of the emperors Justin and Justinian. When this city was nearly demolished by an earthquake, it was repaired by Nerva; and after a similar catastrophe, it was raised from its ruins under the reign of Justin or Justinian. The citizens of Anazarbum were divided into three classes or orders, comprehending the people, the council, and the senate. At the commencement of the fifth century Cilicia was divided into two provinces; and Anazarbum was the metropolis of the second province. This division contained nine cities, and Anazarbum exercised the jurisdiction of a metropolis, and its bishops had the rank and jurisdiction of metropolitans. It possessed the distinguishing privilege of autonomia, *i. e.* of choosing its own magistrates, and of being governed by its own laws. When the provinces of Asia were divided under the emperors of Constantinople, after the reign of Heraclius, into *themæ*, or military departments, Anazarbum was comprised with Cilicia in the theme of Seleucia. When this city embraced the Christian religion, it became dependant on the patriarch of Antioch; and it is said to be still the see of a Jacobite bishop. The Turks call it *Ain-Zerbeh*. This city was the birth place of Dioscorides, and of the poet Oppian.

ANAZEIA, in *Geography*, a town of Asia, in Greater Armenia, near Mount Taurus. It is in the government of Van, not far from a lake which bears this name.

ANAZZO. See GNATIA.

ANBAR, in *Geography*, a town of the province of Chaldæa, or Irac-arabi, on the Euphrates, called also Anchemiah.

ANBERTKEND, in the *Eastern Language*, a celebrated book of the Brachmans, containing the Indian philosophy and religion. The word in its literal sense denotes the cistern, wherein is the water of life. The *ambertkend* is divided into fifty beths, or discourses, each of which consists of ten chapters. It has been translated from the original Indian into Arabic, under the title of *Morat al Maani*, q. d. "the marrow of intelligence."

ANBORD, in *Geography*, a town of Persia, in the province of Khorasan, 50 leagues north-east of Meshid.

ANBURY, in *Agriculture*, is a disease in the roots of

turnips, which is described by Mr. Marshall, in his *Rural Economy of Norfolk*, in the following manner: "It is a large excrescence, which forms itself below the apple. It grows to the size of both the hands, and, as soon as the hard weather sets in, or it is by its own nature brought to maturity, becomes putrid, and smells very offensively. At present (says he) the state of three specimens which have been taken up and examined attentively, is this: the apples of the turnips are just forming (about the size of walnuts in the husk), while the anberries are already as big as the egg of a goose. They are irregular and uncouth in their form, with inferior excrescences (resembling the races of ginger) hanging to them. On cutting them, their general appearance is that of a hard turnip; but on examining them through a magnifier, there are veins, or string-like vessels, dispersed among the pulp. The smell and taste somewhat resemble those of turnips, but without their mildness, having an austere and somewhat disagreeable flavour, resembling that of an old string turnip. The tops of those which are much affected turn yellow, and flag with the heat of the sun: so that in the day time they are obviously distinguished from those which are healthy. It seems to be an idea among farmers, that the cause of the anbury is the soil's being tired of turnips; owing to their having been too often sown on the same land. This, however (he contends), is positively erroneous; for the piece from which these specimens were drawn was an old orchard, and never before bore turnips in the memory of man."

The nature and cause of this *vegetable disease* do not appear to be yet fully explained; but it is probable that drought has much effect in producing it, as it is found to be the most prevalent in such seasons. The author just mentioned, however, seems to suspect that it may be induced by some sort of grub or other, wounding the vessels of the tap-root, and thus diverting the course of the sap-juice, by which means excrescences of this kind are formed, instead of the apple of the turnip. Whatever may be the causes of the disease, experience has shewn, that the most effectual remedy is that of frequent hoeing, or stirring the ground about the plants, in order to admit air and moisture more freely.

ANCA, in *Middle Age Writers*, denotes the thigh, or hind-leg.

In which sense the word is also written ANCUS.

ANCEUS, in *Entomology*, a species of PAPILIO found in India. The wings are entire, black, with a blue bar on the anterior pair, and a ferruginous one on the posterior pair. Under side green. Gmelin. This is the PAPILIO OBRINUS of Fabricius. Spec. Inf.

ANCALE, or ACALE, in *Ancient Geography*, a town of Arabia Felix, according to Ptolemy.

ANCALITES, inhabitants of Britain, were seated near the Atrebatii, and were probably a clan of that nation. Mr. Baxter (Gloss. p. 14.) thinks they were the ceangi, or herdsman and shepherds of the Atrebatii, and possessed those parts of Oxfordshire and Buckinghamshire which were most proper for pasturage. After they were subdued by the Romans, the government of them, with that of some of their neighbouring states, was bestowed upon Cogidunus, the British king of the Dobuni, as a reward for his early submission, and great fidelity to the Romans.

ANCAMARES, or ANTAMARES, in *Geography*, a people of South America, who live near the banks of the river Madera, which discharges itself into the river of the Amazons.

ANCANICUM, in *Ancient Geography*, a district of Spain in Bætica.

ANCAON, *Serra de*, in *Geography*, a chain of mountains in Beira, a province of Portugal, which joins to another called Serra d'Estrella.

ANCARA, in *Ancient Geography*, a town of Italy, mentioned by Stephanus Byz.

ANCARANO, PETER DE, in *Biography*, a celebrated civilian of Bologna, flourished in the 15th century. He rivalled Baldus, his master, in the knowledge of the civil and canon law. In 1409 he defended the council of Pisa against the ambassadors of Robert duke of Bavaria, and evinced its right to proceed against Gregory XII. and Benedict XIII. in order to terminate the schism. He died at Bologna in 1417, and left behind him in Latin, "Commentaries on the Decretals and Clementines," printed at Lyons, Venice, Bologna, &c. On his tomb was inscribed an epitaph, in which he is called "the mirror of the canon law, and the anchor of the civil."

ANCARANO, in *Geography*, a town of Italy, in the marquisate of Ancona, situate on the Tronto, six miles east of Ascoli. N. lat. 42° 48'. E. long. 14° 54'.

ANCASTER, a village of England, in the county of Lincoln, was formerly a Roman station, of which many vestiges are now visible: 116 miles from London.

ANCENIS, a town of France, and principal place of a district, in the department of the Lower Loire. It is situated on the Loire, in a very agreeable and fertile country. It is the ancient *Ancanifium*, the capital of the Anmites, a people who lived about the mouth of the Loire. The place contains 2,923, and the canton 11,109 inhabitants. The territory includes 200 kilometres and 7 communes. N. lat. 47° 22'. W. long. 1° 15'.

ANCEPS, in *Botany*, denotes two-edged.

ANCEPS, in *Conchology*, a species of PATELLA. It is solid, glossy, and rather pointed, outside pale chestnut, within white tinged with flesh-colour. Gmelin.

ANCERVILLE, in *Geography*, a town of France, in the department of the Meuse, and chief place of a canton in the district of Bar-le-duc; one league east of St. Dizier, and three leagues south-west of Bar-le-duc. The place contains 2,200, and the canton 9,699 inhabitants. The territory comprehends 220 kilometres and 18 communes.

ANCERVILLE is also a town of France, in the department of the Moselle, and chief place of a canton, in the district of Morhange, three leagues and a half west-north-west of Morhange, and three east-south-east of Metz.

ANCESTORS, *progenitors*, are those from whom a person is descended, exclusively of his immediate parents.

The word is derived from the Latin *anceffor*, written, by contraction, for *antecessor*, q. d. *goer before*.

Most nations have paid honour to their ancestors. It was properly the departed souls of their fore-fathers that the Romans worshipped under the denomination of *lares*, *lemures*, and household gods. Hence the ancient tombs were a kind of temples, or rather altars, wherein oblations were made by the kindred of the deceased. The Russians have still their anniversary feasts in memory of their ancestors, which they call *roditoli sabot*, q. d. *kingsfolk's sabbath*, wherein they make formal visits to the dead in their graves, and carry them provisions, eatables, and presents of divers other kinds. They interrogate them with loud lamentable cries, What they are doing? how they spend their time? what it is they want? and the like.

The Quoijas, a people of Africa, offer sacrifices of rice and wine to their ancestors, before they ever undertake any considerable action. The anniversaries of their deaths are always kept by their families with great solemnity. The king invokes the soul of his father and mother to make trade flourish, and the chase succeed.

The Chinese seem to have distinguished themselves above all other nations in the veneration they bear their ancestors. By the laws of Confucius, part of the duty which children

owe their parents consists in worshipping them when dead. The service, which makes a considerable part of the national religion of the Chinese, is said to have been instituted by the emperor Kun, the fifth in order from the foundation of that ancient empire.

The Chinese have both a solemn and ordinary worship which they pay their ancestors. The former is held regularly twice a year, viz. in Spring and Autumn, with much pomp. A person who was present at it gives the following account of the ceremonies on that occasion.

The sacrifices were made in a chapel well adorned, where there were six altars furnished with censers, tapers, and flowers. There were three ministers, and behind them two young acolytes; he that officiated was an aged man, and a new Christian. The three former went with a profound silence, and frequent genuflexions towards the five altars, pouring out wine; afterwards they drew near to the sixth, and when they came to the foot of the altar, half-bowed down, they said their prayers with a low voice. That being finished, the three ministers went to the altar, the priest took up a vessel full of wine, and drank; then he lifted up the head of a deer or goat; after which taking fire from the altar, they lighted a bit of paper; and the minister of the ceremonies turning towards the people, said, with a high voice, that he gave them thanks in the name of their ancestors for having so well honoured them; and in recompence he promised them, on their part, a plentiful harvest, a fruitful issue, good health and long life, and all those advantages that are most pleasing to men.

All the Chinese, Pagans as well as Christians, give their ancestors another simpler and more private worship. To this end they have in their houses a niche or hollow place, where they put the names of their deceased fathers, and make prayers and offerings of perfumes and spices to them at certain times, with bowing, &c. They do the like at their tombs.

It has been a question warmly agitated of late years, whether the worship which the Chinese pay their ancestors be religious, or only of a civil nature. The Jesuits, who not only allow their neophytes, or new converts, to join in it, but even assist in it themselves, are necessitated to maintain the latter, to screen themselves from the charge of idolatry; the Dominicans and other missionaries maintain the former, and prohibit the service as absolutely unlawful.

The Jesuits argue, that with relation to the first institution, those honours might be given to our ancestors, since at first they appear to have been only civil; even though they should since, through the superstitious disposition of the people, have degenerated into idolatry. But it is answered, that, by this argument, the most gross worship of idols might be authorized, because all idolatry appears at first only to have been civil worship, as is maintained in the book of Wisdom, chap. xiv. ver. 15.

The Jews settled in China are said to worship their ancestors like the heathens, and with the same ceremonies, except that they offer not swine's flesh. Near their synagogue they have a hall, or court of ancestors, wherein are niches for Abraham, Isaac, &c. The Jesuits also conformed, and were permitted by their general to conform to this, and many other superstitious customs of the Chinese. See the proof of this in Paschal's Provincial Letters, *passim*.

There is one peculiarity of another kind, wherein the Chinese shew their regard for their ancestors; in proportion as any of their descendants are preferred to a higher degree or dignity, their dead ancestors are at the same time preferred and ennobled with them. The kings Ven, Van, Veu, Van, Cheu, and Cum, who were descended from vassal kings, when they mounted the imperial throne, raised their ancestors from the

vassal or depending state wherein these had lived, to the dignity of emperors; so that the same honours were for the future rendered them as if they had been emperors of China. The same example was followed by the subsequent kings, and now obtains among the *grandees* and *literati*: all now worship their ancestors, according to the rank which they themselves hold in the world. If the son be a mandarin, and the father only a doctor, the latter is buried as a doctor, but sacrificed to as a mandarin. The like holds in degradations, where the condition of the fathers is that of their sons.

The law distinguishes between *ancestor* and *predecessor*: the former being applied to a natural person, as such an one, and his *ancestor*; and the latter to a body politic or corporate, as a bishop, and his *predecessors*.

ANCESTOR, *disability by the act of*. See DISABILITY.

ANCESTREL, in *Law*, something relating to a man's ancestors.—Thus,

ANCESTREL, *homage*, signifies homage that has been done or performed by one's ancestors.

ANCESTREL, *action*. See ACTION.

ANCHA, in *Geography*, a town of Asia, in Mingrelia, 120 miles north-east of Trebisond.

ANCHA is also a town of Asia, in the country of Georgia, and province of Satabago, 68 miles south west of Akelzika.

ANCHEDIA, an island near the western coast of India.

ANCHESMUS, in *Ancient Geography*, *Aghios Georgios*, or *Mount St. Georges*, a mountain of Attica, upon which was placed a statue of Jupiter Anchesmus. Pausanias, in *Attic. lib. i. c. 32. p. 78*.

ANCHIALE, a town of Asia, in Cilicia Campestris, situated near the sea, to the south-west of Tarsus. Some authors say, that it was built by Sardanapalus. Athenodorus pretends, that it was founded by Anchiale, the daughter of Japhet.

ANCHIALE was also a town of Illyria, built by the Parians.

ANCHIALEUS, a river of Cilicia, which watered the town of Anchiale.

ANCHIALOS, or ANCHIALUS, called by Pliny *Anchialum*, a town of Europe, in Thrace, situate upon the Euxine sea, south-west of Mesembria. It was an episcopal see, dependent upon the patriarchate of Constantinople.

ANCHIALOS was also a place in Greece, towards the Pelagic gulf, according to the Argonautics of Orpheus.

ANCHIALOS was also a town of Epirus, the inhabitants of which pretended that Anchises died in their town. Others refer it to Illyria.

ANCHILOPS, or ANCHYLOPS, in *Surgery*, from *ανχι*, near, and *ωψ*, the eye; a tumor in the lacrymal sac, near the inner angle of the eye, forming an incipient FISTULA LACRYMALIS. See that article, and ÆGILOPS. These swellings are of different kinds. The most common kind is a tumor, situated in the cellular texture immediately surrounding the lacrymal sac, and combined with redness, heat, and pain, which rises the external skin, and bears a considerable resemblance to an inflamed fistula lacrymalis. This resemblance frequently becomes more marked by the cutaneous inflammation acting upon the lacrymal duct in such a manner, as to obstruct the passage of the tears through it; the consequence of which is a flow of tears from the eye, and a swelling of the lacrymal sac.

The inflammatory tumor soon goes on to suppuration; an event which, provided we can do it early enough, we should endeavour to prevent by the external application of a saturnine wash, and other remedies that promote resolution

of the inflammation, as well as by cooling evacuants. When suppuration has already taken place, and produced an abscess at the inner canthus of the eye, we are still more liable to be led into error, as we may easily mistake the fluctuation of the pus for the motion of some fluid contained in the lacrymal sac. This error, which might possibly induce us to make an incision into the sound lacrymal sac, may, however, be easily avoided, by recollecting that the lacrymal passage was not previously diseased, that the tumor was at first hard, and that the lacrymation and fluctuation only supervened afterwards. Moreover, in this disease, the matter cannot be squeezed with the finger out of the tumor, through the puncta lacrymalia, or the nose, (as it may when the lacrymal sac is filled with matter) unless the matter has already corroded the lacrymal duct, so as to produce a communication between it and the abscess. We may also distinctly observe, that both the inflamed and the subsequent suppurating tumor lies flat under the skin, and that at first the collection of matter is surrounded with inflammatory hardness; whilst, on the contrary, the lacrymal sac, when filled with matter, is soft, and affords the sense of fluctuation throughout its whole extent, from the very commencement of the disorder. This complaint, however, may at times produce a real inflammation of the lacrymal ducts, and consequently also a true fistula lacrymalis.

When, in an inflammatory tumor of the angle of the eye, symptoms of incipient suppuration make their appearance, the surgeon may apply, during the night, the Empl. Litharg. vel diachyl. comp. and, in the day time, emollient and somewhat stimulant poultices, in order to invite the matter towards the surface. These must be applied warm and frequently; in doing which, care should be taken that they do not come into contact with the eye, which, on that account, should previously be covered with compresses dipped in rose-water. As soon as there is the least reason to suppose that pus has been formed, the tumor must be cut open; for, in these cases, it is of great consequence that the pus should be discharged as soon as possible, as otherwise it easily makes its way downwards, by which not only the lacrymal sac may be laid bare and corroded, but also the neighbouring bones, &c.

The incision is made with a lancet, but as remote as possible from the inner canthus of the eye, and proportionate to the magnitude of the tumor. The lancet must not be introduced in a perpendicular direction, but obliquely, for fear of injuring the lacrymal sac. When the matter and blood have been discharged, we should introduce some loose lint into the orifice, and cover it with a simple plaster. Over this we may lay a compress, dipped in rose-water. The ulcer is afterwards to be cleaned with mild digestive ointment, and suffered to heal up.

When the surgeon is not called in till the abscess has already been completely formed, he should immediately lay it open, and examine the state of the bone. When the bone is bare, some tincture of myrrh or aloes may be used, and dry dressings applied, in order that we may not increase the ulceration, which is generally already considerable. When the exfoliation of the bone, and the cleansing of the ulcer have been completed, the healing of the sore should be promoted by the proper applications.

The anchilops may at times consist in a hard tubercle or knot, from which a cancer may be produced. This disease is to be treated like other ferruginous tumors. See SCIRRHUS.

Sometimes the tumor is of the encysted kind, most generally of the species of ATHEROMA. In this disease no pain is felt, the tumor is of an uniform colour, circumscribed, smooth, and moveable. Such a tumor also, like every other

anchilops, may by its mere pressure impede the functions of the lacrymal ducts, and occasion an *EPIPHORA*, or watery eye. It may generally be softened by means of Empl. diach. comp. and brought to suppuration; otherwise it is to be dissected out with the knife.

This tumor may also arise from an accumulation of serous fluid between the lacrymal sac and the external skin. Such a serous, uninfamed tumor seldom opens itself spontaneously outwards; it more commonly happens, that it is connected with one of the two *PUNCTA LACRYMALIA*, or lacrymal ducts, generally the lower; in which case the fluid may indeed be pressed out through one of the puncta lacrymalia; but it may, nevertheless, be easily distinguished from a swelling of the lacrymal sac, by the circumstance that the latter generally yields to the slightest pressure, whilst the former cannot be made to collapse, unless by pressing it from below upwards, and its tension cannot be diminished except in a gradual manner. When the serous anchilops is not yet in communication with the lacrymal ducts, (as generally is the case,) it may readily be distinguished from the distension of the lacrymal sac, by the single circumstance of its not being by any means practicable to squeeze out the fluid.

There are certain circumstances under which the lacrymal tumor does not yield to pressure; namely, when the lacrymal ducts are contracted or inflamed, so as to prevent the recession of the fluid contained in the lacrymal sac. But when these passages are in a sound condition, and when the tumor of the larger canthus does not yield to pressure, there can be no doubt that the disease is situated without the lacrymal sac.

When the resolution of such a serous tumor, which we may at first attempt to bring about, does not soon take place, the safest and most expeditious method is to open it, and discharge the matter by means of a lancet, which must here also be introduced in an oblique direction. The wound should be filled up with dry lint, which, in the subsequent dressings, ought to be dipped in some detergent and drying solution, such, for example, as a very weak solution of *lapis infernalis*, and secured by means of a plaster.

Finally, in the venereal disease there is sometimes produced, in the region of the larger canthus of the eye, an exostosis from the *os unguis coronale*, or maxillare; by which a tumor is formed in this part that may easily be distinguished from other kinds of anchilops, by its being hard, immoveable, and generally of an uneven surface. It occasions a compression of the lacrymal passages, which gives rise to a constant *EPIPHORA*. We may, in such cases, employ internally mercurial remedies, and a decoction of *Cost. Mezerei*, and, at the same time, rub mercurial ointment upon the tumor, apply mercurial plasters, &c. by which a speedy cure is frequently produced: but, for the treatment of venereal disorders, see *SYPHILIS* and *LUES VENEREA*.

ANCHIROMACUS, in *Middle Age Writers*, denotes a kind of vessel, which, on account of its nimble sailing, was used for the conveyance of anchors, and other necessary utensils of ships.

In this sense, the word is also written *ancyromagus*, *anchiromachus*, *ansyromacus*, *angromagus*, *anquiromagus*, and *anquiromagus*.

ANCHISÆ PORTUS, a name given by the ancient Romans to the port of Onchestus, in Epirus, to the east of Corcyra.

ANCHISES, in *Entomology*, a species of *PAPILIO* (Eq. Tr.) that inhabits America; it is black both above and beneath, with seven ovate scarlet spots on each of the posterior wings. *Linnæus*. The larva from which this butterfly is

produced, is said to be gregarious, spinous, brown with white rings, and yellow tentacula; the pupa brown, with four teeth at the anterior part. Vide. *Fab. Gmel. Metian*, &c.

ANCHISES, in *Fabulous History*, a Trojan prince, descended from Dardanus, and the son of Capys. Venus appeared to him in the form of a beautiful nymph, and made love to him. Their intercourse produced *Æneas*, the hero of Virgil's *Æneid*. It is said that he lived to the age of 80, and was buried on Mount Ida, where shepherd paid honours to his monument. According to Virgil, *Æneas* took his father on his shoulders, and made his escape with him the night on which Troy was taken. See *ÆNEAS*. Some say, that Anchises lived till his son's arrival in Italy, that land of promise, which the destinies had ordered him to go in search of, through a thousand dangers. Cato, Dionysius Halicarnassensis, and Strabo, adopt this opinion. Gen. Dict.

ANCHISIUS, in *Ancient Geography*, a mountain of Peloponnesus, in Arcadia, to the north of Mantinea.

ANCHITÆ, a people placed by Ptolemy in Arabia Felix, near mount Climax.

ANCHOA, a town of Greece, in Bœotia, placed by Pliny at the mouth of the Cephissus. Strabo mentions also a lake of the same name.

ANCHOR, *ANCHORA*, from the Latin *ancora*, or *anchora*, of the Greek *ἄγκυρα*, which comes from *ἄγκυλος*, *incurved*, *crooked*, a large, strong, and heavy piece of iron, composed of a long shank, having at one end a ring to which the cable is fastened, and at the other two arms or flukes, with barbs or edges on each side, and used for fixing and retaining a vessel in a harbour, road, or river.

The anchor is an instrument of very ancient use. Pliny (lib. viii. c. ult.) ascribes the invention of it to the Tuscans; and Pausanias (Attic, lib. i. c. 4. p. 12.) refers it to Midas, the son of Gordius, who built the city Ancyra. The most ancient anchors were of stone, and sometimes of wood, to which a quantity of lead was attached; in some places they used baskets full of stones, and sacks filled with sand. These were suspended by cords, and their weight regulated the course of the ship. Afterwards anchors were constructed of iron, and furnished with teeth or flukes, which fastening to the bottom of the sea, kept the ship immoveable; hence *οὐράς*, teeth, are used for anchors. The first anchors had only a tooth or fluke, on one side; and on this account they were denominated *ἑίροσσομοί*; the contrivance was completed, according to Pliny, (*ubi supra*.) by Eupalamus, who made them fluked both ways, or according to Strabo (lib. vii. ex Ephor, tom. p. 464.) the second tooth or fluke was added by Anacharsis, the Scythian. The anchors with two teeth were called *αμφιβόλοί*, or *αμφισομοί*. Every ship had several anchors, the largest of which was called *μεγα*, sacred, and was never used but in extreme danger; whence the phrase "sacram anchoram solvere," is proverbially applied to such as are reduced to their last refuge.

All anchors have now two arms; not but they might still be used with only one arm, which structure would have this advantage, that they would be lighter, and yet in fine weather would hold equally firm with the double kind. The reason of having two arms is, that the anchor may always take, in order to which it is necessary that it be very heavy; besides, that anchors with a single arm would require more preparation for service.

Travellers tell us of people who make use of wooden anchors in their navigation. The inhabitants of the island of Ceylon, in lieu of anchors, use large round stones, and

A N C H O R.

in other places, their anchors are a kind of wooden machines, loaded with stones. Sometimes bags of sand have been made use of, but these chiefly obtained in rocky places, where anchors would not take hold. In England, France, and Holland, anchors are made of forged iron; but in Spain, they are sometimes made of copper, and likewise in several parts of the South sea.

The anchors now made are so contrived as to sink into the ground as soon as they reach it, and to hold a great strain before they can be loosened or dislodged from their station. The parts of which an anchor is composed are the ring, into which the cable is fastened, the beam, or shank, which is the longest part of the anchor, the two arms, at the end of which are the two flukes or flukes, by some called the palms, which with their barbs fasten into the ground, and the stock, which is a long piece of wood, fastened across the beam, near the ring, and serving to guide the flukes in a direction perpendicular to the surface of the ground; so that one of them sinks into it by its own weight, as soon as it falls, and is still preserved steadily in that position by the stock, which, together with the shank, lies flat on the bottom. In this situation it must necessarily sustain a great effort before it can be dragged through the earth horizontally. This, indeed, can only be effected by the wind or tide, or by both of them; the effect of which is sometimes increased by the turbulency of the sea, and acts upon the ship so as to stretch the cable to its utmost tension, and may thus dislodge the anchor from its bed, especially if the ground be soft, and oozy, or rocky. When the anchor is thus displaced, it is said, in the sea-phrases, "to come home."

The several parts of the anchor, above enumerated, bear the following proportions. The length of the arm, from the inside of the throat to the bill, is the distance marked on the shank for the trend, taken from the inside of the throat; and three times that is the length of the shank from the tip of the crown; and the shank, from the tip of the crown to the centre of the ring, is the length of the iron stock; when made, the two arms, from the inside of the throat to the extremity of the bill, should form an arc of a circle, containing 120 degrees. See *Plate XI. Ships.*

Of anchors there are the sheet, best bower, small bower, and spare anchor. These do not vary in form or weight from each other, in the navy. Stream and kedge anchors are smaller, and grappels are only for boats. Ships of 110, 100, 98, and 90 guns, have seven anchors; from 80 to 20 guns inclusive, six anchors; ships of 300 tons, and sloops have five; and brigs and cutters three anchors.

ANCHORS, method of making. The goodness of the anchor is a point of great importance; the safety and preservation of the vessel depending principally upon it. The shank, arms, and flukes, are first forged separately; then the hole is made at one end of the shank for the ring, which being also previously forged, is put into the hole of the shank, and the two ends shut together. After which the arms are shut to the shank, one after the other, and the anchor is finished.

The shank is made of many long bars of the best tough iron, well wrought together; and great care should be taken, that the iron be neither too soft nor too brittle; the latter rendering it liable to break, and the former to straiten. The number of bars sufficient to make the shank of the intended size must be regulated by experience. Several parts of the anchor are governed by the size of the trend, which is marked on the shank at the same distance from the inside of the throat as the arm measures from the inside of the

throat to the extremity of the bill. The shank is rounded to the square of the upper part, and is there called the small round, being the smallest part. The two sides in the direction of the arms are flatted surfaces, about an inch less than the trend, in large anchors, and something less in smaller ones. The squared part is of the same size as at the trend each way, and hanches into the small round, one-sixth of the length of the shank. The hole, or eye, for the ring, is punched through the square part, or the flatted side, once and a half the thickness of the ring, from the upper extremity of the shank, which has its corners flatted or diamonded, on the same sides nearly, in the middle. Between the hole for the ring and lower part of the square are two small prominences, raised across from the solid, called nuts, for securing the stock in its place. At the lower part of the shank is left a scarf, or flatted surface, with a shoulder on each side, for shutting on the arms.

In making every part of an anchor the nicest attention should be observed, as to its being smooth, fair, and even; and that the edges and angles are preserved straight in their direction, as well-made anchors should possess beauty as well as strength. The ring, being previously forged, is put through the fore-mentioned hole in the shank, and the two ends are well shut together. The arms are made of shorter bars than the shank, but as good in quality, and as well put together; they are rounded and flatted on the different sides, to resemble the shank, and are of the same size as the shank, at the throat and small round. The rounding part is continued to the palm, which is nearly in the middle of the arm; from thence it is made with a square tapering to the bill on the flatted side; and, on the inner rounded side, is made a square seat for shutting on the palm, that the palm, when shut on, should project its thickness at the base or inner part, the outer part making a straight surface with the peak or bill. The back or outer side of the arm is made straight from the rounded part, or hanch, to the snape, and there kept to half the substance of the inner part. The snape resembles the bill of a duck, and is one-third the breadth of the palm in length. The thickness of the ring is to be half the diameter of the small round. The diameter of the ring, including the thickness, reaches from the hole in the upper part of the shank to the hanch of the small round. The inner part of the arm is mostly made straight, from the bill to the throat; and it is thought stronger for having a small angle in its length, inclining to the shank. Shanks taper in their length, one and one-half inch in small anchors to three inches in large, keeping their proper size at the trend; and three-fourths of an inch to two inches in the flatted way. The arm in its length inclines to the shank, and forms a small angle, the touch or point thereof being in the middle. The throat-end of the arm is scarfed, or flatted, to answer the scarf in the shank, to which the two arms are united (after the palms are shut on) in the firmest manner possible; and it is elevated above the horizontal plane, or inclined to the shank, that each arm may spread at the peak or bill. The length of the arm, from the inside of the throat to the extremity of its bill, is then taken, and that length from the inside of the throat is set upon the shank, and called the trend: from the trend to the bill is formed an angle of about 60 degrees. The palms, or flukes, are two thick plates of iron, made of various pieces, well wrought together, in the form of an isosceles triangle; one and one-half inch to one and one-fourth inch longer than the breadth of the base, and curve about as much in their sides. The base or lower part, is to be straight; the inner flat surface curves a little in the breadth, but is straight lengthways;

lengthways; the palms, being finished thus far, are lally shut firmly into the inner side of the arm, in the seat before mentioned, the base inclining inwards.

The stock is composed of two long beams of oak, strongly bolted and tree-nailed together, and secured with four strong iron hoops, two on each side of the middle, and one near each end. It is fixed on the upper end of the shank, transversely with the flukes or palms; and the nuts are let into the middle of the stock. The length of the stock is the length of the shank and half the diameter of the ring; the depth and thickness in the middle are as many inches as the stock is feet in length. The ends are to be kept square, half the depth or thickness in the middle. The upper side next the ring is always kept straight, as is the lower side half the depth on each side the middle; and thence it tapers to each end in the above proportion. It is necessary to leave an opening in the middle of one and one-half inch, between the two pieces, that the hoops may be driven nearer the middle, in case the stock should shrink. The making of anchors is a very laborious business, and has been much facilitated by the invention of two machines, called the **HERCULES** and the **MONKEY**.

Proof is made of anchors, by raising them to a great height, and then letting them fall again on a kind of iron block placed across for the purpose. To try whether the flukes will turn to the bottom, and take hold of the ground, they place the anchor on an even surface, with the end of one of the flukes, and one of the ends of the stock resting on the surface; in case the anchor turns, and the point of the fluke rises upwards, the anchor is good.

For the proportions of anchors according to Manwaring, the shank is to be thrice the length of one of the flukes, and half the length of the beam. According to Aubin, the length of the anchor is to be four-tenths of the greatest breadth of the ship; so that the shank, *e. gr.* of an anchor in a vessel thirty feet wide, is to be twelve feet long. When the shank is, for instance, eight feet long, the two arms are to be seven feet long, measuring them according to their curvity. As to the degree of curvity given the arms, there is no rule for it; the workmen are here left to their own discretion.

Aubin, in his Marine Dictionary, gives a table from a Flemish writer, wherein the lengths of the shanks of anchors for vessels of all widths, is computed, as well as the weights of the anchors, from a vessel eight feet wide within, which requires an anchor three and one-half feet long, weighing thirty-three pounds, to a vessel forty-five feet wide, which demands an anchor eighteen feet long, and weighing 5832 pounds. He likewise observes, that the anchor of a large heavy vessel is smaller, in proportion, than that of a lesser and lighter one. The reason he gives is, that though the sea employs an equal force against a small vessel as against a great one, supposing the extent of wood upon which the water acts to be equal in both, yet the little vessel, by reason of its superior lightness, does not make so much resistance as the greater; the defect whereof must be supplied by the weight of the anchor.

From these and other hydrostatic principles, the following table has been formed; wherein is shewn, by means of the ship's breadth within, how many feet the beam or shank ought to be long, giving it $\frac{1}{4}$ or $\frac{2}{5}$ of the ship's breadth within; by which proportion may be regulated the length of the other parts of the anchor. In this table is represented likewise the weight an anchor ought to be for a ship from eight feet broad to 45, increasing by one foot's breadth; supposing that all anchors are similar, or that their weights are as the cubes of the lengths of the shanks.

Breadth of the Vessel	Feet	Feet.	Pounds.
8	3	$3\frac{1}{2}$	33
9	3	$3\frac{1}{2}$	47
10	4	4	64
11	4	$4\frac{1}{2}$	84
12	4	$4\frac{1}{2}$	110
13	5	$5\frac{1}{2}$	149
14	5	$5\frac{1}{2}$	175
15	6	6	216
16	6	$6\frac{1}{2}$	262
17	6	$6\frac{1}{2}$	314
18	7	$7\frac{1}{2}$	373
19	7	$7\frac{1}{2}$	439
20	8	8	512
21	8	$8\frac{1}{2}$	592
22	8	$8\frac{1}{2}$	681
23	9	$9\frac{1}{2}$	778
24	9	$9\frac{1}{2}$	884
25	10	10	1000
26	10	$10\frac{1}{2}$	1124
27	10	$10\frac{1}{2}$	1259
28	11	$11\frac{1}{2}$	1405
29	11	$11\frac{1}{2}$	1562
30	12	12	1728
31	12	$12\frac{1}{2}$	1906
32	12	$12\frac{1}{2}$	2097
33	13	$13\frac{1}{2}$	2300
34	13	$13\frac{1}{2}$	2515
35	14	14	2742
36	14	$14\frac{1}{2}$	2986
37	14	$14\frac{1}{2}$	3242
38	15	$15\frac{1}{2}$	3512
39	15	$15\frac{1}{2}$	3796
40	16	16	4096
41	16	$16\frac{1}{2}$	4426
42	16	$16\frac{1}{2}$	4742
43	17	$17\frac{1}{2}$	5088
44	17	$17\frac{1}{2}$	5451
45	18	18	5832

M. Bouguer directs to take the length of the shank in inches, and to divide the cube of it by 1160 for the weight. The reason is obvious; because the quotient of the cube of 201 inches, which is the length of an anchor weighing 7000lb. divided by the weight is 1160, and therefore by the rule of three, this will be a common divisor for the cube of any length, and a single operation will suffice. The same author, in his *Traite de Navire*, gives the following dimensions of the several parts of an anchor. The two arms generally form the arch of a circle, whose centre is three eighths of the shank from the vertex, or point where it is fixed, to the shank; and each arm is equal to the same length or the radius; so that the two arms together make an arch of 120 degrees: the flukes are half the length of the arms, and their breadths two-fifths of the said length. With respect to the thickness, the circumference at the throat, or vertex of the shank, is generally made about the fifth part of its length, and the small end two thirds of the throat, the small end of the arms of the flukes, three fourths of the circumference of the shank at the throat. These dimensions should be bigger, when the iron is of a bad quality, especially if cast iron is used instead of forged iron.

ANCHOR.

THE MOST APPROVED DIMENSIONS AND WEIGHT OF ANCHORS.

Weight		Length of the Shank.		Length of the Arms.		Breadth of the Palms.		Thickness of the Palms.		Size of the Trend.		Size of the Small Round.		Outer Diamet. of the Ring.		Thickness of the Ring.	
Ct.		Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
1	5	8	1	10	0	9	0	0	0	0	0	2	2	2	2	0	0
2	6	6	2	2	0	11	0	0	0	0	0	2	2	2	2	0	0
3	7	0	2	4	1	0	0	0	0	0	0	2	2	2	2	0	0
4	7	6	2	6	1	1	0	0	0	0	0	3	3	1	1	0	0
5	8	0	2	8	1	2	0	1	0	0	0	3	3	1	1	2	0
6	8	6	2	10	1	3	0	1	0	0	0	3	3	1	1	3	0
7	9	0	3	0	1	4	0	1	1	0	0	4	4	1	1	4	0
8	9	6	3	2	1	5	0	1	0	0	0	4	4	1	1	5	0
9	10	0	3	4	1	6	0	1	0	0	0	4	4	1	1	6	0
10	10	4	3	5	1	7	0	1	0	0	0	4	4	1	1	7	0
11	10	8	3	7	1	8	0	1	1	0	0	4	4	1	1	8	0
12	11	0	3	8	1	9	0	1	1	0	0	4	4	1	1	9	0
13	11	4	3	10	1	10	0	1	1	0	0	4	4	1	1	10	0
14	11	6	3	11	1	11	0	1	1	0	0	4	4	1	1	11	0
15	12	0	4	0	1	9	0	1	1	0	0	5	5	1	1	9	0
16	12	3	4	1	1	9	0	1	1	0	0	5	5	1	1	9	0
17	12	6	4	2	1	9	0	1	1	0	0	5	5	1	1	9	0
18	12	8	4	3	1	9	0	1	1	0	0	5	5	1	1	9	0
19	12	10	4	4	1	9	0	1	1	0	0	5	5	1	1	9	0
20	13	0	4	4	1	9	0	1	1	0	0	5	5	1	1	9	0
21	13	2	4	5	1	9	0	1	1	0	0	5	5	1	1	9	0
22	13	4	4	5	1	10	0	1	1	0	0	5	5	1	1	10	0
23	13	6	4	6	1	10	0	1	1	0	0	5	5	1	1	10	0
24	13	8	4	6	1	10	0	1	1	0	0	5	5	1	1	10	0
25	13	10	4	7	1	11	0	1	1	0	0	5	5	1	1	11	0
26	14	0	4	8	1	11	0	1	1	0	0	6	6	1	1	11	0
27	14	2	4	8	1	11	0	1	1	0	0	6	6	1	1	11	0
28	14	4	4	9	1	11	0	1	1	0	0	6	6	1	1	11	0
29	14	6	4	10	2	0	0	1	1	0	0	6	6	2	2	0	0
30	14	7	4	10	2	0	0	1	1	0	0	6	6	2	2	0	0
31	14	9	4	11	2	1	0	1	1	0	0	6	6	2	2	1	0
32	14	10	4	11	2	1	0	1	1	0	0	6	6	2	2	1	0
33	15	0	5	0	2	1	0	1	1	0	0	7	7	2	2	0	0
34	15	1	5	0	2	2	0	2	0	0	0	7	7	2	2	0	0
35	15	2	5	0	2	2	0	2	0	0	0	7	7	2	2	0	0
36	15	4	5	1	2	2	0	2	0	0	0	7	7	2	2	0	0
37	15	6	5	2	2	2	0	2	0	0	0	7	7	2	2	0	0
38	15	7	5	2	2	3	0	2	0	0	0	7	7	2	2	0	0
39	15	9	5	3	2	3	0	2	0	0	0	7	7	2	2	0	0
40	15	10	5	3	2	4	0	2	0	0	0	7	7	2	2	0	0
41	16	0	5	4	2	4	0	2	0	0	0	7	7	2	2	0	0

ANCHOR.

The Number of Anchors allowed each Ship in the Royal Navy, with their Weight and Value.

S. stands for Stream, K. for Kedge.

No.		110 & 100 GUNS.		VALU.		No.		75 and 90 GUNS.		VALU.		No.		80 and 70 GUNS.		VALU.		No.		Smaller 74 GUNS.		VALU.		No.		64 GUNS.		VALU.		
		Cwt.	Qr.	l.	s.			Cwt.	Qr.	l.	s.			Cwt.	Qr.	l.	s.			Cwt.	Qr.	l.	s.			Cwt.	Qr.	l.	s.	
	5	81	0	1215	0		5	73	0	1003	15		4	71	0	781	0		4	67	0	670	0		4	57	0	502	2	
S.	1	21	0	32	11		S.	1	18	0	27	0	S.	1	17	2	26	0	S.	1	16	0	24	0	S.	1	15	0	22	10
K.	1	10	2	15	15		K.	1	9	0	13	10	K.	1	8	2	12	10	K.	1	8	0	12	0	K.	1	7	2	11	0
No.		60 GUNS.		VALU.		No.		50 GUNS.		VALU.		No.		44 and 38 GUNS.		VALU.		No.		36 GUNS.		VALU.		No.		32 GUNS.		VALU.		
	4	53	0	417	17		4	49	0	382	4		4	40	0	272	0		4	39	0	240	16		4	33	0	210	4	
S.	1	12	0	18	0		S.	1	11	0	16	10	S.	1	10	0	15	0	S.	1	9	0	13	10	S.	1	8	1	12	5
K.	1	6	0	9	0		K.	1	5	2	8	0	K.	1	5	0	7	10	K.	1	4	2	6	10	K.	1	4	0	6	0
No.		28 GUNS.		VALU.		No.		24 and 20 GUNS.		VALU.		No.		14 GUNS 300 TONS.		VALU.		No.		SLOOPS, 200 TONS.		VALU.		No.		BRIGS, 200 TONS.		VALU.		
	4	31	0	198	8		4	29	3	180	11	6		3	20	0	93	0		3	15	0	67	10		3	12	0	54	0
S.	1	8	0	12	0		S.	1	7	2	11	0	S.	1	7	0	10	10	S.	1	6	0	9	0						
K.	1	4	0	6	0		K.	1	3	2	5	0	K.	1	3	2	5	0	K.	1	3	0	4	10						

See Murray's Treatise on Ship-building, &c. Elements and Practice of Rigging and Seamanhip, 4to. 1794, p. 77—82.

The distinctions of anchors are taken from their use, and the proportions they bear in the ship, where they are employed; for that which in one ship would be called but a *kedger*, or *kedje-ANCHOR*, in a lesser would be a *sheet-ANCHOR*.

ANCHOR, kedje, is the smallest, which, by reason of its lightness, is first to stop the ship in *kedging* a river.

This is what the Dutch sailors call *werp-ANCHOR*, the French *ancre a touer*. It ought to weigh 450 pounds.

The *grapnel* is an anchor for a small ship or boat. See *KEDGE* and *GRAPNEL*.

ANCHOR, stream, is a small anchor fastened to a stream-cable, wherewith to ride in rivers, and gentle streams, and to stop a tide withal in fair weather.

ANCHOR, sheet, or *sheet*, is the biggest and strongest, being that which the seamen call their last hope; never to be used but in great extremity.

This is what the Romans call *anchora sacra*; the Dutch *plegt-anker*, and *stop-anker*; the French *maitresse-ancre*, or *grand ancre*.

The other anchors are called by the name of the first, second, and third anchor; by any of which the ship may ride in any seasonable weather, sea-gate, or tide.—These are something bigger one than another, and usually when they fail in any freights, or are near a port, they carry two of these at their bow; in which respect they are also called by the name of first and second bows.

ANCHOR, second, called by the Dutch *borg-anker*, or *daagelyks-anker*, is that ordinarily made use of.

ANCHOR, cross, called by the Dutch *tuy-anker*, or *vertuy-anker*, and by the French *ancre d'affouche*, is a middling anchor thrown across or opposite to another.—This ought to weigh 1500 pounds, or nearly as much as the second anchor.

ANCHOR, floating, is a simple machine, which is made to dive beneath the swell of the sea, and retain the vessel where there may be no other anchorage. It consists of two flat bars of iron, each in length half the breadth of the

midship beam of the vessel for which it is used, and rivetted together in the middle by an iron saucer-headed bolt, clenched at its point, that they may be swung parallel to each other for easy stowage. At each end of the bars is a hole for a rope, or swifter to pass through, which must be hove tight to extend the bars at right angles. To this swifter is marled a double or four-fold canvas cloth, so as to be on that side of the iron bars nearest the vessel when used. In each bar are two holes, at equal distances from the centre, and to these holes the ends of two pieces of rope are fastened; the ropes are seized together in the middle so as to form a crow-foot, having an eye in the centre, which is well sewed with spun-yarn, and to this is bent, when the anchor is used, a cable or hawser, by which it is made to sink and incline in the water. See *Plate XI. Ships*. In the end of one of the bars is fitted an iron ring to which a buoy is made fast, by a rope about 12 fathoms long, to prevent the anchor from sinking to the bottom. When it is thrown over-board, the cable and a rope made fast to the head of a buoy, are carried away sufficiently to ride the vessel. To get it on board, haul upon the buoy-top, which will bring it to the water's surface so as to be easily drawn to the vessel. Have the mizen stay-fail ready to hoist, so as to keep the vessel to the wind, till the anchor is hauled on board.

A *floating* or *swimming anchor* will serve to prevent a ship, in a storm, from driving to leeward in deep water. Dr. Franklin suggests that an anchor, effectual for this purpose, ought to have the following properties. It should have a surface so large as being at the end of a hauler in the water, and placed perpendicularly, should hold so much of it, as to bring the ship's head to the wind, in which situation the wind has least power to drive her. It should be able by its resistance to prevent the ship's receiving way. It should be capable of being situated below the heave of the sea, but not below the undertow. It should not take up too much room in the ship. It should be easily thrown out, and put into its proper situation. And lastly, it should be easy to take in again, and stow away. Many contrivances have been suggested

suggested for this purpose. One for a large ship might have a stem of wood 25 feet long and four inches square, with four boards, 18, 16, 14, and 12 feet in length, and one foot wide, with a hole in the middle of each, about four inches square, so that it might be occasionally slipped upon the stem at right angles with it; and when these boards are fixed at the distance of four feet from each other, the anchor would have the appearance of the old mathematical instrument called the forestaff. This thrown into the sea, and held by a hawser veered out to some length, would bring a vessel up and prevent her driving, and when taken in it might be stowed away by separating the boards from the stem. Such a swimming anchor would have some good effect, but as it lies on the surface of the sea, it is liable to be hoze forward by every wave, and then only give so much leave for the ship to drive. Dr. Franklin has proposed two machines for this purpose, which he conceives, would be more effectual and more manageable. The first of these is to be formed, and used in the water on almost the same principles, with those of a paper kite in the air; only that as the paper kite rises in the air, this is to descend in the water; and its dimensions must be different for ships of different sizes. The other machine is to be made more in the form of an umbrella. See a particular description of both these machines, with figures, in the Transactions of the American Philosophical Society, vol. ii. p. 311—314.

ANCHOR, to back an, in *Sea-language*, is to let go a small anchor a-head of a large one, to which it is fastened, that it may partake of the strain, and serve as a check upon it, should it come home. The backing anchor is carried out in a long boat, to the buoy of that which is already down, whose buoy-rope is cast off and bent to the cable or hawser of the backing anchor; when that is done, the boat is rowed further a-head, till the buoy-rope and cable of the backing anchor become tight, when it is let go, the buoy that was taken from the large one being previously bent to it. In this situation, should the large anchor come home, the scope of cable from it to the anchor a-head, participating of the strain communicated to the innermost one, checks its progress, and ensures to the vessel a greater security. Where there is more room to drive without danger, and it blows so hard, that the sea runs too high for boats to work, an anchor is backed by clenching round that part of the cable next the hawse-hole, the end of a cable bent to another anchor on board; this being done, the second anchor is let go under foot; the ship is then suffered to drive, and the cable thus becomes tight from the ring of the anchor laid down to its own anchor, which also, by the driving, is now become a cable's length a-head of the former anchor.

ANCHOR, riding at, the state of a vessel moored and fixed by her anchors at some proper station.

Where a great number of vessels are moored in the same port, care is to be taken by the pilots, or those who have the command, that each ship be at a due distance from the rest, to prevent their running foul of each other; also that they be neither too near, nor too far from land. The proper space betwixt vessels is, from two to three cables' length. See *MOORING*.

ANCHOR, dropping, or let fall the, otherwise called casting anchor, imports the letting it down into the sea.

In some cases it is necessary to drop two anchors opposite to each other, one of them to keep the ship firm against the tide, or flow, the other against the ebb.

On approaching an anchorage, the anchor and buoy are got clear, and a range of cable, stretched along the deck, suitable to the depth of water. Care should be taken that nothing is in the way to check the cable, or stop its running

out; then, at a proper distance, a turn is taken round the bits with the cable, thus: first pass the cable from the anchor underneath the cross-piece, then take up a bight of the cable abaft the bits, and throw it over the bit-head. The end of the cable is clenched round the orlop beams in the royal navy, and round the main-mast in the merchant service. It is necessary to have water near the bits to prevent its firing by the friction. *STOPPERS* and *RING-ROPEs* of all kinds should be ready for use. The flock-lashing being cast off, and nothing but the anchor-stopper and shank-pointer retaining the anchor, men are stationed to stand by them, and let go at the moment when the order is given.

A ship should generally be brought to anchor under an easy fail, such as the three top-fails, jib, or fore topmast stay-sail, and sometimes the mizen, according as the vessel has more or less inclination to fall off or come to the wind. An anchor should never be dropped to leeward of the place you mean to bring up in; because that would often render it necessary to cast two anchors at once, for fear of dropping still more to leeward. When the wind is so violent as to bring the anchor home, and make the vessel drive, the cable is veered away; and in veering away, the turns of the stopper lariards are slackened, and a portion of the cable suffered to go out of the hawse, to let the vessel further astern of her anchor; in which situation she bears less strain on the flukes, and is less liable to drag the anchor; for, the more cable is out, the flukes become deeper buried, and the ship rides in greater safety. In letting go an anchor, care should be taken that the water be not so shoal as to endanger the ship hurting herself upon it, and that the anchor be not fouled by the cables getting about the fluke or stock. Nor should the water be too deep, because the cable, when out, should approach as nearly as possible to an horizontal direction. This principle is so true, that three cables spliced together on end of each other, are kept bent to the best bower anchor, to be used in cases of necessity; and it is found, that one good anchor, with a long range of cable, is a safer anchorage than two anchors with short cables. However, when the ship has not room to drive, and in a dark night, let fall a second anchor under foot, with a range of cable above the deck. At all events, the deep-sea lead should be thrown over the gun-wale, and the line frequently handled, to be certain that the ship does not drive. In hard and rocky bottoms, where anchors cannot have much hold, cables are chafed and cut to pieces. When necessity requires anchoring in such places, a chain should be run up the cable from the ring of the anchor to a certain distance, in order to secure it from danger. When a chain is not to be had, empty casks, well bunged, are good substitutes, slung and fastened to the cable at equal distances, to support and keep it from the bottom. When ground is soft and oozy, and anchors will not hold securely, but come home with little wind, it is common to cover the flukes with a broad triangular piece of plank, much larger than the fluke. Sometimes the anchor is backed, or retained, by carrying out the stream, or kedge, a-head of the anchor by which the ship usually rides. In this situation, the bower anchor is confined by the stream, or kedge, in the same manner as the ship is restrained by the bower anchor. In preparing to come to anchor, when the wind is not violent, the top-fails ought always to be clued up at the mast-heads; that is, let go the sheets, and haul the clue-lines and bunt-lines close up; lower away the top-fails, and take in the slack of the braces as the yards come down. In this manner you run less risk of splitting and tearing the sails than by any other method. For the various methods of anchoring in different circumstances, see *Elements of Rigging*, &c. vol. ii. p. 292—296.

ANCHOR.

ANCHOR, weighing, imports the act of withdrawing, or recovering the anchor into the vessel, in order for sailing. The anchor is ordinarily weighed, or recovered by means of a capstan or windlafs.

In large ships which have a main and jeer capstan, and the strain is thought too great for the messenger alone, the viol is used thus: three or four turns are taken round the jeer capstan with one end, so as to leave that side clear on which the cable is coming in; and pass the other end through the viol-block, which is lashed round the mainmast on the lower deck. It is then carried forward, and passed round the rollers in the manger near the hawk-holes; then brought aft, and spliced to the other end with a short splice; and the ends marled down tight. That side of the viol on which the cable is coming in is fastened to the cable by nippers; and thus the continued efforts of the capstan are conveyed to the cable, until it is hove in. The nippers are clapt on in the manger, from one to two fathoms asunder; and the viol is applied to the midship, or inside of the cable. Nippers are clapt on by taking three or four turns round the viol, four turns round the cable and viol, and then three or four turns round the cable. This method is very suitable to quick heaving; but when the strain is great, and the cable muddy, the nippers clapt on after this method will not nip sufficiently; in which case recourse is had to the following method: throw sand or ashes upon the cable, and take a long dry nipper, which middle, and pass one half aft, racking it in and out round the cable and viol; then worm its end round the viol only. After this pass the other half in the same manner forward, but worm its end round the cable only, and let each end of the nipper be held on. The advantages of this method are, that, as the strain of the cable lies forward, and that of the viol aft, the nipper will be drawn so tight as effectually to hold the cable till something give way. Besides, they can never jamb, for both ends are clear for taking off.

Ships without a jeer capstan heave in their cables by the messenger, which has an eye spliced in each end; one of which ends is passed with three or four turns round the capstan on the upper deck, and the other end is passed forward round the rollers, at the forepart of the manger; then brought aft to the other end, and lashed thus: several turns are passed through the eyes, crossing each other in the middle, then a half hitch is taken round the parts, and the ends stopped with spun-yarn. What remains of the operation is performed as by the viol, excepting that the messenger is applied to the outside of the cable, and when the nippers are insufficient, the messenger may be hitched by fastening its bight round the cable at the manger with a rolling hitch, and fishing the bight round the cable before the hitch.

When the starboard anchor has been gotten up, and the cable of the second anchor enters the larboard hawk-hole, the operation of getting up this anchor is the same, observing only, that the messenger must be shifted, and the turns on the capstan reversed; and the men, who before held on the larboard side in the first operation, will hold on the starboard side now; the motion of the capstan is performed the contrary way, and the cable on the larboard side is fixed and hove in.

Most merchant ships and small vessels heave up their anchors by a windlafs, round which are taken three turns of the cable, and held on by hand, or by a jigger, thus: the end of the rope which has the sheave is passed round the cable, with a round turn, close to the windlafs, the leading part of the rope coming over the sheave, and stretched aft,

by means of the fall passing through the jigger block; the standing part of the fall is made fall round a stantion, at the fore part of the quarter-deck, and the leading part is bowled upon, which jams the turns taken round the cable; when the jigger arrives a-breast of the hitchway, it constantly removes forward, and the cable is jammed by a hand-speck at the windlafs, until the jigger is refixed.

The anchor is weighed with the long boat, by taking the boat to the buoy of the anchor, and putting the buoy rope over the davit of the long boat, and a tackle on the buoy rope; by which, with the assistance of men on the fall, the anchor is weighed out of the ground. When this is done, the cable is hove in on-board; the buoy rope and tackle being secured in the boat, they approach the ship as the cable is hove in, and the anchor catted and stowed. Small anchors and grapnels are got up by the davit, hauling upon the cable or grapnel rope by hand.

An anchor is weighed by under-running, when the cable is placed over the davit-head, and it is under-run, till it is nearly a-peek, when it is tripped by means of tackles, as in the former case by the buoy rope. This method is troublesome, and is only adopted when the buoy is gone, and a ship cannot get near her anchor for want of water. See Elements of Rigging, &c. vol. ii. p. 306, &c.

ANCHOR, dragging, is when the anchor gives way, or loses its hold in the ground by the force of the wind, or sea, and the vessel drives from the place.

ANCHOR, to cat the, is to hook the cat-block to the ring of the anchor, and haul it up close to the cat-head. See Stowing of ANCHORS.

ANCHOR, clearing the, signifies the getting of the cable off the fluke.

Generally also, when they let fall the anchor, they use this term, to see that neither the buoy rope, nor any other ropes, hang about it.

ANCHOR, fetching, or bringing home the, denotes the weighing it in the boat, and bringing it aboard the ship.

The anchor is said to come home, when the ship drives away with the tide or sea.—This may happen, either because the anchor is too small for the burden of the ship, or because the ground is soft, and oozy; in such places shoeing is used.

When a ship is compelled to anchor on a lee-shore, or in a narrow road where there is deep water, with an apprehension that the ground is either too hard or too light for good holding ground, drop the common riding bower, first keeping 25 or 30 fathoms of cable on board, and throw over the lead. If by this means, or by the land, it appears that the anchor drags, let fall the best bower, and at the same time veer out the rest of the common bower cable, till the best bower gives her a check; after which bend a sufficient rope or hawser to the common bower, without the hawk-hole, and pass it through another hawk-hole to the windlafs, making it fast. Then cast off the common bower, and pass the cable end through the hawk-hole, and take a running clinch with it round the best bower cable, and let it go. As soon as you think the vessel has dragged her best bower cable far enough to straiten the common cable on the ground, veer out as much of the best bower as may be agreeable; when, however violent the weather, the vessel will never drag them home. A small vessel, which rides hard in a head sea, will be powerfully assisted by fastening an empty butt to the cable, about 10 fathoms from the vessel; for that will first receive the motion of the sea, and check it before it comes to the vessel, so as to cause its rising up to the swell, and effectually aiding it to resist the violence.

ANCHOR, *to ffb the*, is to draw up the flukes of it towards the top of the bow, in order to stow it, after having been catted.

ANCHOR, *gimbleting the*. See GIMBLETING.

ANCHOR, *shoring*, denotes putting boards on the flukes, in the form of flukes themselves, to make it broader than before, used when they are obliged to anchor in bad ground to prevent the ship from driving. This is what the French mariners call *breder l'ancre*, and the Dutch *l'anker bekleeden*.

In some cases they have been known to tallow the anchors, where the ground being soft, the ordinary would not hinder them from coming home. Manwaring saw an instance of tallowing the anchor in Porto Tareen by Tunis. The reason of the advantage is hard to assign; he supposes it to be that the tallow sinks deeper into the ooze, and finds some harder ground at the bottom than the other.

ANCHOR, *to trip the*, is to loosen it from the ground, either by design or accident. See A-TRIP.

ANCHOR, *to sweep an*, is to seek at the bottom for one lost, by means of a rope called a sweep. This rope has its two ends made fast to two boats, abreast of each other, at a small distance asunder. On the bight of the sweep is fixed a weight of shot, ballast, &c. to keep it at the bottom. The two boats row on toward the place where the anchor is supposed to be, and consequently draw along the sweep; which taking the bottom, hooks or entangles itself with the object of their search. The boats then row across each other twice, so as to take a round turn with the sweep, which being a hawser, both parts are brought into the hawse-hole, and to the capstan, or if small, to the long boat; and hove in upon as before.

Other terms and words of command relating to the anchors are, the "anchor is a-peek," that is, when heaving up the anchor, the cable is drawn so tight as to bring the ship directly over it; "the anchor is cock-bill," when the anchor hangs right down from the cat-head, by the ship's side, ready to be sunk at a moment's warning; this word is given by the masters, when they are ready to bring the ship to an anchor; "the anchor is foul," that is, when the cable, by the turning of the ship, is hitched, or got about the fluke: which will not only cut the cable asunder, but hinder the anchor from holding. On this account, when they come to an anchor where there is a tide, they lay out two anchors, by which means on the turning of the tide the ship winds up clear of either.

ANCHORS, *stowing of*. In fitting out ships, the anchors are brought in craft near the bows, being most convenient to the hawse-holes, through which the cables pass to be clenched. The bower anchors are first catted, which is performed by hooking the hook of the cat-block into the ring of the anchor, and bowling upon the fall that leads in through a snatch-block on the fore callie; the cat-falls being previously reeved through the sheaves of the cat-head and cat-block, keeping the hook of the cat-block downwards, and its point inwards. They are then fitted, by means of the fore-davit, pendant, and tackle, thus: the davit is first stopped in the channel on the side wanted, and supported by guys; the mast-head guy goes over the end of the davit, with an eye; the other end fastens round the fore-mast head, with a round turn and two half hitches. The fore-mast guy goes over the end of the davit, the other end fastens round the cat-head, with two half hitches, and securely flopt. The after guy goes over the end of the davit, and makes fast with two half-hitches through an eye bolt in the after part of the fore channel. At the outer end of the davit is hung, by its strap, a large single block, through

which is reeved the pendent, with a large iron hook spliced in the lower end, to hook the anchor within the flukes; then to the inner end of the pendent is made fast a tackle, by thrusting a toggle through an eye in the block-strap; after that has passed through an eye in the pendent, the other block of the tackle is hooked in an eye-bolt in the fore part of the quarter-deck; the effect of the tackle is communicated to the hook, by means of the pendent, by men's bowling on the tackle fall. Thus, the flukes of the anchor are raised and placed on the gun-wale, where it is made fast by the shank-painter chain. That the flukes may lie level, the stock is bowled upon by the anchor-stock tackle, the double block of which is hooked to a selvage, fastened round the stock of the anchor under the first hoop, and connected by its fall to a single block, hooked to a selvage fastened round the laniard of the main stay: the fall leads in upon the fore-castle. The best bower is then placed forward near the bows on the starboard side; the small bower near the bows on the larboard side, a little abaft their respective cat-heads; and are secured by their stoppers, from the cat-heads and shank-painters. The stopper has one end clinched round the cat-head; the other end passes through the ring of the anchor, returns upwards, and leads over a large thumb cleat bolted to the cat-head, and is made fast with several turns, and the end hitched round the head-rail and timber head, on the fore-side of the cat-head. The shank-painter hangs the shank and fluke of the anchor to the ship's side out-board; and when stowed, the shank-painter is passed under the inner fluke round the shank of the anchor, and made fast with two or three turns, and the end stopt round timber-heads on the fore-castle. With these two bower anchors ships are generally moored, when lying in a tide's way, or in a fleet.

The sheet and spare anchors are hoisted by runners and tackles, main-stay, and yard tackles, and are stowed securely with stock and bill lashings at the after part of the fore-shrouds, before the chefs-trees on each side of the ship, with one of the arms resting on a chock, bolted to the gun-wale; the stock being bowled-to by the anchor-stock tackle. The sheet-anchor is stowed on the larboard side, and is the first resource in a gale of wind, after parting with either of the bowers; for which reason, when in port, the sheet cable is kept bent, and the anchor is over the side, supported by the stopper and shank-painter, ready for cutting away in case of necessity. The spare anchor is stowed on the starboard side, and is seldom used, but when one of the others is lost.

The stream anchor is stowed on the spare anchor; and, when used, it is sent in the long boat, or launch, with its cable bent, and let go at any particular spot, either for steadying the ship, when riding by only one bower, or to assist a ship when in-shore, or to warp her, &c.

The kedgè is stowed on the stream and spare anchors, and is frequently used to stop a slip for a tide, in little winds; but, if the wind be too powerful for the kedgè, the stream anchor is substituted. The kedgè is sometimes used in moderate weather to warp the ship, so as to shift her birth. Elem. of Rigging, &c. p. 287, &c.

ANCHOR, in *Architecture* and *Sculpture*, denotes an ornament in form of an anchor, or arrow's head; frequently carved on the ovolo of the capital, in the Tuscan and Ionic orders, as well as in the bed-moulding of Ionic and Corinthian corniches.

The anchors are usually intermixed with representations of eggs; whence the *celinus* or ovolo itself is popularly called *eggs* and *anchors*.

ANCHOR, *anchors*, in *Literary Matters*, the figure of an anchor,

anchor, represented in ancient books; which is of two kinds, *superior* and *inferior*. The *superior*, &c. is where the crooked part is uppermost, used to denote a thing or passage strongly expressed. The *inferior* is where the crooked part is at the bottom, to denote a thing poorly or meanly set forth.

ANCHOR is also used, in a less proper sense, for any thing that holds another thing fast, to prevent its driving.

In this sense sea-muscles are said to *ride at anchor*, by a sort of threads the thickness of a large hair, which they emit out of their body, to the number sometimes of a hundred and fifty, which fastening to the stones and other adjacent bodies, keep them firm in their place. The same is done by the *PINNA marina*.

ANCHOR, in *Heraldry*, is the emblem of Hope; and is taken for such in a *spiritual*, as well as in a *temporal* sense.

ANCHOR, a measure. See ANKER.

ANCHOR Island, in *Geography*, an island in Dusky Bay, in New Zealand, visited by Captain Cook in 1773, and by Captain Vancouver in 1791. The harbour was particularly surveyed by the latter navigator, who observes, that it appeared to be perfectly secure, and may be found convenient, when accidents prevent vessels from getting into Facile harbour. It has two entrances; that to the north of the Petrel Islands is a fair, clear, and very deep channel; its general soundings were from 33 to 38 fathoms; in the narrowest part it is about a cable's length wide, and free from danger; as the shores are steep, without any sunken rocks or shoals, excepting within the passage close under the south side of large Petrel Island, where they are discoverable by the weeds growing upon them, and are quite out of the way of its navigation. The other passage is to the southward of the Petrel Islands; and if a strong northerly wind compels any person to make choice of this in preference to Facile harbour, the south-west point of large Petrel Island should be kept close on board, in order to weather the rock that appears above water in the middle of the harbour, and to avoid a sunken one, which does not appear, and over which there is no greater depth than 12 feet at low water. Anchor Island harbour, though a very secure port, is not very convenient to get to sea from, on account of its narrow limits, great depth of water, and the above mentioned sunken rock in its western entrance. The mountains of Anchor Island, and others round the bay, which, on Vancouver's arrival in November, were perfectly free from snow, were, after a storm which they experienced, covered with it. In a few days the greater part of it disappeared; and it is probable that such falls of snow are not frequent, as they do not check the luxuriance of vegetation. S. lat. 45° 45' 36". E. long. 166° 16'. E. variation, 15°. Vancouver's Voyage, vol. i. p. 68.

ANCHORA, in *Entomology*, a species of CIMEK, discovered by Professor Thunberg in Japan. It is of a roundish form with six black spots on the thorax and wing-cases, and a white anchor-shaped mark on the scutellum. Gmelin.

ANCHORA, in *Ancient Geography*, a small island of Peloponnesus, which the ancients called Asine, and sometimes Fanaromini. It was situated near the gulf of Modon, or of Coron. It is mentioned both by Strabo and Ptolemy.

ANCHORAGE, in *Sea Language*, ground fit to hold a ship's anchor, so that she may ride safely. The best ground for a ship to anchor in is stiff clay, or hard sand; and the best riding at anchor is when a ship is land-locked, and out of the tide.

ANCHORAGE, in *Law*, denotes a duty taken of ships for the use of the haven where they cast anchor. The ground in all ports and havens being the king's, no man can let an anchor fall in any port without paying for it to the king's officers.

ANCHORAGO, in *Entomology*, a species of the Fabrician genus BRENTUS, found in India. It is linear, wing-cases striated with yellow, and thorax elongated. Fabricius. This insect is described by Linnæus as a species of CURCULIO, under the same specific name as Fabricius has adopted: his description is, beak long, thighs dentated, wing-cases striated with yellow, and thorax elongated. Gmelin has removed this species from the CURCULIO to the BRENTUS genus in the last edition of the *Systēma Naturæ*.

ANCHORAGO is likewise a species of CIMEK that inhabits North America; the general colour is blue, apex and base of the scutellum yellowish, margin of the abdomen yellow with black spots. Fabricius and Gmelin.

ANCHORED, ANKERED, in *Heraldry*. See ANCRÉE.

ANCHOVY, in *Ichthyology*, a little sea-fish much used by way of sauce or seasoning; it is the *Clupea maxilla superior longiore* of Artedi, and *CLUPEA ENCRASICOLUS* of Linnæus. See ENCRASICOLUS.

The word anchovy is derived from the Spanish *anchova*, or rather from the Italian *anchioe*, which signifies the same.

The anchovy is caught in the months of May, June, and July, on the coasts of Catalonia, Provence, &c. at which season it constantly repairs up the straits of Gibraltar into the Mediterranean, where they are taken in large quantities. The great fishery is at Gorgona, a small isle west of Leghorn. Collins says, they are also found in plenty on the western coasts of England and Wales. Near a century ago the anchovy was found at the mouth of the river Dec, by Mr. Ray; but since that time it has been found very rarely and only by Mr. Pennant, in 1769, on our coasts.

The fishing for them is chiefly in the night-time; when a light being put on the stern of their little fishing-vessels, the anchovies flock round, and are caught in the nets. But then it is asserted to have been found by experience, that anchovies taken thus by fire, are neither so good, so firm, nor so proper for keeping, as those which are taken without fire.

When the fishery is over, they cut off the heads, take out their gall and guts, and then lay them in barrels, and salt them. The common way of eating anchovies is with oil, vinegar, &c. in order to which they are first boned, and the tails, fins, &c. slipped off. Being put on the fire, they dissolve almost in any liquor; or they are made into sauce by mincing them with pepper, &c.

Some also pickle anchovies in small delf, or earthen pots, made on purpose, of two or three pounds weight, more or less, which they cover with plaster, to keep them the better. Anchovies should be chosen small, fresh pickled, white on the outside, and red within. They must have a round back; for those which are flat or large are often nothing but sardines. Besides these qualities, the pickle, on opening the pots or barrels, must be of a good taste, and not have lost its flavour.

ANCHOVY pear, in *Botany*. See GRIAS.

ANCHUSA, Ἀγχουσα, παρὰ τὸ ἀγγεῖον, from its supposed *consoling* quality, or, as others say, because it *strangles serpents*, in *Botany*, buglossum of Tournefort and Gærtner, a genus of the *pentandria monogynia* class and order; of the natural order of *asperifolia*, and *borraginæ* of Jussieu: its characters are, that the *calyx* is a perianthium five-parted, oblong, round, acute, and permanent; the *corolla* is monopetalous and funnel shaped, tube cylindrical, of the length of the calyx, limb semiquinquesid, from erect expanding and obtuse; throat closed with five small scales; convex, prominent, oblong, and converging; the stamina have very short filaments, in the throat of the corolla, anthers oblong, incumbent,

incumbent, and covered; the *pisillum* has four germs, style filiform, of the length of the stamina, stigma obtuse and emarginate; no *pericarpium*, but the calyx, enlarged and erect, contains the seeds in its bosom; the *seeds* are four, oblongish, obtuse, and gibbous. Martyn enumerates ten, and Gmelin sixteen species. 1. *A. officinalis*, buglosa, buglossa italica, b. longifolia, b. vulgaris, *echium italicum spinosum*, officinal, or common alkanet or bugloss, with leaves lanceolate, second spikes imbricate, and ovate bractes. This species is a perennial, and flowers in June and July. The stem is about two feet in height, erect angular, foliose, somewhat branched and panicled, the root is fusiform, and externally black; the herb is hairy and rough; the leaves are lanceolate, acute, and slightly decurrent; the upper ones, subovate at the base; the racemes are mostly double, and revolute; the bractes ovate, and not as in the *A. angustifolia*, linear-lanceolate; the flowers purple and funnel-shaped. It grows wild in Italy, Spain, France, Germany, Sweden, Denmark and Siberia, by road sides and in corn fields. It is found also with us amidst rubbish or in marshes; as on the links near Hartley Pans, in Northumberland. Miller cultivated it in 1748. When it is tender in the Spring, it is boiled and eaten in Upland. The tube of the corolla is melliferous, and the bees are very fond of it. This is not the anchusa, but the bugloss of officinal writers; but it does not appear that our bugloss possesses the same properties with that of the ancients; for it has no claim to the title of *euphrosynum* given to theirs (see Pliny. Hist. Med. lib. 25. c. 8.), as it has no exhilarating quality, although its flowers have been long referred to the class of the four cordials. This plant, says Dr. Lewis (Mat. Med. p. 167.) appears to be nearly similar to borage, in its medicinal qualities as well as in its external form. The principal difference seems to consist in the leaves being somewhat less juicy, and the roots more mucilaginous. The roots, leaves, and flowers are ranked among the articles of the *materia medica*, but they are very seldom used. In China this plant is said to be much esteemed for gently promoting the eruption in the small pox. 2. *A. angustifolia*, borago of Zan. hist. buglossum angustifolium of Allion. and Mor. buglossum foliis linguiformibus asperis, &c. of Haller, *echii facies buglossum* of Lob.; narrow-leaved alkanet, with racemes almost naked in pairs. Haller thinks that this is not a distinct species from the first. In gardens it grows to the height of two feet, but in its wild state does not attain more than a foot. The leaves are narrow, and not so hairy as the first; the spikes of flowers are double, and have no leaves; the flowers are small, and of a red colour; the roots will continue three or four years in poor land. It is found wild in Italy, Germany, and Switzerland: flowers in July and August by way sides, and in the borders of ploughed lands; cultivated here by Miller in 1759. Boerhaave recommended the juice in the pleurisy and maniacal cases. 3. *A. italica*, buglossum of Haller, Ray, and Bauhin, Italian alkanet, with leaves lucid and strigose, racemes two-parted, two-leaved, flowers somewhat unequal, bearded at the throat. This differs from the first species in size, in that the flowers are equal and funnel-shaped; whereas in this they are salver-shaped; they are much more imbricate in that, the segments of the calyx being broader and shorter; those of the corolla ovate; with the scales of the throat only slightly tomentose. 4. *A. undulata*, waved *A. strigose*, leaves linear toothed, pedicels less than the bractes, fruit-bearing calyxes inflated. This plant is three feet high, with many strong lateral branches, produced from the main stem near the ground; the leaves are stiff, rough, six or seven inches long, and about half an inch round at the top, closely embracing the branches at the base, and two

inches broad, indented and waved on their edges, the upper surface beset with hairs, and rough to the touch: spikes of flowers axillary, a foot or more in length, reflex: corollas fine blue; the root decays after the seeds are perfected, though sometimes, in gravel, or the joints of stone walls, it will live three or four years; but such plants are seldom more than a foot high, and have small narrow leaves, so that they appear like a different species. It is a native of Spain and Portugal, and Gmelin found it in Siberia; cultivated in 1739 by Mr. Miller. 5. *A. tinctoria*, buglossum tinctorium of Allion. Dyer's *A.* downy, leaves lanceolate, obtuse, and stamens shorter than the corollas. This species is perennial, and resembles the first in its leaves and branches, only that they are more woolly; the root is red. It much resembles the seventh species, and is entirely covered with a white down. It grows about Montpellier in France, in Silesia, Spain, and Italy; and was cultivated here in 1683 by Mr. James Sutherland. The roots of this plant, when in perfection, are externally of a deep purplish red colour. The red cortical part, separated from the whitish woody pith, imparts a fine deep red to oils, wax, and all unctuous substances and also to rectified spirit of wine; but to water it gives only a dull brownish hue. The spirituous tincture, when inspissated to the consistence of an extract, changes its fine red to a dark brown. The root has little or no smell, and scarcely any taste; extracts made from it, by water and by spirit, are bitterish and roughish, but in too low a degree to be regarded as medicines, though they were formerly in repute as aperient, for dissolving coagulated blood, restraining diarrhæas, and drying inveterate ulcers. Its chief use at present is for colouring oils, plasters, lip-salves, &c. which receive a fine deep red from one-fortieth their weight of the root. For this purpose the consistent unctuous materials are to be liquefied in the heat of a water-bath, the powdered anchusa added, the mixture stirred now and then till sufficiently coloured, and then strained through a linen cloth. The roots of bugloss boiled in a decoction of Brasil wood are sometimes substituted for those of alkanet; but these will not dye oils red. Lewis and Murray. 6. *A. virginica*, lithospermum virginianum of Morison and Ray, virginian *A.* with flowers scattered, and stem smooth. This is perennial, and a native of North America, where it grows in the woods, covering the earth with bright yellow flowers, and known by the name of *puccoon*. 7. *C. lanata*, woolly *A.* with villose leaves, shaggy calyxes, and stamens longer than the corollas. This species was found by Brander near Algiers, and is very like the fifth. 8. *A. sempervirens*, buglossum latifolium sempervirens of Dillon in Ray's Synop. borago sempervirens of Gerard, evergreen *A.* with ovate leaves, and axillary two-leaved and capitated peduncles. The root is thick, and externally black; the herb stem evergreen and hispid; the stems angulate round, and foliose; the leaves alternate and ovate; the peduncles axillary, solitary, capitated, and two-leaved at the apex; the limb of the corolla blue, rather salver-shaped than funnel-shaped, segments rounded, tube at the base four-cornered; the germs imbedded in a hollow glandular receptacle; seeds one or two, generally abortive, rough, and very hard. In habit and character this plant approaches to myofotis. It is found wild in Spain and Italy. With us it has been found by road-sides, among rubbish, and in the joints of old walls, in several places about Norwich, at Haddiscoe in Suffolk, near Birmingham, Worcester, and Sidmouth, near Rochester and London, and in the ruins of Maes Glas monastery in Flintshire. It is perennial, and flowers in May and June. Withering's Bot. Arr. vol. ii. p. 227. Smith's Flor. Brit. vol. i. p. 215. 9. *A. barrelieri*, buglossum barrelium of Allion. buglossum

buglossum sylvestre minus, &c. of Barr. with leaves ovate, lanceolate, erect stem, racemed peduncles, pointing one way. This species was found in Piedmont by Bellardi. 10. *A. paniculata*, paniced A. or bugloss, with leaves lanceolate, strigose, quite entire, panicle dichotomous and divaricate, flowers peduncled, calyxes five-parted, with tubulate segments. It is biennial; flowers in May and June; a native of Madeira, where it was found by Mr. F. Masson, and introduced into Kew Garden in 1777. 11. *A. tuberculata* of Forskahl, referred to this genus by Gmelin, with tuberculated nuts. This, says Mr. Dryander (Linn. Transf. vol. ii. p. 222.) is *LITHOSPERMUM orientale* of Gmelin. 12. *A. echinocarpus* of Forst. with muricated nuts, and single anther covered at the top. 13. *A. flava*, of Forst. with rugose nuts, procumbent stems, and axillary, decurrent peduncles. This, says Mr. Dryander (*ubi supra*), is the *ASPERUGO Ægyptiaca* of Gmelin's Linnæus. 14. *A. hispida* of Forst. with smooth nuts, short axillary peduncles, stem hispid, and the lower leaves petiolate. 15. *A. saxatilis*, with leaves oblong, linear, on both sides hairy, the floral leaves lanceolate, with flowers scattered, axillary and subsessile. 16. *A. amara*, with undulated leaves and triquetrous nuts.

Culture. All the ten preceding species of anchusa, enumerated by Martyn, may be easily propagated by seeds, sown in the Autumn, upon a bed of light sandy earth; and in the Spring, when the plants are strong enough to be removed, they should be planted in beds, at the distance of two feet, and, in a dry season, watered till they have taken root; and afterwards they will only need to be kept clear from weeds. If the seeds of the common sorts be allowed to scatter, the plants will rise in plenty. Gmelin's Linnæus. Martyn's Miller.

ANCHUSA. See **BARLERIA**, **BORAGO**, **LITHOSPERMUM**, **MYOSOTIS**, **ONOSMA**, and **PULMONARIA**.

ANCHYLE, or **ANCYLE**, in *Surgery*. See **ANCHYLOSIS**.

ANCHYLOBLEPHARON. See **ANCYLOBLEPHARON**.

ANCHYLOPS. See **ANCHILOPS**.

ANCHYLOSIS, in *Surgery*, (from *αγκυλωσ*, *curvo*) *Anchyle*, *Ancyle*, *Ankylose*, *Acinesia*, immobility of the joints. This term is used when any joint of the body becomes, whether from external or internal causes, stiff and inflexible. It is divided into the *true* and the *spurious* anchylosis. By the true anchylosis is understood that disease, in which the bones of the joints form such a synostosis with each other, that they appear to consist of a single piece. In the spurious anchylosis, the motion between two bones at the joint is in some degree, though not entirely, lost.

The mobility of a joint may be more or less interrupted by various causes, amongst which are different diseases of the bones, particularly a tumefaction of their extremities, caries, fracture, near to or within the joint, dislocation, twisting, and crushing of the bone; as well as several kinds of tumors, such as fleshy excrescences, aneurisms, hydropical accumulations, &c. The muscles may also give rise to the stiffness of a joint, when the flexors contract so strongly that the extensor muscles lose their force, in which case a **CONTRACTION**, as it is termed, is produced. This generally arises from internal causes; sometimes, however, from external, or diseases that have attacked the joints, in which cases the ligaments and other surrounding parts of the joints are likewise affected. To the internal causes belong the swelling of the bones, the rickets, a metastatical deposition of corrupted fluids in the joint, a deficiency of the synovia or mucus which lubricates the joints, a continued pain, under which the patient finds relief from a certain position of the limb, in which he conse-

quently keeps it for a long time, the colica saturnina, gout, chronic rheumatism, and paralysis. Some indeed have assigned, as causes of impeded motion in joints, the inspissation and accumulation of the mucus which lubricates their cavities; but even though we should admit that this synovial mucus might become preternaturally thick by the limb being left too long without motion, it cannot, however, be proved that its inspissation may increase to such a degree, as entirely to prevent the motion of the joint, as even the thickest mucus is still able to lubricate smooth surfaces, and facilitate their motion upon each other. On the contrary, a too long continued and violent exertion and motion of the body, as well as long continued repose, may deprive the fibres of their natural flexibility, as in both cases more earthy particles are deposited, and the fibres themselves rendered more dense, in consequence of which the ligaments also resist the extension and flexion of the joint.

The true anchylosis may easily be known by the impossibility of moving the bones in their joints, by the insurmountable difficulty which opposes their flexion or extension; but we may also with equal ease discover the false anchylosis by both seeing and feeling that the part still retains some power of motion at the joint. The prognosis depends upon the knowledge of the true cause of the disease, according to which the cure is either perfect or imperfect. By the imperfect cure we can only alleviate the inconveniences of the true anchyl. namely, the incurable synostosis of the bones; so that the perfect cure can only be successfully accomplished in the spurious anchylosis.

In general the method of cure is to be determined according to the different causes which have given rise to the incurvation and impeded motion of the joint. When the proximate cause consists in a contraction, we must endeavour to discover and remove the cause by which the contraction has been produced, and afterwards assist the cure by means of external applications; for frequently, even though the internal causes may have been removed, the contraction of the muscles still remains. The contraction may be discovered by the tendons of the muscles, which keep the limb bent or extended, being very much stretched. Moreover, all that has been said concerning the internal causes and diseases, with a view to the cure of the immobility of the joints, applies also to the external causes and diseases; such as white swellings, suppuration of the joint, preternatural excrescences in the joints, caries, dryness of the joints, burns, cicatrization, &c.

When now the internal or external causes have been removed, the surgeon must apply the proper remedies for restoring the motion of the joint itself. These remedies consist in endeavouring to soften the muscles, tendons, adipose membrane and ligaments, afterwards slowly and gradually to extend them, and progressive efforts to move them to restore them by degrees to their former condition; for which, however, a long space of time is generally required.

In an anchylosis arising from a fracture of the bones of the joint, besides prescribing a light diet, we should rub the diseased parts about the joint with flannel, in order to attenuate the fluids, and increase the effect of the remedies peculiarly adapted for the cure of the disease. For, in order to restore the mobility, it is particularly necessary that the muscles, ligaments, skin, and cellular texture should be softened and relaxed by emollient remedies, which ought to be employed very liberally, and persisted in for a great length of time. Contracted muscles should be rubbed, throughout their whole extent, with emollient applications, for the space of half an hour or more at a time, and three times every day.

The limb itself should constantly be kept moistened with the same applications, by wrapping it, every time after it has been rubbed, in flannel dipped in the emollient fluid.

Whilst we are applying the frictions, we should endeavour to extend the limb as much as the patient can bear, slowly, but with perseverance.

When the contraction is situated in the knee-joint, we may make use of a machine, with the view of preventing the shortening of the muscles. The extension should by no means be performed too quickly, as pain and inflammation might easily be the consequence. Mr. B. Bell, in his System of Surgery, has recommended a useful machine for this purpose; Mr. Koehler (*Anleitungzum Verband, &c. Leipzig, 1796, S. p. 168.*) recommends a bench; and Mr. Trampel (*Arnemaun's Magazin fuer die Wundarzneiwissenschaft, B. i. St. 1. p. 23, fig. 1.*) a machine similar to that of Mr. Koehler.

Amongst the emollient remedies adapted for the cure of this disease are particularly to be enumerated all sorts of animal oils, such as the fat of ducks, geese, and hogs; the steam of warm water, warm baths; fresh expressed oils, the Ungt. althæ. Some recommend also an ointment made of the dripping of hares, turpentine, and oleum ovi; also baths and embrocations mixed with brandy; and finally, the vapour bath. When the substance of the fibres has become too dense, repeated embrocations, with a warm solution of sal ammoniac in water, are particularly useful. When these remedies are not found adequate to the removal of the stiffness, we may employ more powerful ones, such as embrocations with the brine of herrings with vinegar, vitriol, and alum; also with a solution of the balsam. vitæ extern. the empl. de galbano & de ammoniaco; especially the gumm. ammoniac. boiled in wine vinegar to the consistence of a plaster, spread thick upon leather, and applied to the diseased part.

Previously to every use of the vapour-bath, we may rub the part with a solution of Venice soap, or also with ol. majoranæ, ol. tartari. fetid. or some other similar oil. In proportion to the effects which it produces on the patient, the vapour bath may be applied for the space of half an hour or an hour, twice or thrice a day, or only every other day. The fluid employed for forming the vapour bath may contain, dissolved in it, sal ammoniac, balsamum vitæ externum, &c. In the intervals, the embrocations are to be applied. Fumigations, with volatile substances, have also been employed with great advantage.

Where the stiffness of the joint owes its origin to a dislocation that has been reduced, and where the soft parts have been bruised, repeated blood-letting, with emollient and discutient poultices should be used, till the tumor and swelling have disappeared, after which the parts may gradually be moved. But when the dislocation has not been reduced we must attend to the tumor, hardness, and inflammation, which are to be treated with general remedies. Where these obstacles do not stand in our way, we may let blood, and attempt the reduction, provided the disorder is not of too long standing.

When symptoms of a deficiency of the synovia are observed, or the blood is inadequate to its secretion in the glands of the joints; we must not only put our patient upon a proper regimen, but also employ general remedies adapted to the complaint; such as gentle evacuants, moderate frictions to the diseased part, baths with decoctions of emollient herbs, or also emollient poultices, to which we may add a quantity of black soap. When, on the contrary, there is too great an abundance of synovia, particularly when the diseased parts are affected with pain and swelling, we must let blood,

and before using discutient poultices or baths, rub the diseased parts with warm flannel, and, at the same time, gently move the joint. But should this not be sufficient, we may mix stimulating herbs with the poultices, and add to the baths a quantity of lime-water, kitchen-salt, or sal ammoniac.

Distortion of the limbs is sometimes a congenital disease, which most frequently occurs in the foot. See VARI & VALET.

ANCI, in Greek *γανυσελας*, *wæsel-elbowed*, from *γανυς*, a *wæsel*, and *αλκων*, an *elbow*, a name given by Hippocrates to those who, from slipping the head of the *os humeri* into the *ala*, have an arm shorter and smaller than it ought to be, and the cubit or elbow of a *wæsel*; whence they are called by some *muffehani*, which fully expresses the Greek word, or barely *anci*. The disorder that gives occasion for the name, happens either in the womb, where the *os humeri* suffers a luxation, from too much moisture; or in tender years by means of an abscess deeply seated about the head of the *os humeri*. See DISLOCATION and LUXATION.

ANCIÃO in *Geography*, a small town of Portugal, in Beira, containing one parish, and about 1200 inhabitants.

ANCIASMUS, in *Ancient Geography*, a town of Greece in Epirus, which was an episcopal see. It is thought to be the same with the *Onchesmus* of Ptolemy.

ANCIENT, or ANTIENT, in its usual sense, denotes a thing which existed in times long ago; and thus it is opposed to *modern*.

We say ancient nations, ancient architecture, sculpture, philosophy, &c. ancient manners, ceremonies, poets, physicians, and the like.

ANCIENTS, in *Church Discipline*. See ELDERS.

ANCIENTS, in *Inns of Court*, imports a distinction of a certain degree. Thus, the society of Gray's Inn consists of benchers, ancient, barristers, and students under the bar: here the ancient is the elder barrister.

In the inns of chancery there are only ancient, and students, or clerks; and among the ancient one is yearly the principal, or treasurer. In the Middle Temple ancient is such as have gone through, or are past their reading.

ANCIENT is sometimes also used, in a *military sense*, for the colours, or an ENSIGN.

ANCIENT, or ANSHENT, in the *Naval armament*, a small flag or streamer set upon the stern of a ship, or on a tent, similar to the guidon used at funerals, which was called an anshent.

ANCIENT *demesne or domain*, in *Law*, is a TENURE, whereby all manors belonging to the crown in William the Conqueror's and St. Edward's time were held.

The number of names of all manors, after a survey made of them, were entered in a book called "*Domesday Book*," yet remaining in the Exchequer; so that such lands as by that book appeared to have belonged to the crown at that time, and are contained under the title "*terra regis*," are called ancient demesne. The tenants in ancient demesne are of two sorts; one who hold their lands freely by charter; the other by copy of court-roll, or by the verge, at the will of the lord, according to the custom of the manor. The advantages of this tenure are, 1. That tenants holding by charter cannot be rightfully impleaded out of their manor; and when they are, they may abate the writ by pleading the tenure. 2. They are free from toll for all things relating to their livelihood and husbandry; nor can be impanelled on any inquest. These tenants held originally by ploughing the king's lands, plashing his hedges, and the like service, for the maintenance of his household; and it was on this account that such liberties were given them, for which they may

may have writs of *monstraverunt* to such as take the duties of toll, &c. No lands are to be accounted ancient demefne, but fuch as are held in focage. Whether land be ancient demefne or not, fhall be tried by the Book of DOMESDAY.

ANCIENT differences, in *Heraldry*. See BORDURES.

ANCIENTLY, in fome *Ancient Statutes*, is ufed for elderfhip or feniORITY. The elder fifter can demand no more than her other fifters, befide the chief mefne, by reafon of her ancienty. This word is ufed in the ftatute of Ireland, 14 Hen. III.

ANCIGNE, in *Geography*, a town of France, in the department of the two Seves, and chief place of a canton, in the diftrict of Malle; five leagues and a half fouth-fouth-eaft of Niort.

ANCILLA, in *Entomology*, a fpecies of PHALÆNA, of the Bombyx tribe. The wings are brown, with three tranfparent white fpoats on the anterior pair: abdomen yellow, with a black ftreak. Gmel. This is the fame infect as Fabricius describes under the fpecific name OBSCURA. *spec. inf.* and is likewise the NOCTUA ANCILLA of Wien. Schmettler. It inhabits Germany, according to Gmelin, and feeds on the lichen parictinus; Fabricius notes it in the cabinet of Dr. Allioni as a native of Italy. In fome fpecimens the pollerior wings are without fpoats, in others yellow, with a brown margin and curved mark.

This fpecies muft not be confounded with the PHALÆNA ANCILLA of Cramer, Pap. t. 149, which is an Indian infect, and the variety (γ) of the NOCTUA FULLONICA of Gmelin, and NOCTUA DIOSCOREÆ of Fabricius.

ANCILLON, DAVID, in *Biography*, a French Proteftant divine, was born at Metz in 1617. In early life he applied to his ftudies with fuch diligence, that it was neceffary, on fome occafions, to refrain, what his biographer calls, the excefs and intemperance of his ftudious difpofition. From the age of 10 years he purfued his courfe of learning at the college of the Jefuits at Metz; and at this time many attempts were made by the directors of the institution to gain him over to their religion and party; but all their efforts were ineffectual. Having determined to devote his life to the profefion of divinity, he removed in 1632 to Geneva; and, during a refidence of feven or eight years in that place, he acquired an extenfive and accurate knowledge of philofophy and theology. In 1641 he underwent an examination before the Synod of Charenton; and fo far approved himfelf by the fpecimens which he exhibited of his talents, learning, and modetty, that he was appointed to the church of Meaux, which was one of the moft confiderable benefices then vacant among the reformed. Here he exercifed his miniftry with very great fatisfaction both to himfelf and to thofe with whom he was connected for 12 years; and fuch was his reputation, that he was admired and efteemed by perfons of all perfuafions, both Catholic and Proteftant. His popularity as a preacher recommended him to the attention of a wealthy perfon, who had one daughter, to whom he was affectionately attached, and he was induced by the refpect which he entertained for him to declare to fome of his friends, that if Ancillon would come and demand her of him in marriage, he would be happy in admitting him to an alliance in his family. In procefs of time a negotiation commenced, and it terminated in 1649 in an union, which was the fource of much domeftic felicity. Four years after his marriage, Ancillon availed himfelf of a vacant benefice in his native city to remove thither. Here he uniformly maintained the fame character, and purfued his ftudies with unabating ardour. The fortune he had acquired by marriage enabled him to indulge his favourite propenfity, which was that of the purchafe of books, fo that his library became

both large and curious; and as it was one of the fineft private collections in France, it was vifited as an object of curiofity by travellers who paffed through Metz. Ancillon purchafed the beft editions of books, for which he gave thefe good reafons: that the lefs the eye is fatigued in reading a book, the more is the mind at liberty to judge of it; and that as the beauties and faults of a work are more clearly feen in print than in manuſcript, fo the fame beauties and faults are more clearly feen when it is printed on good paper and in a fair character, than when the paper and type are bad. Ancillon was no lefs indullrious in the ufe than curious in the choice of his books, and his reading was very various and extenfive; but he diftinguifhed between thofe books which he read for amufement or for general information, and fuch others as were ufeul to him in his profefion. The former he read but once, curiofity, according to the Latin proverb, "ſicut canis ad Nilum bibens et fugiens," like the dog that drinks at the ſtream as it runs; the latter he read over feveral times with attention and care, and omitted no means of impreſſing their contents correclly upon his memory. He marked his books with a pen as he read them, and placed in the margin references to other authors. Ancillon, though he was uncommonly indullrious in his purfuit of knowledge, did not allow his fondnefs for ftudy to occaſion a neglect of the duties of his profefion; but in order to reconcile the one with the other, he addicled himfelf in too great a degree to a reclufe and ſedentary life; and he could never be prevailed upon more than three or four times to viſit a country-houſe which he had near the city. He ſcarcely ever left his own habitation, unlefs to go to church, or to perform the functions of his office; but he never neglected the ſervices of religion, nor difregarded the calls of humanity. He diſcharged all the important and ufeul duties of a Chriſtian miniſter without ostentation, without ambition, and without avarice.

After having enjoyed the ſweets of literary retirement for upwards of 40 years, and occupying the ſtation of miniſter to the Proteſtant church at Metz, with great reputation and ufeulnefs, for 22 years, Ancillon's repoſe was diſturbed by the demon of perfecution. Upon the revocation of the edict of Nantes, in 1685, this excellent perſon was reduced to the neceſſity of abandoning his library, his church, his friends, and his country, and of ſeeking refuge, from the phrenzy of religious bigotry, among ſtrangers. He fled into Germany; and his library, a few books which he had concealed excepted, fell in ſmall parcels, and for very inadequate payments, into the hands of the monks and clergy of Metz, and the adjacent towns. Thus deprived of the fruits of an attention beſtowed on his collection of books for 44 years, and of the pleaſure and benefit which he derived from them, he might well exclaim:

"Impius hæc tam culta novalia miles habebit,
Barbaras hæc fegetes?" VIRG. Eclog. i. v. 71.

"Did we for theſe barbarians plant or ſow?
On theſe, on theſe our happy fields beſtow?"

In the city of Hanau, Ancillon found an aſylum; and here he had an opportunity of exerciſing his miniftry, at the requeſt of the French church, with great acceptance, till the jealouſy of the other two miniſters of the church, excited by his popularity, rendered his ſituation extremely uneaſy, and induced him to withdraw from Hanau, and to retire to Frankfort. With a view to the ſettlement of his family, he ſoon afterwards removed to Berlin, where he was favourably received by the elector of Brandenburg, and obtained the charge

charge of a French church. In this situation he remained, enjoying the comfort of seeing his children and other relations well established, and supporting the character, which he had maintained through life, of a learned scholar, an excellent minister, and in all respects a truly worthy man, till death finished his course in the year 1692. His literary works are few. In 1657 he published, at Sedan, in 4to. "A Relation of the Controversy concerning Traditions, held between the Author and M. Bedacier, a Doctor of the Sorbonne." At Hanau he printed in 1666, "An Apology for Luther, Zuinglius, Calvin, and Beza." He also wrote, "The Life of William Farel, or the Idea of a faithful Minister of Christ," of which only a surreptitious copy was printed in Holland. Some of his learned conversations were published by his son in a miscellany, mentioned in the next article. Gen. Dict.

ANCILLON, CHARLES, an advocate, the son of the subject of the last article, was born at Metz in 1659, and was a learned and zealous defender of the Protestant cause. After the revocation of the edict of Nantes, he was commissioned by the reformed at Metz to solicit at court an exemption in their favour; but he only succeeded in obtaining a mitigation of the treatment of his persecuted brethren. At Berlin, whither he removed, he was appointed inspector of the tribunal of justice, instituted for the French in Prussia, historiographer to the king, and superintendent of the French school. In this city he died in 1715, at the age of 56 years. He wrote, in French, "An History of the Establishment of the French Refugees in the States of Brandenburg," printed in 8vo. at Berlin, in 1690; "A critical Miscellany of Literature, collected from the Conversations of his father, Minister of Metz," 3 vols. 8vo. 1698; "The Life of Soliman II.," 4to. 1706; "A Treatise on Eunuchs," 4to. 1707; "Memoirs of many literary Characters," 12mo. 1709. Gen. Dict.

ANCINALE, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Calabria Ultra; seven miles south-south-east of Squillace.

ANCISA, one of the chief places in the Val di Arno in Tuscany.

ANCISTRUM, from *αγκυρον*, a hook, in *Botany*, a genus of the *dianthia monogynia* class and order, and of the natural order of *rosaceae*, Juss. Its characters are, that the calyx is a perianthium one-leafed, (four-leafed, H. K.) turbinate, truncate, four-toothed, teeth cylindrical, awned, erect, terminating in four-revered hooks; corolla (none, H. K.) superior, one-petalled, funnel-shaped with a very short tube, and a spreading quadrifid border; the divisions nearly equal, obtuse, of the length of the tube; the *stamina* have filaments fastened to the base of the tube, longer than the corolla, capillary; anthers roundish; the *pyllium* has an oblong germ, filiform style of the length of the corolla; stigma pencil-shaped; *pericarpium* none, but the calyx, in the bottom of which is the fruit (a drupe, dry, hispid, one-celled, H. K.), the seed single and oblong. Martyn reckons three, and Gmelin two species. 1. *A. decumbens*, (*A. asperinæfolium* of Forst. Gen. *A. diandrum* of Forst. fl. Austr. *A. sanguiforbæ* of Linn. Suppl.) "with stems decumbent, peduncle scape-form solitary, flowers in a globular head, leaflets wedge-form, deeply serrate, hoary beneath, seed covered with the thickened calyx." It resembles burnet in the herb and manner of flowering, and is remarkable for the yellow awns to the calyx, like fox's nails; a native of New Zealand. 2. *A. lucidum*, shining A., "with stems subdemerged, peduncles scape-form, spikes ovate, and leaflets oblong, quite entire, acute, and subsaccate." This species is a native of Falkland Islands, and introduced in 1777 by Dr. J. Fothergill.

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It flowers in May and June. 3. *A. latebrosum*, (*agrimonia decumbens* of Linn. Suppl.) hairy A. "with stems demerged, duncles scape-form, spikes elongate, leaflets oblong, gashed, and villose, and fruits armed on every side." The calyx closes as the seed ripens, and thickens into an ovate globose, fibrose, white-tomentose bark, armed every way with short bristles, thickening outwardly, and having four revered barbed little prickles. The seed single, ovate-globose, produced at top into a boss, smooth and pale; covered with a thin membranaceous skin, and on the outside of that with a coriaceous, hard, thick, integument, resembling a shell. Martyn's Miller.

ANCIZAN, in *Geography*, a town of France, in the department of the Higher Pyrenees, and chief place of a canton in the district of La Barthe de Neste, five leagues south-south-east of Bagneres.

ANCLABRIS, in the *Religion of the ancient Romans*, denoted a table in temples, whereon the priests eat their portion of the sacrifices and oblations.

ANCLACÆ, in *Ancient Geography*, a people placed by Ptolemy in Asiatic Sarmatia.

ANCLAM, in *Geography*, a town of Germany, in the Circle of Upper Saxony and duchy of Pomerania, situate on the river Peene, in a fertile country. On one side of it are swamps and meadows, with a stone-dyke, a quarter of a German mile in length, and on the other deep moats and walls. It has two parish churches, has a good trade both by land and water, and has thriven under the Prussian government. It is the capital of the circle to which it gives name, and the territory belonging to the town is near three German miles long, and contains 17 villages and two farms. It is eight leagues south of Gripwald, and 14 north west of Stettin. N. lat. 54°. E. long. 14° 9'.

ANCLE. See ANKLE.

ANCLOTE Point, in *Geography*, on the peninsula of California, coast of the North Pacific Ocean, lies in N. lat. 30°. and W. long. 116°, southerly from the town of Veliceta, and north-east from the small island of Guadaloupe.

ANCOBARITIS, in *Ancient Geography*, a country of Mesopotamia, known to Ptolemy, and placed by Strabo in Arabia Deserta.

ANCOBER, ANKOBAR, COBRE, or GOLD RIVER, in *Geography*, a river of Africa, which runs into the Atlantic, between the Gold Coast and the country of Axim. At its mouth is a good harbour. N. lat. 4° 48'. W. long. 45°.

ANCOBER, or ANKOBAR, a town and district of the Gold Coast, extending from north to south about 18 or 20 leagues along the river of this name. In this small kingdom there are women who never marry, but devote themselves, by certain ceremonies of an infamous kind, to public prostitution.

ANCOCUS Creek, in *Geography*, lies in New Jersey, being a water of the Delaware, six miles south-west from Burlington. It is navigable 56 miles, and considerable quantities of lumber are exported from it.

ANCOE, a small town of South America, three leagues from the city of Guamanga.

ANCON, in *Anatomy*, denotes the curvation or flexure of the arm, whereon we rest in leaning.

This is otherwise called OLECRANUM.

ANCON, in *Architecture*, is used to denote the corners or quoins of walls, cross beams, or rafters.

ANCON is also used in the *Ancient Architecture*, to denote the two parts or branches of a square, which meet in an angle resembling the letter L.

ANCON is also used by Vitruvius, to denote a kind of *mensule*, or tables before doors, bent somewhat after the manner of *volutæ*, so as to resemble the letter S.

In this sense *ancons* amount to the same with what the Greeks call *αγκυλίδι, prothyrides*.

ANCON is particularly applied in the *Ancient Architecture* to the brackets, or shoudering-pieces, called CONSOLES and CORBELLS by the moderns.

ANCON was also used by the Carthaginians, to denote a dark prison or dungeon. Suidas mentions one of this kind, in which Gelimer used to put all who displeas'd him; from which Belisarius delivered many merchants of the east, whom the tyrant intended to put to death.

ANCON is also applied to the angles or flexures of rivers; sometimes also to the tops of mountains.

ANCON, in *Ancient Geography*, a town of the Leuco-Syrians, in Cappadocia. M. d'Anville places it upon the Euxine Sea, between Amifus to the west, and the Promontorium Heracleum to the north-east.

ANCONA, a town of Italy, in Picenum to the north, situate on a small isthmus, which joins the promontory of Cumerium to the continent. As *αγκυλ* denotes curvature, its name is probably deduced from its situation. Some say that it was first built by the Syracusans, when they fled from the tyranny of Dionysius, towards the year 405 before Christ. It was famous for the beauty of its dyeing, and the purple of Ancona was only inferior in estimation to that of Phœnicia. It became a Roman colony probably after the war of Tarentum, about the year of Rome 485, when the consul P. Sempronius conquered the Picentines, and extended the frontiers of the Roman possessions as far as Ælis. The emperor Trajan constructed a good port, in commemoration of which a triumphal arch of fine veined marble was erected to him on the mole, which stills makes a beautiful appearance. Ancona was ineffectually besieged by the Goths under Totila, A.D. 551; but it was taken by Ariulf, king of the Lombards, and duke of Spoleto, in 592. In 839 it was taken and pillaged by the Saracens. It is now the capital of a country of the same name; a free port, with a convenient harbour, secured by a strong mole, on which are generally mounted 8 or 10 guns; and its chief exports are grain, wool, and silk. It is the see of a bishop, immediately under the pope. The Jews are very numerous in Ancona; however they live in a particular quarter of the town, and are obliged, by way of distinction, to wear a bit of red cloth in their hats. The exchange in Ancona has a beautiful front, and over the entrance an equestrian statue; and within it is a lofty spacious apartment, in which, among other statues, are those of Faith, Hope, Charity, and Religion. The inhabitants of Ancona, says Keyser (vol. iii. p. 209.), especially the female sex, so far excel those of the other parts of Italy, in shape and complexion, that they seem to be a different race of mankind. In the shallows near Monte Comero, or Conaro, about 10 Italian miles from Ancona, there is a singular species of testaceous fish, called ballani, or ballari, which are found alive in large stones. The shell of this fish is thin, rough, and of an oblong figure, resembling a date; and hence they are called Dattili del Mare, or sea dates. These ballari are laid within the mole, and come to perfection. In fishing for them, such stones are selected as have the surface full of little holes, which indicate that these fishes have insinuated themselves into them. When the stones into which the spawn has penetrated are taken, several of these fishes are found in them. Both the fish and its juices are so luminous in the dark, that one may see to read by the light they afford; and even the water in which this fish has been squeezed, when put in a glass, emits an effulgence which lasts from eight to twelve hours. Great quantities of the ballari are brought to Rome, where they are reckoned "beccone di cardinale," or, dainties fit for a car-

dinal. Oysters are preserved here alive in sea-water for several years; but the oysters of Ancona, though large, are flabby and unpalatable. Here is also a kind of sea-craw fish, called noechia, resembling our lobsters, but of a more delicate flavour. In the harbour of Ancona there is also a fish called the sepi, which has a longish white shell on its head: these shells are often found along the shore, and, when pulverized, are used for cleaning plate. Ancona is 107 miles north-north-east of Rome. N. lat. 43° 38'. E. long. 13° 30'.

ANCONA, *Marquisate of*, a province of Italy, in the pope's territories. It is bounded on the north and east by the Adriatic, on the south by Umbria and Abruzzo Ultra, and on the west by the duchy of Urbino. The air is indifferent, but the soil is fertile, particularly in hemp and flax, and there is plenty of wax and honey. The province is about 22 leagues in length, and 16 in breadth: and along the coasts towers are erected, and furnished with cannon, in order to keep off the corsairs. The chief rivers are the Fiumelino, Aspido, Tingo, or Tenna, Ragnola, and Tronto. The principal towns are Ancona, Ascoli, Camerino, Fermo, Jesi, Loreto, Macerata, Montalto, Osimo, &c.

ANCONÆUS, or ANCONIUS *Musculus*, in *Anatomy*, arises tendinous from the back part of the external condyle of the os brachii; it becomes fleshy, and terminates by a thin fleshy attachment in a ridge on the outer and back part of the ulna. Its use is to assist in extending the forearm. Formerly all the extensor muscles of the elbow were called anconci, and that which now exclusively bears the title was the anconæus quartus, or minor.

ANCONY. See IRON, *Manufacture of*.

ANCORARIUS MONS, in *Ancient Geography*, a mountain of Africa, in the Hither Mauritania. According to Pliny the wood which grew upon it had the smell of citron, and was called citrus.

ANCOURT, FLORENT CARTON D', in *Biography*, an eminent actor and comic writer, was born at Fontainebleau, in 1661, and educated at the Jesuits' college in Paris. Destined for the law, he became an advocate at the age of 17 years; but falling in love with an actress, whom he married in 1680, he then devoted himself to the stage as an actor; he excelled in the graver comic parts; and, as a dramatic writer, his particular line was humorous farce. He was distinguished by his exhibition of rustic characters; his dialogue, though filled with the jargon of the peasantry, was gay and lively, and abounded with smart sallies; and his plots generally consisted of little incidents, contrived to ridicule the follies of the day. His pieces were popular, and attracted numerous auditors. His prose was much better than his verse. His company was much sought by the gay and great, and Louis XIV. was fond of him. In 1718 he quitted the theatre, and retired to an estate in Berry, where he employed himself in those religious duties, pertaining to his spiritual safety and welfare, with which, according to the maxims of the Roman Catholic religion, the profession of a player is incompatible. He died in 1726, and left two married daughters. His works were printed in 1729, in nine vols. 12mo. A selection of the best of them has been published in three vols. 12mo. Gen. Dict.

ANCRE, in *Geography*, a small town in France, in the province of Picardy, upon a small river of the same name, five leagues north-east of Amiens. N. lat. 49° 59'. E. long. 2° 45'.

ANCRE'E, ANCREFD, or ANCHORED, in *Heraldry*, is said of a cross where its extremities turn back like the flukes of an anchor, or terminate like the *cross patonce*, but in a sharper turn. Care must be taken not to mistake the cross ancrée for the cross moline, which is of the same form, and by some of the old heralds called a cross ancrée, or anchored.

ANCRINA,

ANCRINA, in *Ancient Geography*, a town of Sicily, according to Ptolemy, at some distance from the sea coast.

ANCTERES, in the *Ancient Medicine*, seem to have been the same, at least to have answered the same uses as our **SUTURES**.

Some also speak of a strong kind of sticking plaster under this denomination.

ANCTERIASMUS, in *Medicine*, the operation of applying a *fibula* to close the two patent lips of wounds.

This is also called by Latin writers, *infibulatio*.

ANCTERIASMUS is more particularly used to denote the passing a *fibula* through the prepuce of the ancient stage-players and buffoons.

ANCUAH, in *Geography*, a town of the province of Alovahat, to the north of Egypt and of the Thebaid.

ANCUBITUS, among *Ancient Physicians*, denotes a disease of the eyes, wherein there is an appearance of sand, or little stones sprinkled on them.

This is otherwise called **PETRIFICATION**.

ANCUD, in *Geography*, an archipelago or cluster of islands in a part of the Pacific Ocean, between the coast of Ancud, that of Chili, and the island of Chiloé.

ANCUD is a name given to a coast of South America in the province of Chili, between the archipelago of Ancud to the west, the Andes to the east, the country of Osorno to the north, and the Terra Tagellanica to the south.

ANCUROPOLIS, or the city of Anchors, in *Ancient Geography*, was one of the cities of the Heptanomis in Egypt, mentioned by Ptolemy, and so called from a neighbouring quarry, out of which stone anchors were cut.

ANCUS, a name for such as have an arm bent crooked, so that they cannot extend it. See **ANCI**.

ANCUS MARTIUS, in *Biography*, the fourth king of Rome, was grandson of Numa Pompilius by his daughter Pompilia and Marcus his relation, the son of that Marcus who persuaded Numa to accept of the kingdom, and who afterwards killed himself, because he was not chosen in his room. His name Ancus was derived from the Greek word ἀγκύων because he had a crooked arm, which he could not stretch out to its full length. He succeeded Tullus Hostilius, according to the common computation, in the year before Christ 634. He began his reign by endeavouring to restore the religious ceremonies, which had been neglected in the time of his predecessor, to their former use, to revive husbandry, and to promote the arts of peace. Nevertheless his natural disposition was martial, and he gained various advantages for his country by his arms. The Latins gave him an early opportunity of exercising his military talents. Having violated the treaty which had been made with Tullus, by invading the Roman territories, Ancus declared war against them with all the religious solemnity enjoined by Numa, and took the field with an army consisting entirely of new-raised troops. After having taken several cities, he defeated them in a pitched battle, obliged them to sue for peace, and obtained a triumph at Rome for the advantages which he had gained. He also recovered Fidenæ, which had revolted; defeated the Sabines, and obtained victories over the Veientes, for which a second triumph was decreed him by the senate. During his reign Rome was greatly enlarged, by carrying the walls round the Aventine Hill, and inclosing the hill Janiculum, which was on the other side of the Tiber, and which was now made a fort of citadel for Rome. A communication was also opened between this citadel and the city, by means of the bridge Sublicius, which Ancus erected over the Tiber, and that part of the river which washes the foot of the Aventine Hill. He also built a large prison in the Roman forum. Ancus likewise extended the

territories of Rome as far as the sea, and established the port and city of Ostia, in order to secure to his subjects the advantages of trade. About this town he caused many salt-pits to be dug, and distributed salt among the more indigent classes of his subjects. He rebuilt the temple of Jupiter Feretrius in a very magnificent manner; and having spent the latter years of his reign in improving the city, and enriching its inhabitants, he died, after a prosperous reign of 24 years. Livy, lib. i. c. 32, 33. t. i. p. 134—144. Dion, Hal. lib. iii. t. i. p. 170, &c. ed. Oxon.

ANCY, in *Geography*, a small town of South America, three leagues from the city of Guamanga.

ANCY LE DUC, a town of France, in the department of the Saone and Loire, one league north of Marcigny les Nonains.

ANCY LE FRANC, or **ENCRE**, a town of France, in the department of the Yonne, and chief place of a canton, in the district of Tonnerre, eight leagues east of Auxerre, and three south-east of Tonnerre.

ANCYLE, in *Antiquity, denotes a small kind of brazen shield, supposed to be the shield of Mars, and said to have fallen from heaven into the hands of Numa Pompilius, at the same time that a voice was heard, that Rome should be mistress of the world while she preserved that shield. Though there was but one ancyle that fell from heaven, yet there were twelve preserved; Numa, by the advice, as it is said, of the nymph Egeria, having ordered eleven others, perfectly like the first, to be made by Veturius Mamurius, so that if any should attempt to steal it, as Ulysses did the Palladium, they might not be able to distinguish the true ancyle from the false ones. These ancylia were preserved in the temple of Mars; and were committed to the care of 12 priests or *falii*, instituted for that purpose. They were carried every year, in the month of March, in procession all round Rome; and the 30th day of that month they were again deposited in their place.*

ANCYLE, see **ANCHYLOSIS**.

ANCYLOBLEPHARON, or **ANCHYLOBLEPHARUM**, (from ἀγκύλη, *hæmus*, and ἔλφαρον, *palpebra*) in *Surgery*, an adhesion of the eye-lids. This may either be a natural or a congenite defect, or it may be produced by accidents, such as burns, violent inflammations, and ulcers. The eye-lids may either adhere to each other only, or they may adhere to the eye-ball itself; and sometimes both kinds of adhesions are present together.

There are properly three degrees of this disease. The *first* is, when the eye-lids are only glued together by means of pus or thick mucus, as happens in many inflammations of the eye, particularly in the suppurating inflammation, whilst the patient is asleep; also in the small-pox, when the eye-lids have been kept close for several days in consequence of the general swelling of the face; in such cases, therefore, it is also termed the *spurious* species of the disease. The *second* degree is when the edges of the eye-lids not only adhere together, but are even connected by means of a cicatrix. The *third* degree is where the eye-lids have also formed an adhesion with the conjunctive coat, or the ball of the eye. This third degree is also particularly termed **SYMBLEPHARON**. These two last degrees are accounted the *genuine* species of the disease.

In the first degree, when the eye-lids are glued together by a purulent or tough mucous matter, we must employ emollient applications. The eye-lids should be moistened with a luke-warm mixture of milk and water, or with an infusion of rad. althææ, or with an emollient decoction, applied upon a piece of linen, till they spontaneously separate from each other. We may also rub them gently with an ointment consisting of syr. papav. ol. Amygd. and camphor, and after-

wards apply an emollient poultice of lb. sal. sem. lini and milk. Should these remedies not produce the desired effect, we may cautiously introduce a probe with a knob between the eye-lids, and thereby prevent their adhesion.

In the second degree the edges of the eye-lids either adhere together at all points from one canthus to the other, so as to form a perfect concretion, or they are only more or less connected together at one or the other angle of the eye. In the first case, the patient is entirely deprived of sight; in the second he can see by turning the ball of his eye sideways, so that if the disease be not speedily removed, squinting may easily be the consequence. The method of cure in this disease is to separate the eye-lids from each other by means of an incision.

In this operation the surgeon must use great caution in directing his instrument, so as to avoid the ball of the eye, and prevent its injuring the eye-lid in such a manner as to lay bare the tarsus, the consequence of which might be a very troublesome ulceration. This may be accomplished without difficulty, when the eye-lids do not entirely adhere together, but are still separate at some point; as for example, when there still remains an opening at the internal canthus. Some use for this purpose a small grooved probe, which they introduce between the eye-lids, and then carry along the groove a thin and somewhat crooked-bladed knife, or a small pair of scissors, or only a lancet. But in preference to the probe we may use, as a more convenient and safe instrument, a small knife, with a straight back, but somewhat curved at the edge, and terminating at the point in a very small probe with a knob, about two lines in length.

For performing the operation the patient is placed upon a chair, in a convenient posture; an assistant secures his head, and, at the same time, draws the superior eye-lid upwards, whilst the surgeon draws the inferior downwards with two fingers, or else draws it with a small forceps downwards, and, at the same time, off from the eye. Sometimes the surgeon himself may stretch both eye-lids from each other with the fingers of one of his hands. With the other hand he introduces the scalpel abovementioned under the eye-lids, in such a manner, that the back is directed towards the ball of the eye, and the edge to the place where the preternatural adhesion is situated; that is, to the interval between the two edges of the eye-lids, or between both rows of eye-lashes, which frequently remain uninjured by the disease, pushes it forwards, and thus divides the preternatural adhesion. In case of necessity he may also use a small pair of eye-scissors, though this instrument is not so safe and convenient as the blunt-pointed scalpel.

When the eye-lids are entirely closed they must first be opened at some external point, by drawing out the skin into a cross fold, and introducing a lancet into it, so as to form an aperture through which a scalpel or probe may be introduced; which being done, the rest of the operation is performed after the manner already described. But lest the ball of the eye might be injured, the first aperture should be made with caution, and always either at the inner or outer canthus of the eye, for fear of wounding the transparent cornea, which might thereby be rendered opaque. The safest method of proceeding will therefore be to draw at the same time the eye-lids from each other. This incision, however, but seldom becomes necessary; for even in a complete adhesion an opening may always be perceived at the inner canthus of the eye, through which a scalpel or probe may be introduced. When the puncta lacrymalia are likewise obstructed, a species of fistula lacrymalis remains after the operation, unless the puncta can be opened. See FISTULA LACRYMALIS.

When the division of the preternatural adhesion has been per-

formed, we should apply to the eye a piece of very fine soft linen spread with Goulard's cerate, or some other cooling ointment; and after the first dressing we should daily rub between the eye-lids a quantity of ointment made with fresh butter and *flor. zinci*, or *tulia*, either with or without bals. Peruv. or else some faturnine ointment. The patient should likewise repeatedly open and move his eye-lids during the day; and in the first night after the operation he should let himself be frequently awakened, in order to prevent the formation of a new adhesion. In this, as in all other operations on the eye, we should do all that is in our power to prevent inflammation, and to relieve any that may have taken place.

But, before we operate upon a complete adhesion, we should carefully examine whether the ball of the eye be perfectly sound, and whether the eye-lids have not formed adhesions with the ball of the eye also; which may happen in cases of burn, or when quicklime has fallen into the eye, in which cases not only the edges of the eye lids, but the ball of the eye itself is generally injured, and often the cornea rendered entirely opaque. For when the cornea is entirely opaque, and the eye-lids adhere not only with each other, but also with the ball of the eye; when the patient perceives no sensation of light while a candle is held close to his eye in a dark room, and in general cannot distinguish light from darkness; when the eye-ball is felt under the eye-lids small and collapsed; and when from the cause, by which the disease has been occasioned, there is reason to suspect that the cornea has been rendered opaque—the patient's sight cannot be restored by an operation, which consequently will be superfluous. We may conclude that the eye-lid adheres to the ball, and that an operation will consequently be difficult, if not impracticable, when the eye-lid cannot be moved backwards and forwards upon the ball, or when we feel that the patient cannot move the ball of his eye, or when, in moving it, the eye-lid contracts itself into wrinkles. However, when the eye-lid does not adhere throughout, but only at particular points, and not on the cornea, to the ball, it is worth our while to attempt the operation, for which purpose we must first draw the eye-lid asunder, and then separate the adhering lid from the ball.

In the third degree, which consists in a preternatural adhesion of the eye-lids with the ball of the eye, there sometimes also exists an adhesion of the edges of the eye-lids with each other; in many cases, however, the adhesion subsists only between the eye-lids and the ball, forming what is termed *SYMBLEPHARON*. Of such adhesions several varieties are observed; they are sometimes firm, or fleshy; at others, loose or membranous. Either the whole surface, or a single part of one or the other eye-lid adheres to the ball. In the first case, which is very rare, the patient is altogether unable to open his eye; in the second he can only open his eye-lids partially, and see when he turns the ball of the eye to the aperture; in which case he may easily become subject to *STRABISMUS* by habit. The adhesion of the upper eye-lid occurs far more frequently than that of the lower.

The separation of the preternaturally united parts can here be performed only by the knife. A small crooked knife, formed like a probe, at the point, has been proposed for this purpose. In performing this operation, we must take care that we may not injure either the eye-lid or the ball of the eye, which it is the more difficult to avoid, as we frequently cannot see how we carry the knife, on account of the hæmorrhage. By pressing the ball of the eye with the blade of our instrument backwards from the eye-lid, and at the same time drawing, or letting an assistant draw the eye-lid forwards from the ball, we may in many cases not only perform a part of the separation without cutting; but also, if in-

cision should be necessary, we may use our instrument with greater safety, and without injuring any of the parts. With this view Mr. Kaltsehmidi has recommended to use a small lancet in such a manner, that its surface lies firm upon the surface of the eye, the edge being steadily directed against the fibres which form the adhesion, so as to divide them more by pressure than by moving the lancet to and fro. Moreover, we ought, in performing this operation, to be particularly cautious not to injure the inner surface of the eye-lid, it being better to cut away a part of the conjunctiva of the eye, than to injure the eye-lid itself. But when the eye lid adheres to the cornea we must spare the latter, and press the knife more upon the eye-lid. For performing this operation a steady and experienced hand is particularly necessary.

This operation, however, is always very difficult, and it will be attended with no benefit when the cicatrification is firm and fleshy, and when the eye-lid adheres closely to the ball. Neither will it be productive of any benefit when the eye-lid, though adhering only at one part, is connected with the cornea, and the adhesion is of a muscular nature; so that it is highly probable the cornea will be rendered opaque, unless we can hope afterwards to restore its transparency. In this case, however, as in every case where the adhesion is muscular and cicatrified, it is very difficult to prevent the parts from forming new adhesions with each other. It is, therefore, only in those cases where the adhesion is loose and membranous, and only a small part of the ball connected with the eye-lid, and that at the side, that the operation can be performed with facility, and with a sure hope of a fortunate event; though even here it is often very difficult to prevent a new adhesion from taking place. When the adhesion is very loose, we may frequently dispense with cutting instruments, and effect the separation by means of a small blunt knife, shaped like a SPATULA.

In order to prevent the formation of a new adhesion, after the operation, some introduce lint into the eye, others a piece of linen or fine leather in the form of a crescent, others a thin, smooth plate of ivory, lead, or horn, shaped so as to correspond with the form of the eye, or only a thin, flat piece of wax. All these foreign substances, however, when introduced between the ball and lid of the eye, irritate, press, and inflame the eye; neither do they keep their situation. It is therefore better to direct the patient frequently to roll the ball of his eye, and not to sleep too long at a time; and when the hæmorrhage has ceased, frequently to introduce upon the inner surface of the eye, with a hair pencil, a little cream, oil of almonds, saturnine or tutty-ointment; or to drop, into the space, between the lid and the ball, some gently astringent and drying collyrium. We may also (as Heister advises) introduce repeatedly towards the termination of the cure a blunt probe between the lid and ball of the eye, and move it gently backwards and forwards; but this must be done with the utmost caution. Any remaining opacity of the cornea must be treated with the proper remedies.

The method of treatment, practised by Fabricius Hildanus (Observat. Centur. v. Obs. 7.) might also in some cases be attempted. His method was gently to introduce a crooked probe at the inner angle of the eye, under the upper eye-lid, between the lid and ball of the eye, till its point projected out of the outer canthus. He then fastened a fine silk thread to the point of the probe, and introduced the probe again in the same manner as before; and the ends of the thread he tied together under the eye, and fastened a small lump of lead to them. During the day time the lead was suffered to hang to the thread, but it was taken off when the patient went to bed. By means of this thread, and the weight suspended to it, the adhesion was separated

in the space of nine days, the eye-lid and ball of the eye completely recovered their motion, and nothing of the disease remained behind except a small speck upon the cornea.

Vide C. F. Kaltsehmidi, Diss. de pueri xii. annorum anchylopharo laborante curato. Jen. 1764. Resp. C. G. Barchowitzi.—G. I. Badendyk, Diss. de Anchylopharo. Jen. 1785.

ANCYLOGLOSSUM, or ANCHYLOGLOSSUM, in Surgery, (from ἀγκύλη, hamus, and γλῶσσα, lingua) *Anchyloglossæ, Anchyliosis*, and adhesion of the tongue, or the being TONGUE-TIED. This term is applied to that mal formation of the parts, in which the frenulum of the tongue confines its apex too much, and impedes its motion, either by its being continued too far forwards towards the extremity of the tongue, or by its being too short, considered in its perpendicular direction. Both these defects are generally natural ones, and are therefore most commonly observed in new-born infants. However, even in adults, the frenulum may sometimes be shortened, and the motion of the tongue impeded in consequence of a wound, ulcer, &c. We discover the existence of this defect, when we find that we cannot introduce the finger under the tongue, and raise it up; when the infant neither sucks the finger, when it is introduced into its mouth, nor the nipple of the mother; when the child, after it has begun to speak, cannot properly pronounce the letters which are principally articulated with the apex of the tongue, namely, *f, l, r*, (a very complete adhesion of the tongue, whether by means of the frenulum, or any other preternatural connecting substance, may even occasion complete dumbness); and when the apex of the tongue cannot be drawn forwards, beyond the teeth, to the gums or lips.

The cure of this defect consists in the operation of dividing the frenulum, which, however, is very frequently performed without necessity, and to the very great detriment of the infant. (Fabricius ab Aquapendente) Chirurg. Operat. cap. xxxvi.) asserted, that among a 100,000 children that were born, scarce one actually required this operation. See also Jourdain on the diseases of the Mouth, vol. ii. p. 594. and 602.) For only in that very rare case, in which the infant is unable to suck, in consequence of the immobility of the tongue, are we authorized and obliged to perform the operation. Should even the frenulum be something too short, and the apex of the tongue not sufficiently moveable, so that there is cause to apprehend that the child, when he learns to speak, will not be able properly to articulate the lingual letters, we ought, provided he be not prevented from sucking by that defect, to defer the operation to a future period, for it is unnecessary to perform it at present; and should it afterwards become necessary, for the purpose of enabling the child to articulate his words properly, it may then be performed with greater facility, safety, and accuracy; besides, that the frenulum often becomes spontaneously elongated, and sufficiently extended in consequence of the mere motion of the tongue. As there are various other causes, which may be impediments to the infant in sucking, we must not always look for the fault in the state of the frenulum. Nay, though we should even find the tongue actually immoveable in an infant that either cannot or will not suck, we are not authorized immediately to suppose that the defect of the frenulum is the cause of it, and so undertake the operation without farther examination. For we sometimes find that preternatural membranes and ligaments, which proceed from the lateral edges of the tongue, and connect it with the gums, were the cause of the impeded motion of the tongue; and that, after these have been divided, the infant is able to suck. In new-born infants the tongue sometimes adheres so strongly to the gums, by means of a viscid mucus, that

that the patient cannot suck, nay, scarcely draw breath; this mucus may easily be removed by means of a spatula.

In performing the operation, we have principally to take care to make the incision into the frenulum of the proper length; for if we make it too long, that is too far on towards the root of the tongue, the tongue becomes too movable, and another defect, of which we shall treat hereafter, is produced; whilst, if we do not make it long enough, the tongue does not acquire sufficient mobility, and the intention of the operation is not completely answered. However, it is always better rather to make the incision too short than too long, as in the former case the operation may be repeated, and the division made longer, whilst, in the latter, the fault cannot be remedied. Moreover, we ought always to make the incision as much as possible in the middle, between the tongue and the subjacent soft parts, and avoid the blood-vessels, nerves, and salivary ducts.

When it is determined to perform the operation, we proceed in the following manner: The patient being properly secured, and his mouth opened, we introduce the common mouth-spatula under the apex of the tongue, in such a manner that the frenulum lies in the slit of the spatula. Instead of this spatula we may also use a grooved probe, with a flat and slit handle. Some recommend, instead of the spatula, to use a small two-pronged fork, with knobs at the points. With one or other of these instruments, which we hold in the left hand, we raise the apex as much as possible, and stretch the frenulum. This manœuvre, as well as the rest of the operation, may be facilitated by applying external pressure under and behind the chin, by which means the soft parts under the tongue are elevated. We then divide the frenulum with a round-pointed pair of scissors, which we hold in our right hand. The crying of the child greatly facilitates the operation; in performing which we may also compress his nostrils, which will compel him to keep his mouth open.

Various other complicated instruments have been proposed for performing this operation, but they may all be dispensed with, as none of them have any advantage over the more simple ones, the spatula, and scissors: indeed we have often performed the operation with no other instrument than the scissors. When the frenulum has been properly divided, there is seldom any necessity for employing any peculiar treatment; it may, however, be useful, during the first period after the operation, to draw a linen rag, neatly spread with fine-pounded sugar or honey, several times a day under the tongue, in order to prevent the formation of a new adhesion. Sometimes also it happens, especially when the frenulum is uncommonly fleshy, or has been divided too far back, that a hæmorrhage ensues, which, though of itself insignificant, may frequently be rendered dangerous, nay, even fatal in consequence of the sucking usual with new-born infants, upon awaking, when the breast is not soon given them. This accident may be prevented by attending to the infant for the first twenty-four hours after the operation, and as soon as it awakes, taking it up, and laying it to the breast till it falls again asleep. But there is still greater cause to apprehend a dangerous hæmorrhage, when, through want of the proper caution, any considerable blood-vessel under the tongue has been injured. This must immediately be stopped by strong astringent remedies, *e. g.* concentrated vinegar, spir. vin. rectif. or Theden's aq. vuln. with which small compresses should be wetted, and laid under the tongue; or with blue vitriol, or agaric, pressure being at the same time applied. In order to prevent the fatal hæmorrhage, which might afterwards supervene, it is necessary that the child should be attended to during the first days after the operation, that we

may see whether it moves its lips or appears to suck or swallow any thing; and when it does so, we must immediately examine whether any blood is discharged, in order that we may be able immediately to stop the hæmorrhage. We have known a very troublesome excrescence arise under the tongue of an infant, after it had been cut too deeply by an officious nurse.

The frenulum may also, in some cases, possess too great a facility of motion; namely, when, by a fault of the original conformation it is too long in its perpendicular direction, or when it does not extend far enough from the root towards the apex of the tongue. This fault is not to be discovered till the child begins to speak. Little or nothing can be done to remedy it, though it sometimes spontaneously disappears as the child grows older. A similar defect is produced when the frenulum has been divided without necessity, or when, in performing the operation from proper indications, the incision has been made too long. When either this or the preceding defect is present in a high degree, it sometimes happens that the infant, which is in the habit of sucking as soon as it awakes, sucks down the apex of its tongue, and is suffocated. If we discover the accident in time, and extricate the tongue with our finger, the infant immediately recovers: it will, however, be necessary that we should prevent the recurrence of a similar accident. This we may do by two different means. As soon as the infant awakes, and begins to suck, we must either let it have the breast immediately, or we must put a finger or some other substance into its mouth till the breast can be given it. When it has been weaned it gradually loses the habit of sucking its tongue, and then there is no more danger to be apprehended. When circumstances do not admit of such attention being paid to the infant, or when the child, after it has been weaned, still retains the habit of sucking its tongue, we may prevent the tongue from being drawn down into the throat, by applying an ivory stick between the jaws of the child, which is to be fastened behind the neck and under the chin with strings. With adults, whose frenulum is either too loose, or does not extend far enough towards the tip of the tongue, we may employ the tongue-bandage of M. Petit or Pibrac, of which we shall take notice under the article *WOUNDS of the Tongue*.

Finally, by frequent and forcible suction of the retroverted tip of the tongue, adults may sometimes stretch, elongate, and relax their frenulum, which before was quite perfect, in such a manner as to produce all the defects above-mentioned.

Instead of a frenulum we sometimes find, in infants, a fleshy excrescence under the apex of the tongue, which frequently is so large as to prevent both suction and deglutition, and can only be removed by excision. In this operation we have chiefly to apprehend the hæmorrhage, which sometimes is so profuse as to occasion the death of the patient. As the remedies above-mentioned are not applicable in such cases, we ought to employ the actual cautery, or sometimes we may succeed with compression. It might, perhaps, be advisable to cut out, at first, only a part of the excrescence, so as to enable the infant to suck and swallow; after which, as he grows older, the rest of it may be extirpated with greater ease and safety, if it produce any inconvenience. Both in children and adults, suction, deglutition, speech, and mastication are sometimes impeded by painful excrescences on the frenum, which ought to be removed by cutting, tying, or caustic. Ulcers, fistulas, and encysted tumors, which are frequently found on the frenulum, must be treated in the same manner as when situated in other parts of the body.

Vide Chr. Car. Lang. *Diff. de frenulo linguæ, ejusq. incisione*—Præf. Juit. Chr. Loder. Jenæ, 1785. I. F.

Schweighauser Diff. de Affectib. linguæ. Argentor. 1789.

ANCYLOMELE, ἀγκυλομήλη, from ἀγκυλος, *crooked*, and μέλη, a *probe*: a surgeon's crooked probe or a probe with a hook.

ANCYLOSIS. See ANCHYLOSIS

ANCYLOTOMUS, (from ἀγκυλωτός, *uncut*) Fr. Ancylo-tome. A knife for loosening the tongue. This instrument is no more in use. The term is also applied in general to all crooked-bladed knives.

ANCYLOS, in *Conchology*, a name given by Geoffroy to the PATELLA LACUSTRIS of Linnæus. See LACUSTRIS.

ANCYRA, now called by the Turks ANCOURI, in *Ancient Geography*, a city of Asia Minor, and formerly the capital of Galatia, situate near the small lake Cenaxis, and not far from the river Halys, and belonging to the Tectosagi. Pausanias (Attic. c. iv. p. 12.) intimates that it was founded by Midas, and that it derived its name from an anchor which was found there, and which was preserved in the temple of Jupiter. It was afterwards greatly enlarged and adorned by Augustus, who, on this account, might be deemed the founder of it. In the time of Nero this noble city received the title of the metropolis of Galatia; and it is still populous. Its inhabitants, according to Suidas, were denominated Hellenogalatæ, or Græco-Galli. See ANGORA.

ANCYRA, *Ancyra Abastidis* of Strabo, a town of Phrygia, mentioned by Pliny (l. v. c. ult.) and confounded by Steph. Byz. with the Ancyra of Gallo-Græcia of the preceding article.

ANCYRÆ, a town of Sicily, mentioned by Diodorus Siculus, lib. xiv. c. 49.

ANCYREUM, a promontory of Asia Minor, noticed by Dionysius Periegetes, as situated where the Euxine Sea terminate, and where the Bosphorus commenced.

ANCYROIDES, ἀγκυροειδής; is used by some writers in *Anatomy* for the process or shooting forth of the shoulder-bone, in form of a beak; otherwise called *coracoides*.

ANCZAKRISH, in *Geography*, a river of Podolia, which discharges itself into the Black Sea, near Oczakow.

ANDA, in *Botany*, is a tree of Brasil, found, according to Pison (Hist. Nat. Racened.), in the forests, at a small distance from the sea-coast; the wood of which is spongy and light; the leaf longish, fibrous, and pointed; the flower large and yellow; and the fruit a grey nut, which incloses, under a double rind, two kernels of the taste of chestnuts. The fruit is said to be purgative, and a little emetic: two or three of the kernels are a dose. The Indians extract oil by expression from these kernels, with which the natives anoint their limbs. The rinds of the fruit are esteemed proper to stop a looseness; thrown into ponds they kill the fish.

ANDA, in *Ancient Geography*, a town of Africa, according to Appian.

ANDABATÆ, in *Antiquity*, a kind of GLADIATORS, who fought hookwinked; having a sort of helmet that covered the eyes and even the face.

They were called *andabate*, quasi ἀνάβαται, *ascensores*, because they fought mounted on horseback, or out of chariots. Others derive the word from ἀνά, *against*, and βία, *I go*.

Some say, the *andabate* fought in the dark, or late at night, after the *circensia* were over. There were two men in the chariot, viz. the driver, or *auriga*, and the παραβάτης, who was also called ἀνάβατης, q. d. *adscensor*, or *mounter*; whence by corruption the Latins formed the *andabata*.

It has been disputed among critics whether the *andabatæ* were a people who actually fought blindfold in their wars,

or a set of combatants who only practised this method of fighting for the sake of exercise.

ANDABATIS, in *Ancient Geography*, a town of Cappadocia, according to Antonine.

ANDACA, a town of India, which surrendered to Alexander, but its situation is unknown.

ANDAGUAYLAS, in *Geography*, a jurisdiction of the empire of Peru, in South America, subject to the archbishop of Lima: situate east by south of the city of Guananga, extending between two branches of the Cordillera above 20 miles, and watered by several small rivers. It abounds in sugar plantations, grain of most sorts, and fruits. This province is one of the most populous in these parts; and its climate is partly hot, and partly temperate.

ANDAGYRI, or ANDIGRI, a district of the island of Sumatra, with a populous town of the same name, situate on a river commodious for trade; the chief article with which this district abounds is pepper.

ANDAJA, a river of Spain, in Old Castile, which joins the Duero.

ANDALUSIA, a province of Spain, which formerly comprehended the kingdom of Granada, then called Upper Andalusia; but the name is now appropriated to Lower Andalusia, which is the most westerly province of the southern part of Spain. It is separated, on the north, from Estramadura and New Castile by the Sierra Morena Mountains; on the east, from Portugal by the river Chanca, and on the west, from Algarve by the Guadiana; on the south, it has the ocean, the Straits of Gibraltar, and part of the Mediterranean; and along the south-east it has the kingdom of Granada. Its utmost length from Ubeda to Ayamonte, is ninety leagues, and its breadth about sixty. Its chief cities and towns are Seville, the capital, Baeza, Gibraltar, Corduba, Cadiz, Medina Sidonia, Jaen, Port St. Mary, &c. Its principal rivers are, the Guadalquivir, Xenil, Odier, or Odiel, Guadalate, and Tinto, or Azeche. Andalusia is reckoned the richest and most fertile province of Spain; abounding in exquisite fruits of all kinds, honey, excellent wine, grain, silk, sugar, fine oil, numerous herds of cattle, particularly horses, metals, cinnabar, and a species of quicksilver. The air, though warm, is refreshed by cooling breezes, and the great extent of sea coast is favourable to commerce. The wool of Andalusia, says Keyser, (Travels, vol. iii. p. 20.) is known to surpass all other; though the sheep on which it grows were originally natives of England. The name of Andalusia is applied by the Arabs not only to the modern province, but to the whole peninsula of Spain. Some have derived the name from Vandalusia, the country of the Vandals; but the Handalusia of Casiri, which signifies in Arabic the region of the evening, or of the west, or the Hesperia of the Greeks, is perfectly apposite. Gibbon's Hist. vol. ix. p. 467.

ANDALUSIA, New, a district of South America, in the eastern part of the province of Terra Firma, situate on the coast of the Atlantic, opposite to the Leeward Islands. The boundaries of this territory are indefinite, as the Spaniards pretend a right to countries in which they have never established any settlements. If the districts of Camana and Paria are included, it extends, according to the most reasonable limits, 500 miles from north to south, and about 270 from east to west. The interior country is woody and mountainous, variegated with fine vallies that yield corn and pasturage. The produce of the country consists chiefly in dyeing drugs, gums, medicinal roots, Brazil wood, sugar, tobacco, and some valuable timber; to which may be added pearls, for which the Spaniards used to fish along this coast to Carthageua. The capital of Andalusia is Camana, Cu-

mana, or as some writers call it, New Corduba, situate in N. lat. $9^{\circ} 5'$, about nine miles from the North sea. As the place was naturally strong, the Spaniards laid the foundation of a town in 1500, and fortified it with a castle, which was capable of making a vigorous defence; and this was actually the case in 1670, when the Buccaneers assaulted it, and were repulsed with great slaughter. *Mod. Un. Hist.* vol. xxxv. p. 176.

ANDALUSICUS, in *Ornithology*, a species of TETRAO that inhabits Andalusia. It is rufous, variegated with black; under-side reddish white; legs and bill flesh coloured. Gmelin. The black marks on the plumage are irregular, but partly disposed in bars; the neck and breast are slightly tinged with yellow; the quills dusky. It has only three toes, which are all placed forwards. Latham. This is the ANDALUSIAN QUAIL of the latter author.

ANDAMANS, two islands in the Gulf of Bengal, opposite to the coast of Malacca, though at a considerable distance. They are denominated the Great and the Little Andaman, which is about eight leagues in length, and five in breadth. The former is about 140 miles long, and its greatest breadth about 20; its deep bays afford excellent harbours, and one of its numerous creeks passes through the island, and is navigable by small vessels. The soil is chiefly black mould, and the cliffs are composed of a white arenaceous stone. The forests, which are extensive, afford some valuable trees, as ebony, and the Mellori, or Nicobar bread fruit. The only quadrupeds are wild hogs, monkeys, and rats. The fish, supplied by the sea, are, for the most part, mullets, soles, and good oylers. The conduct of the inhabitants manifests very little civilization; they are brutal, deceitful, and ferocious; and they are probably cannibals. They have woolly heads, and perfectly resemble negroes. As to their origin, report says, that they are descended from a crew of African slaves. Soon after the Portuguese had discovered the passage to India round the Cape of Good Hope, one of their ships, having on board a number of Mozambique negroes, was lost on the Andaman islands, which, it is said, were till then uninhabited. The blacks remained in the island, and settled it; whereas the Europeans made a small shallop, in which they sailed to Pegu. But this account is not compatible with the description given of these islanders by the Mahometan travellers in the ninth century. Canoes, however, might have been driven from the African coasts by a south-west monsoon; and this desert isle might have been thus occupied. A British settlement has been lately formed on the Greater Andaman, and some convicts have been sent thither from Bengal. The natives are about 2000, and are now profiting by the example of English industry. The limits of these islands are in N. lat. $14^{\circ} 0'$. $10^{\circ} 8'$ E. long. $93^{\circ} 3'$. $93^{\circ} 35'$. Asiatic Researches, v. ii. and iv.

ANDAMAS, a town of Persia, in the province of Kuzistan, 45 leagues west of Ispahan.

ANDAMENTO, in *Music*, the *motivo*, or movement in giving out the subject of a fugue; a theme, longer and more important than a POINT, which see.

ANDANASAR, in *Geography*, a town of India, on this side the Ganges, in Decan.

ANDANCE, a town of France, in the department of the Ardèche, and chief place of a canton, in the district of Mezen, on the Rhone, 20 miles north of Valence, and 12 north of Tournon.

ANDANIA, in *Ancient Geography*, a town of Messenia, south-west of Messene. It was one of the most ancient cities, and had probably been the capital of the country. Pausanias (Messenica. c. i. p. 282. 323.) has given a particular account of its origin, and of its decline and desolation.

ANDANIS, a river of Carmania, so called by Pliny and Ptolemy, but denominated by Arrian, Anamis.

ANDANTE, in *Music*, from *andare*, Ital. to walk, &c. neither to run nor to creep, but the medium between both those motions. *Andantino*, the diminutive of *andante*, is applied to movements somewhat quicker, and bordering on *allegretto*, or rather *grazioso*.

ANDARÆ, a people of India, on the other side of the Ganges, who formed, according to Pliny, a very powerful nation. Hardouin is of opinion, that the country which Pliny meant to describe was the kingdom of Pegu.

ANDARAX, in *Geography*, a town of Spain, in the country of Granada, six miles north-west of Almeria.

ANDARBA, in *Ancient Geography*, a town placed by Antonine in Dalmatia.

ANDARGE, in *Geography*, a river of France, which rises in the valleys of Uffan, and joins the Arnon near Verneuil.

ANDARIACA, a town of Asia Minor, which was situated, according to Ptolemy, in Lycia.

ANDARINI, a paste of vermicelli, reduced into five grains, like amulets.

ANDARISTUS, in *Ancient Geography*, a town of Europe, in Macedonia. Ptolemy refers it to the Pelagonians.

ANDARO Island, in *Geography*, lies on the western coast of the peninsula of India. N. lat. 10° . and E. long. $73^{\circ} 35'$.

ANDASTES, an Indian nation, in Canada.

ANDATE, in *Mythology*, the goddess of Victory, was one of the principal deities of the ancient Britons; she had a famous temple at Camelodunum.

ANDATIS, in *Ancient Geography*, a town of Ethiopia, on the banks of the Nile, according to Pliny.

ANDAUTONIUM, a town of Higher Pannonia, upon the river Savus, north-east of Siscia.

ANDAYE, in *Geography*, a sea-port town of France, in the department of the Lower Pyrenees, near the mouth of the Bidassoa, on the borders of Spain, with strong fortifications, and a good trade; five miles south-west of St. Jean de Luz. N. lat. $43^{\circ} 25'$. W. long. $1^{\circ} 45'$.

ANDEAH, a town of Hindostan, in the circle of Billah, 30 miles east-north-east of Billah, and 120 south of Agra.

ANDECRUM, or ANDETRUM, in *Ancient Geography*, a town of Dalmatia.

ANDEB, or ΑΙΝΤΑΒ, in *Geography*, a town of Turkey in Asia, in the government of Aleppo, situate on the road that leads from Aleppo to Erzerum, near the river Sefchar, in a valley that abounds with vines, various kinds of fruits and apples of a large size. This was anciently *Antiocha ad Taurum*.

ANDEGAN, the capital of Fergana, one of the provinces of great Bucharia.

ANDEGAVI. See ANDES.

ANDEIRA, in *Ancient Geography*, a town of Asia Minor, in Thebaic Cilicia, at some distance to the north of the small river Scilleus. Near this town there was a chapel consecrated to the mother of the gods, and a subterraneous grotto, which extended as far as Palæa.

ANDEL, in *Geography*, a town of France, in the department of the northern coast, and chief place of a canton, in the district of Lamballe, seven miles east of St. Brieuc.

ANDELANGA, in *Middle Age Writers*, occurs as part of the formula of divers donations.

In this sense we meet with *donare per andelangam* & *festucam*, *vendere* & *tradere per andelangam*. &c. Some will have the term properly to denote what we call an *and-iron*;

iron; others a long staff, or rod, which it is known was much used in the act of putting into possession.

The word is sometimes also written *andelangus*, *andelago*, *andilago*, or *andalagus*, &c.

ANDELINGEN, or ANDELINGEN, in *Geography*, a town of Switzerland, in the canton of Zurich; seated on an eminence in a vogtey of the same name, and near the river Thur; 17 miles north-north-east of Zurich.

ANDELLE, a river of France, in the province of Normandy, which rises near Ferté-en-Bray, passes by Vexin-Normand, and discharges itself into the Seine, about four leagues above Rouen.

ANDELOT, a town of France, in the department of the Upper Marne, and chief place of a caupon, in the district of Chaumont, on the river Rognon; 10 miles north-north-east of Chaumont.

ANDELPACH, a river of Germany, which runs into the Danube, near Scheir.

ANDELUS, in *Ancient Geography*, a town of Spain, placed by Ptolemy among the Valcones.

ANDELY, in *Geography*, a town of France, and principal place of a district, in the department of Eure. It is divided into two by a paved causeway; one of the parts is called *Le Grand Andely*, and the other *Le Petit Andely*; the one is upon the Seine, the other upon the river Gambon. It is 20 miles south-east of Rouen. N. lat. 49° 15'. E. long. 1° 14'.

ANDENA, in *Ancient Writers*, denotes a swath in mowing. The word is likewise used to signify as much ground as a man can stride over at once.

ANDENAS, in *Geography*, a small island of Norway, in the North Sea, with a town of the same name. N. lat. 69° 30'. E. long. 14° 54'.

ANDEOL, or ANDIOL, a small town of France, in the Vivarais, at the junction of the Ardeche with the Rhone. It is four leagues from Viviers. N. lat. 44° 24'. E. long. 2° 50'.

ANDERA, a beautiful village of Egypt, on the Nile, in which are found several monuments that indicate its former grandeur.

ANDERAB, the chief city of the province of Tokarestan, in Great Bucharia, situate near a pass through the mountains of Hindooh Koh, which separate India and Persia from Bucharia, and possessed by the Usbeck Tartars. As there is no other way of crossing the mountains towards India with beasts of carriage, except through this city, all travellers and goods from Bucharia are obliged to pay four per cent. On this account the khan of Balk maintains a considerable number of soldiers in this place, which is otherwise of no great strength. Anderab, though small, is very rich and populous. The neighbouring mountains yield quarries of lapis lazuli, which furnish a considerable trade between the Buchari and Persia and India.

ANDER-ESCH, a town of the duchy of Luxemburg, two leagues and a half south of Luxemburg.

ANDERITUM, or ANDERIDUM, in *Ancient Geography*, afterwards called *Gabali*, the capital of the Gabali, in Aquitania Prima. It was an episcopal see; but the city was ruined by an incursion of the Alemanni, and the see was transferred to Mende.

ANDERLECH, in *Geography*, a town of Brabant, three miles south-west from Brussels.

ANDERNACH, a town of Germany, in the circle of the Lower Rhine; in the archbishopric of Cologne, and in a prefecture of the same name. It was anciently called *Antoniacum*, *Antunacum*, and *Antonacense castellum*, and was a free imperial city. In the year 1496 it was by force of arms

rendered municipal by the elector of Cologne, to whom it now belongs. It is seated on the Rhine, and a toll is levied on travellers for the support of its walls. Its trade, for which it is advantageously situated, consists principally of stone ware, tiles, timber, and the soriff, a stone used in constructing dykes, which are conveyed to Holland by the Rhine. It is also remarkable on account of the large rafts which are here built upon the borders of the Rhine, the smaller ones being brought down the rivers Mayn and Rhine from Franconia and the country about Mentz, which are here united with those of Andernach. One of these rafts, when it arrives in Holland, whither they pass from the month of May to the end of August, is calculated to be worth about 80,000 guilders. They frequently require from 2 to 300 men to guide them. An irreconcilable animosity subsists between the inhabitants of Andernach and those of Lintz, and it is kept up by an annual sermon preached against the latter in the open market-place of Andernach. There are three medicinal springs in its vicinity. It is situated on the confines of the electorate of Treves, three leagues north-west from Coblenz, and eight and a half south-south-east from Cologne. N. lat. 50° 29'. E. long. 17° 9'. Rander's Tour, vol. i. p. 316.

ANDERNO *Port* lies on the east side of Scarpante, near the Archipelago Islands, nearly in the course from the east end of Candia Island to Rhodes, to the north-east.

ANDERO, *St.* a sea-port town in the Bay of Biscay, in Old Castile, seated on a small peninsula. It is a trading town, and contains about 700 houses, 2 parish churches, and 4 monasteries. Here the Spaniards build and lay up some of their men of war. N. lat. 43° 20'. W. long. 4° 30'.

ANDERO *Island, St.* See ANDRES.

ANDERSKOW, a town of Denmark, in the Island of Zealand, one mile south-east of Slagelle.

ANDERSON, ALEXANDER, in *Biography*, an eminent mathematician, was born at Aberdeen, in Scotland, and flourished at the latter end of the 16th, and beginning of the 17th centuries. He was professor of mathematics at Paris, where he published several ingenious works in geometry and algebra, both those of his own and of other persons. In 1612 was published in 4to. a supplement to Apollonius, written by Ghetaldus, under the title of "Supplementum Apollonii redivivi." His "Antilogia," treating of the analytic method of reasoning, and containing farther observations on the former work, was published at Paris in 4to. in 1615. About the same time he published two treatises of Vieta, "On Equations," with a dedication, preface, and appendix, and Vieta's tract of "Angular Sections," with demonstrations. A cousin of this gentleman, whose name was David Anderson, was also distinguished for his acquaintance with mathematical and mechanical science. His daughter was the mother of the celebrated James Gregory, and as soon as she discovered his propensity to these sciences, she took pains in giving him necessary instructions in the elements of mathematics. Hutton's Math. Dict.

ANDERSON, SIR EDMUND, an English lawyer, was descended from a Scots family, settled in Lincolnshire, and prosecuted his studies, first at Oxford, and afterwards in the Inner Temple, where in due time he became a barrister. In the 19th year of Queen Elizabeth, he was appointed the queen's serjeant at law, and soon after one of the justices of assize. In 1581 he went the Norfolk circuit, and distinguished himself by his zeal against Browne, who was the founder of the sect denominated Brownists. His continued zeal in support of the established church recommended him to the queen; and in 1582 he was advanced to

the dignity of lord chief justice of the common pleas. In the following year he received the honour of knighthood. In 1586 he was appointed one of the commissioners for trying Mary, queen of Scots, and he sat in the star-chamber when sentence was pronounced against her. He afterwards, viz. in 1587, sat in the same court, when Davidson, the queen's secretary, was charged with issuing the warrant for the execution of Mary, contrary to queen Elizabeth's command, and without her knowledge; and it was his opinion that the secretary had done "julum non julté," what was right but not in a due manner; upon which Mr. Grainger very properly observes, that this distinction was "excellent logic for finding an innocent man guilty, and drawn from the same mood and figure with the queen's order and no-order for Davidson's signing the warrant." The distinction, however, was admitted; and the secretary was sentenced to pay a fine of 10,000 pounds, and to be imprisoned during the queen's pleasure. Judge Anderson seems to have imbibed, in connection with this subserviency to the will of the court, an intolerant and persecuting spirit; and he has been reproached on this account, and not unjustly, by the Puritan writers. Mr. Pierce, in his "Vindication of the Dissenters," p. 129, (ed. Lond., 8vo., 1717,) charges him with very unjustifiable conduct with regard to Udal, a Puritan minister, who was confined in 1589, and tried and condemned the year following, and with endeavouring to trick him out of his life. Upon an examination of Udal, at the house of Lord Cobham, in January, 1589-90, the lord chief justice endeavoured to draw from him a confession that he was the author of certain books, which furnished the charges against him; though a law, 42 Edw. III. c. 3. to which Udal referred, says generally, that no man shall be put to answer without presentment before justices, or matter of record, or by due process, and writ original, &c. Udal, indeed, was not tried till July following; nevertheless the judge must know that, considering the disposition of government towards separatists, such a confession might endanger his life. He manifested a similar spirit in 1596; when he declared in his charges, in the northern circuit, that those who opposed the established church, opposed her majesty's authority, who was supreme in all cases ecclesiastical as well as civil, and on this account they were enemies to the state, and disturbers of the public peace; and he directed the grand juries to inquire concerning persons of this description, that they might be punished. At Lincoln, in his first and second charge, as we are informed by the letter of a clergyman, preserved in Strype's Annals, vol. iv. p. 267, he insinuated with wonderful vehemency, that the country is troubled with Brownists, with disciplinarians as he called them, and creators of Presbyteries. He also called the preachers knaves; saying, that they would start up in the pulpit, and speak against every body; he urged the grand jury to suppress, by the statute against Conventicles, a meeting held even with the bishop's allowance, at Lowth; and declared that he would complain to her majesty of any, though never so great, who should show themselves discontented with the jury for any such matter; in short, he conducted himself with so much wrath, so many oaths, and such reproachful revilings, upon the bench, that offence was taken at it by persons of principal credit and note, throughout all the circuits.

He was nevertheless an able lawyer, and adhered with rigorous exactness to the statutes; nor does it appear, that his obedience to the will of the sovereign proceeded, like that of others, from view of personal interest, or from a fear of losing his office, but from respect for what he deemed the constitutional right of the crown. In a case, when the queen would have stretched her prerogative beyond the limit

of the law, the lord chief justice and his brethren resisted, and by their steadiness obliged the queen to relinquish her claim. He also, together with the other judges, signed a remonstrance against the arbitrary proceedings of the court, by which at the command of a counsellor, or nobleman, subjects were frequently committed to prison, and detained without good cause, and contrary to the laws of the realm; a spirited measure which produced considerable effect; for we are told in Sir William Anderson's reports (Reports, part ii. p. 297,) that "after this there did follow more quietness than before." Upon the accession of James I., the lord chief justice was continued in his office; and he retained it till his death in 1605. "With a harsh and severe temper, and intolerant principles, which rendered him hostile to sectaries, and with notions of arbitrary power, which made him, in some cases, an instrument of tyranny, he appears to have possessed great firmness of temper, and independence of character. If his principles would not suffer him to be always an equitable judge, he was a great lawyer, and, on the whole, an honest man." His works are "Reports of Cases, adjudged in the time of queen Elizabeth, in the common bench," in folio, London, 1644; "Resolutions and Judgments in the Courts of Westminster, in the latter end of the reign of queen Elizabeth," published by John Goldeborough, Esq. 1653. The title is now extinct. Biog. Brit.

ANDERSON, JOHN, the son of a rich merchant, was born at Hamburg, in 1674. Having made great proficiency in canon law, natural history, and the languages, he was made syndic of the city of Hamburg, and he was employed in various negotiations in the principal courts of Europe. In the prosecution of his study and research, he directed a particular attention to the northern nations, and both by reading and conversation obtained a very considerable degree of information concerning them. By means of the Danish colonies established in Davis's Straits, he gained an accurate knowledge of those sequestered parts, and he was enabled to correct many erroneous and fabulous accounts, concerning the state of Iceland. The result of his inquiries was communicated to the public in a German work, entitled, "The natural history of Iceland, Greenland, Davis's Straits, and other northern regions;" since translated into other languages. Mr. Anderson died in 1743; and left behind him MS. pieces, that have not been published. Moreri.

ANDERSON, ADAM, a native of Scotland, was brother to Rev. James Anderson, D. D. editor of the "Diplomata Scotiæ," and "Royal Genealogies," minister of the Scots church, in Swallow-street, Piccadilly, and known in London, among his connections, by the name of bishop Anderson; a learned but imprudent man, who lost a great part of his property in the year 1720. Adam Anderson was for 40 years a clerk in the South Sea House; one of the trustees for establishing the colony of Georgia, in America; and one of the court of assistants of the Scots corporation, in London. His well known work, entitled, "An Historical and Chronological Deduction of the Origin of Commerce," was first printed in two volumes, fol., in 1764; and a new edition of it, with considerable additions, was published in four volumes, 4to., in 1789. Mr. Anderson died in Red Lion-street, Clerkenwell, Jan. 10, 1755.

ANDERSON'S *Island*, in *Geography*, a small island in the North Pacific ocean, discovered soon after Mr. Anderson, the surgeon of the Resolution, had breathed his last, and so called after his name. It was seen at some distance from a rocky point called Cape Newnham, situated in N. lat. 58° 42'. E. long. 197° 36'.

ANDES, in *Ancient Geography*, a small place of Italy, near Mantua, celebrated as the birth-place of Virgil; hence

he is called *Andinus*, according to some copies of Silius Italicus, lib. viii. v. 596; whilst others read *Aonius*. It is now the village of Banded, situate where the Veronese hills imperceptibly slope down into the plain of Mantua.

ANDES, ANDEGAVI, OR ANDICAVI, a people of Gaul, to the east of the Namnetes or Nannetes, and to the north of the river Liger. Pliny (lib. iv. c. 18.) calls them Andegavi, and they are denominated by Tacitus (Annal. iii. c. 41.) Andecavi, which Ptolemy has corrupted into Ondicavæ. Their chief city was called Juliomagus or Civitas Andicavorum. It is now Angers, and the territory of the Andes was the present Anjou. The Andes, or Andecavi, were valiant, and fought bravely in defence of their liberty; they entered into the conspiracy of Vercingetorix, under the conduct of Dumnaeus; and under the empire of Tiberius, when they were grievously oppressed with taxes, they raised the standard of rebellion.

ANDES, a chain of mountains in South America, called by the Spaniards Cordillera de los Andes, or great chain of Andes, which commences near the capes of Ildro and Pilares, in the southern extremity of the continent, and stretches along the Pacific ocean, at the mean distance of about 100 miles, traversing the kingdom of Chili, and the provinces of Buenos Ayres, Peru, and Quito, to the west side of the gulf of Darien, through an interval of not less than 4600 miles. From thence they continue their course through the extensive kingdom of New Spain, till they lose themselves in the unexplored countries of the north. The chief summits of this range of mountains are near the Equator, not far from the city of Quito. The highest of them is Chimborazo, about 100 miles south of Quito, and about 10 miles north of Riobamba; and its height was computed by the French mathematicians, who were employed from 1735 to 1743, in measuring a degree of the equator, to be about 3217 French toises, or 20,280 feet, above the level of the sea; that is about 5000 feet higher than Mont Blanc. But as these mountains are elevated on the high plain of Quito, which is elevated farther above the sea than the top of the Pyrenées, and constitutes more than one-third of the computed height, they are inferior in actual elevation to Mont Blanc. That part of Chimborazo, which is covered with perpetual snow, is about 2400 feet from the summit. The mountain next in height is supposed to be the volcano of Cotopaxi, which is estimated at about 18,600 feet, and is situated about 25 miles south-east of Quito. Other elevated summits are Pachincha, a few miles north-east of Quito; and the Altar and Sanga, south-east of Chimborazo. In the province of Quito, the Andes form a double chain, including the plain of Quito. The western ridge comprehends Pachincha, Illinssa, Chimborazo, &c.; and the eastern is composed of Cotopaxi, the Altar, Sanga, &c.; and this double ridge is extended for about 500 miles from the south of Cuenza to the north of Popayan. The highest of these ridges is barren, and covered with snow, although it lies in the torrid zone; the other, which is lower, is fruitful in woods, groves, &c. and abounds with wild hogs and sheep, called guanacos, which resemble a camel in shape, but of a smaller size, and bearing hair for softness, fineness, and colour, preferred to silk.

There are several arms, or ramifications, which proceed from the Andes, and which serve to consolidate the union of the southern with the northern parts of America. The most northern of these, or that of the coast of Venezuela, lying between nine and ten degrees of N. latitude, is the most lofty and narrow. This great chain of the Andes extends from the high plain of Quito, by Popayan and Choco, on the west of the river Atrato, towards the isthmus, where,

on the banks of the Chagrè, it forms mountainous land only about 1200 feet high. From the same Andes proceed several branches, one called the Sierra de Abibe, towards the province of St. Marta, covered with snow, and visible from the sea. This chain is restricted, as it approaches the gulf of Mexico, and cape of Vela, and afterwards runs due east towards the mountain of Paria, or even to the isle of Trinidad. The greatest height is in the two Sierras Nevadas of St. Marta, and of Merida; the first being near 5000 varas, and the second 5400 varas, about 2350 toises, or 14,000 English feet above the sea. Several mountains of this chain are perhaps equal in height to Mont Blanc; they are perpetually covered with snow, and frequently pour from their sides streams of boiling sulphureous water; and the highest peaks are elevated amidst mountains of little height, that of Meridan being near the plain of Caracas, which is only 260 feet above the sea. The general height of the chain of the coast is from six to 800 toises; the Nevada of Merida is 2350, and the Silla de Caracas 1316, lowering towards the east, so that cape Codera is only 176 toises. This depression, however, is only of the primitive rock; for there are secondary calcareous mountains from cape Unara, which are higher than the gneiss, or foliated granite, and the micaceous schistus. These calcareous mountains, covered with calcareous free-stone, follow this chain on its southern side, and increase in height towards the eastern point of the continent. The chain of the coast is more steep towards the north than the south; and there is a dreadful perpendicular precipice of 1300 toises in the Silla de Caracas, above Caravelledo, the northern part of this chain being perhaps broken by the gulf of Mexico.

The second chain, which is that of Parima, or of the cataracts of Orinoco, was scarcely deemed passable till within 30 years, since the expedition of Ituriaga and Solano. It leaves the Andes near Pupayan, and stretching from west to east, from the sources of the Guavian, appears to extend to the north-east of that river, forming the cataracts of Maypura and Atures, in the Orinoco, lat. 5°, which are truly dreadful, and nevertheless afford the only passage yet opened towards the vale of the Amazons. Thence this chain continues its course, with a breadth sometimes of 120 leagues, north-east to the river Caronis, but further to the east its continuation is little known. It has, however, been disclosed by Don Antonio Santos, who, under the disguise of an Indian, passed from the mouth of the river Caronis, to the little lake of Parima, and observed this range between 4° and 5° N. lat., where it is about 60 leagues broad, and divides the waters which fall into the Orinoco and Esquibo, from those that fall into the river of Amazons. Farther to the east, this range becomes still wider, descending south along the Mao, where the Dutch call a part of it Dorado, or the mountain of gold; as it is composed of bright micaceous schistus, which gives a similar character to a small isle in the lake of Parima. To the east of the Esquibo this range takes a south-east direction, and joins the granitic mountains of Guanaa, in which is the source of the river of Surinam, and also of other rivers. This last group of mountains is very extensive, the same gneiss being found at 8° 20' and 2° 14'. This wide range is inhabited by a number of savage tribes, which are not much known in Europe. It no where seems to rise to an equal height with the northern range of the coast; the mountain of Duida, whose volcano is in lat. 3° 13', not far from Esmeralda, being deemed the highest, and, by the measure of Humboldt, found 1323 toises above the sea. This is a picturesque and majestic mountain, ejecting flames towards the close of the rainy season, and situate near a beautiful plain, covered with palm-

trees and ananas. Towards the east it seems to terminate in broken rocks; but without any appearance of any secondary strata, the rocks being granite, gneiss, micaceous schist, and hornblende slate.

The third chain of primitive mountains, or that of Chiquitos, unites the Andes of Peru and Chili with the mountains of Brazil and Paraguay, and stretches from La Paz, Potosi, and Tucuman, through the provinces of Moxos, Chiquitos, and Chaco, towards the government of the Mines, and of St. Paul, in Brazil. The highest summits appear to be between 15° and 20° ; the rivers there passing to that of Amazons, or that of La Plata.

Between these three great ridges are three immense vallies; that of Orinoco, that of the river of Amazons, and that of the Pampas of Buenos Ayres, from 19° to 52° south lat. all opening to the east, but shut on the west by the Andes. The middle valley, or that of the Amazons, is covered with forests so thick, that the rivers alone form roads; while those of Orinoco and Pampas are savannahs or grassy plains, with a few scattered palms; and so level, that sometimes for 800 square leagues there is no elevation exceeding eight or ten inches. In the northern plain the primitive rock is covered with limestone, gypsum, and freestone, while in that of the Amazons the granite every where appears. The general inclination is to the north-west, which, according to Humboldt, is the usual arrangement of primitive rocks. In the Andes petrifications are uncommon, but there are sometimes patches of gypsum, and secondary limestone; while the range of Parima consists entirely of granite and other primitive rocks. But in the calcareous freestone of the northern ridges of the coast, Humboldt found many shells, seemingly of recent petrification, as they are those of the sea, now at the distance of nine leagues. In the plain of Orinoco are found petrified trees, in a coarse breccia. Granite forms the chain of Parima; but in that of the coast it is covered, or mingled with gneiss and micaceous schist. It is sometimes stratified in beds from two to three feet thick, and sometimes contains large crystals of felspar. The micaceous schist sometimes presents red garnets, and sapphires; and in the gneiss of the mountain of Avila green garnets appear. In the range of Parima there occur large masses of most brilliant talc, formerly imparting such reputation to the Dorado, situate between the rivers Esquibo and Mao, and other mountains, which like burnished gold, reflect the light of the sun, and have hence been denominated the shining mountains. Smeelite, or soft jad, is formed into idols: and Condamine discovered that hard jad, called Amazon stone. Schistose chlorite also occurs; and beautiful hornblende slate rises through the streets of Guayana, or S. Thome. Other substances are decomposed felspar or kaolin, primitive limestone and plumbago; and there are veins of quartz, which contain auriferous pyrites, and antimony, native gold, grey copper, and malachite. The copper mines of Aroa are alone wrought, and produce about 1500 quintals yearly. Slate is rare, but sometimes covers the micaceous schist; and in the northern chain there are rocks of serpentine, veined with bluish steatite. The grunstein of Werner sometimes occurs in that ridge. Among the rocks called transitive by Werner, as connecting the primitive with the secondary, are trap, green slate, amygdaloid, and the schistose porphyry of that author, green with crystals of felspar. The secondary rocks are limestone, gypsum, argillaceous schist, and freestone, or calcareous sandstone, with coarse breccia.

The eastern spurs of the Andes, according to Helms, a practical German mineralogist, who was employed for some years in the mines of Peru, sometimes present red and green

granite, and gneiss, as towards Cordova, and Tucuman, but the grand chain consists chiefly of argillaceous schist, or various kinds of thick slate, bluish, dark red, flesh colour, grey and yellow; on which, in many places, are incumbent strata of limestone, and large masses of ferruginous sandstone. No mountains, says this author, have been observed by him in Hungary, Saxony, or the Pyrenées, which are so irregular as the Andes, or broken into such alternate substances, manifesting such prodigious revolution of nature. Amid the argillaceous schist the metals sometimes occur in veins of quartz, sometimes in alluvial layers of sandstone, and iron sand. Near Potosi are irregular beds of large bullets of granite; and the celebrated mountain, so rich in silver ore, is chiefly composed of a firm yellow argillaceous slate, full of veins of ferruginous quartz, in which are found some of the best ores. In passing the highest ridge of the Andes, between Potosi and Lima, Helms still found argillaceous schist, the predominant substance; sometimes with strata of sandstone, sometimes with long extents of granite. Near the lake of Titicaca the Andes are of prodigious height, this being the centre of the chain, and perhaps equalling the summits near Quito; and Helms observed in some places the basis of argillaceous schist covered with alluvial layers of marl, gypsum, limestone, sand, fragments of porphyry, and even rock salt; and yet rich silver occurs in abundance. Near Guancavelica, the mountains are chiefly sandstone or limestone; but still equally high and equally rich. To the north of this place the ridge for 100 miles is said to be calcareous, yet fertile in metallic ores. According to Helms, the summits near La Paz are the highest of the Andes; but he did not travel so far as Quito.

It is said that the Andes have 16 volcanoes, which break out in various places, and by melting the snow occasion such torrents of water, that numbers of men and cattle have perished. Argillaceous schist, that predominates in a range so lofty and extensive as the Andes, where upon the common theories granite might have been expected, is probably the work of that prodigious subterranean fire that issues from so many volcanoes, and of the eruptions of mud, combined with subterranean waters; for this mud is the very matter of argillaceous schist, and thus ejected during thousands of years, has become superincumbent on the granite, which is perhaps the principal substance in such parts as are not volcanic.

The French mathematicians, who visited the Andes, for measuring a degree of the meridian, have given a particular account of the occurrences that befel them on this occasion. Having divided themselves into two bodies, Don George Juan and M. Godin, at the head of one party, went to the mountain of Pambamarca; and M. Bouguer de la Condamine, and Don Ulloa, with their assistants, ascended the highest summit of Pachincha. Both parties suffered from the extremity of the cold, and the impetuosity of the winds, which on these heights blow with incessant violence. They had commonly, in other uncomfortable situations, pitched a field-tent for each company; but on the top of Pachincha this was impracticable, and they were under the necessity of contenting themselves with a very small hut, which, like all the other adjacent parts, was soon covered with ice and snow. The air on this summit was also so subtle, as to render respiration very difficult. They generally kept within their hut; which they were obliged to do, on account of the intenseness of the cold, the violence of the wind, and the darkness occasioned by a thick fog. When the fog cleared up, the clouds descended towards the earth; and surrounded the mountain in such a

manner

manner as to represent the sea, with the rock on which they were situated like an island in the centre of it. When this happened, they heard the horrid noises of the tempests, which then discharged themselves at Quito, and the neighbouring country. They saw the lightnings issuing from the clouds, and heard the thunder rolling far beneath them; and whilst the lower parts were involved in tempests of thunder and rain, they enjoyed a delightful serenity; the wind abated, the sky was clear, and the enlivening rays of the sun moderated the severity of the cold. But when the clouds rose, respiration became difficult, and snow and hail fell continually, and the wind resumed its former violence; so that they were apprehensive, lest their hut should be overturned, and blown down the precipice, on the edge of which it was built, or that they should be buried under it by the accumulation of ice and snow. Their fears were increased by the dreadful concussions occasioned by the fall of enormous fragments of rocks, and the velocity with which the wind moved dazzled their sight. For their greater security they fastened the door of their hut with thongs of leather, and stopped every crevice on the inside; and they also completely covered it with straw; but all this precaution was not sufficient to prevent the wind from penetrating. They had no other light in this confined state, but that of a lamp or two, which they kept burning; but notwithstanding the smallness of their habitation, and the heat of the lamps, the cold was so intense, that each of them was obliged to have a chaffing-dish of coals. Such were the effects of the asperity of the climate, that their feet were swelled and so tender, that they could not even bear the heat, and walking was attended with great pain. Their hands were covered with chilblains; their lips were swelled and chapped; so that every motion, in speaking or the like, drew blood. Their common food in this inhospitable region was a little rice boiled with some flesh or fowl, which was procured from Quito; and instead of water, their pot was filled with ice; and whilst they were eating, every one of them was obliged to keep his plate over a chaffing-dish of coals, to prevent his provisions from freezing. When they attempted to augment their inward heat by drinking strong liquors, they felt no strength in them, nor were they any greater preservative against the cold than common water. The Indians, who attended them, could not by any encouragement, or threat of punishment, be prevailed upon to continue with them. Upon their first feeling the rigour of the climate, they immediately prepared for desertion; and such was the inconvenience resulting from this circumstance, that they were in danger of being confined in their hut, by the masses of snow, which it was the business of these Indians every morning to remove. Such, and similar to these, were the difficulties and inconveniences with which they encountered during the whole progress of their occupation in forming triangles for measuring degrees of the meridian. Don Juan Don Ulloa's Voyage to South America, by Adams, vol. i. p. 214, &c. Journal de Physique, Messidor An. ix. July, 1801. Helms's Tagebuch, &c.; or Journal of a Journey through Peru, from Buenos Ayres to the great river La Plata, by Potosi to Lima, &c. 8vo. Dresden, 1798. Pinkerton's Modern Geography, vol. ii. p. 673, &c.

ANDESAGE, a town of France in the department of the Lot and Garonne, and chief place of a canton, in the district of Villeneuve d'Agen, 10 miles north-east of Agen.

ANDETHANA, in *Ancient Geography*, *Epternash*, a town of Gaul, belonging to the Treveri, in Belgia prima, between Augusta Treverorum to the east, and Orobannum to the west.

ANDETRIUM, (Pliny), ANDRETIUM, (Strabo), AN-

DERION, (Dion Cassius), and ANDRECIUM, (Ptolemy). a town of Dalmatia, situated on an almost inaccessible rock, surrounded with deep vallies and rapid torrents; whence it appears to be the citadel now called *Cliffa*. N. lat. 43° 20'. E. long. 17° 46'.

ANDEVALLO, in *Geography*, a small country of Spain, in Andalusia, on the frontiers of Portugal and Spanish Estremadura.

ANDEZEIOW, or DEDERZEIOW, a town of Poland, in the palatinate of Cracow, 52 miles south-south-west of Cracow.

ANDIANTES, a people, according to Ptolemy, of Lower Panponia.

ANDIATOROQUE, a lake of Canada, in North America, near New England.

ANDILLA, a town of Spain, in the province of Valencia, six leagues from Alicante.

ANDIRÁ, or ANGELIN, in *Botany*, *G. Pison*; a tree in Brazil, the wood of which is hard and proper for building. Its bark is of an ash colour; its fruit is of the shape and size of an egg, green at first, but growing blacker by degrees. It is covered with a hard rind, inclosing a grain, or yellowish kernel, of a bitterish, astringent taste. They pulverize this nut, and give it for worms; but not more than one scruple; for more than this is said to be poisonous. In the Linnæan system by Gmelin, *andira* is a genus of the *diadelphia decandria* class and order; the characters of which are, that the *calyx* is urceolated almost entire, or quinidentated; the *corolla* has two petals; and the fruit is a fleshy pod, ovate, furrowed, and containing a single seed.

ANDIRA, in *Zoology*, is an animal called also *andira-guacu*, a kind of bat in Brazil: the largest of which are as big as our pigeons: they call them horned bats, from a sort of excrescence, or pliant body, above their beak. Some of these are very dangerous; for they get into chambers in the night, and so subtilly open the veins in the feet of those who are in bed, that they are not perceived but by the flowing of the blood, which is difficult to be stopped. The inhabitants reckon the tongue and heart of that animal among poisons. The *andira* is the *VESPERTILIO SPECTRUM* of Linnæus. See *SPECTRE*.

ANDIRIAR, in *Botany*, the name by which Rhafes, and some others, express the *FABAGO*.

ANDLAU, in *Geography*, a town of France, in the department of the Lower Rhine, situated on a mountain, and defended by a castle. It was formerly an imperial free city, and has a nunnery, instituted for ladies of noble extraction. It is 18 miles south-south-west of Strasburg. N. lat. 48° 24'. E. long. 7° 24'.

ANDLAU is also a river of France, which rises near the town of the same name, and discharges itself into the Ill, near Fegerheim, in the department of the Lower Rhine.

ANDOCIDES, in *Biography*, an Athenian orator, was born at Athens, the first year of the 78th olympiad, or 468 years before Christ. He was attached to oligarchy, and not to popular government. When Alcibiades was tried for demolishing the statues of Mercury, Andocides was suspected, and he escaped by acknowledging the crime, and accusing his accomplices. The style of his orations is plain and simple, and almost entirely destitute of ornament. Four are extant, of which the two first are vindications of himself; the third is on the subject of peace with the Lacedæmonians; and the fourth against Alcibiades, who had sent him into exile. They were first published with those of Antiphon, Æschines, &c. by Aldus Manutius, in folio, at Rome, in 1513; and afterwards in a more splendid manner, in 1575, by Henry Stephens. The orations of Antiphon, Andocides,

cides, and Trees, were published in 8vo, with a Latin version, at Hovan, in 1619. *Plut. Alcibiades apud opera*, tom. i. p. 261. *Fabr. Bib. Græc. lib. ii. c. 26. § 3. tom. i. p. 811.*

ANDOLOGENSES, in *Ancient Geography*, a people of Spain, according to Pliny.

ANDOMADUNUM, ANDOMATUNUM, (Ptolemy). ANTEMATUNUM, (Antonine), CIVITAS LINGONUM, (Tacitus), now *Langres*, a city of Gallia Belgica, was a Roman colony, and appears, by many remains of antiquity, to have been considerable. It was situated on an eminence as the termination *dunum* imports. N. lat. 48°. E. long. 5° 22'.

ANDONY RIVER, in *Geography*, lies on the coast of Benin, in Africa, call from Cape Formosa, between the new and old Calabar rivers, in about N. lat. 4° 30', and E. long. 9° 55'.

ANDORA, a town of Italy, in Genoa, whose neighbourhood produces good wine; two miles north-east of Oneglia.

ANDORINHA, in *Ornithology*, a name by which the Portuguese in the Brasils call the Brazilian swallow, more usually known by its Brazilian name *tapera*.

ANDORISIPPO, in *Ancient Geography*, a town placed by Pliny in Bœtica. Hardouin calls it *Andoriscæ*.

ANDORNO, in *Geography*, a town of Italy, in the principality of Piedmont, and lordship of Verelli, 25 miles north-west of Verelli.

ANDORRA, a town of Spain, in Catalonia, situate in a valley of the same name, which is surrounded by the Pyrenées, and formerly made a part of the county of Foix, with which it joins; the valley is fertile, and watered by a small river, called Belira, that runs into the Segra, three leagues north of Urgel.

ANDOSILLA, a town of Spain, in Navarre; two leagues from Calahorra.

ANDOSINI, in *Ancient Geography*, a people placed by Polybius, in Spain, towards the Pyrenées.

ANDOVER, in *Geography*, a borough town of England, in the county of Hampshire, pleasantly situate near the river Ande. It has a manufacture of shalloons, and a considerable trade in malting. Its market is on Saturday. It is governed by a bailiff, steward, recorder, ten other persons of approved reputation, and 24 burgessees. It sends two members to parliament. A navigable canal is making from this town to Southampton; it is 63½ miles from London, and 17¼ from Salisbury. N. lat. 51° 20'. W. long. 0° 56'.

ANDOVER is also a large and thriving town of North-America, in Essex county, Massachusetts, containing two parishes, and 2863 inhabitants. It has a paper mill and powder mill, and an excellent academy, called "Phillips Academy," from the name of its founders. This town lies about 20 miles west of Newbury port, and about 22 north of Boston.

ANDOVER is also a town of Hillsborough, in New Hampshire, incorporated in 1779, and containing 645 inhabitants.

ANDOVER is also the south-westernmost township in Windsor county, Vermont, situate 32 miles north east of Bennington, and containing 275 inhabitants.

ANDOVER is also a place in Suffex county, New Jersey, near the source of Pequett river, five miles south-south-east from New-Town, and 16 in the same direction from Walpack.

ANDOVILLE, a town of France, in the department of the Mayenne, a chief place of a canton, in the district of Laval, near the river Eracé, six miles north of Laval.

ANDRAÆ, in *Ancient Geography*, a town of Asia Minor,

placed by Ptolemy in Cappadocia, in the prefecture of Chamaene.

ANDRACINE, in *Botany*, *Telephoides* of Tournefort, a genus of the *minocia gynandria* (*pentandria trigynia*, Gmelin's Linnæus) class and order; of the natural order of *tricoceæ* and *euphobiæ* of Jussieu; the characters of which are, that it has male and female flowers; in the former the *calyx* is a five-leaved, equal, marcescent perianthium; the *corolla* has five petals, emarginate, slender, and shorter than the calyx, the nectary has five leaflets, semibifid, herbaceous, one within each petal, and less than it; the *filamina* have five filaments, small, inserted into the rudiment of each style, and simple anthers; in the latter the *calyx* is a five-leaved, equal, permanent perianthium; the *corolla* has no petals, the nectary as in the male; the *pyllium* is a germ superior and globose, styles three, filiform, and two-parted, the stigmas globose; the *pericarpium* is a capsule globose-trilobate, three-celled, cells bivalved, of the size of the calyx, (tricoceous elastic, G.) the *seeds* are in pairs, rounded on one side, triangular and obtuse on the other. Obs. It is related to *clutia*.

Martyn enumerates three, and Gmelin two species. 1. *A. telephoides*, telephoides of Dill. and Buxb. glaucous of Boeck. procumbent and herbaceous. This is a low plant, with its branches trailing on the ground; the leaves are small, oval, and of a sea-green colour; found wild in some parts of Italy, and in the Archipelago, whence its seeds were sent by Tournefort to the royal garden at Paris; and cultivated in Kew garden by Dr. Sherard, in 1732. As it has no great beauty, it is only preserved in botanic gardens for the sake of variety. 2. *A. fruticosa*, β *clutia androgynua* of Linn. Mantiss. erect and shrubby. It rises 12 or 14 feet high, with branches bearing spear-shaped, pointed, smooth leaves; the flowers are small, and of an herbaceous white colour; some flowers are male, with a one-leaved round flat obtuse calyx, a little quinquefid, others on the same plant female, five-parted; a native of the East Indies, in China, and also of La Vera Cruz, in New Spain. 3. *A. arborea* of Miller, with arborescent stem, and leaves ovate, obtuse, hoary underneath. This has a strong woody stem, which rises more than 20 feet high, with branches from which proceed oval blunt leaves hoary on the under side, and furrowed on the upper, and placed alternately on the branches. This species grows naturally at Campeachy, and the seeds were sent from thence to England by Dr. Houstoun. There is another sort, raised from seeds, sent from Jamaica; the leaves of which resemble those of the laurel, except that they are much larger; this has not yet flowered in Europe.

Culture. The seeds of the first species may be sown on a moderate hot bed in March; and the plants, which spring up in about a month, may be removed, each into a small pot, and plunged into another moderate hot bed; in mild weather they should have plenty of air and be often watered; in June they will produce flowers, and the seeds will ripen in August and September, after which the plants decay. The second and third species are very tender plants; their seeds should be sown in pots, which must be plunged in a hot bed of tanner's bark, and watered; when the plants come up, each of them should be planted in a small pot, plunged into a tan-bed, and they should be shaded till they have taken fresh root, and afterwards in warm weather exposed to the air, but constantly kept in the bark stove.

ANDRACHNE. See ARBUTUS.

ANDRADA, DIEGO DE PAYVA D' OF ANDRADIUS, in *Biography*, a learned Portuguese divine of the 16th century, was born at Coimbra, distinguished in that University, and sent by Sebastian, king of Portugal, to the council of Trent, where he was celebrated for the understanding of a deep

deep theologian, and for the tongue of an eloquent orator. During the session of the council he wrote a treatise, entitled, "Orthodoxarum Explicationum Libri Decem," in answer to an attack upon the Jesuits by Chemnitius. This was answered by Chemnitius. Andrada prepared an elaborate rejoinder under the title of "Defensio Tridentinæ fidei," or a defence of the Catholic faith, &c. first published in 4to. at Lisbon, in 1578, and afterwards at Ingolstadt, in 8vo. in 1580. Andrada published also seven volumes of sermons. Although a champion for orthodoxy, he had the candour to allow that the heathen philosophers might be saved. Gen. Dict.

ANDRADA, FRANCIS, historiographer to Philip III. king of Spain, was the brother of the preceding Andrada. He wrote "The History of John III. king of Portugal," in the Portuguese language; which was published, in 4to., at Lisbon, in 1533.

ANDRAGATHIA, in *Ancient Geography*, a town of Italy, in the vicinity of Posidonium.

ANDRAGIRI, or GUDAVIRI, in *Geography*, a province and town in the island of Sumatra. The town is in the middle of the island, and belongs to the Dutch, who have built a fort for its security.

ANDRAMIT, ADRAMIT, or ANDRAMITI, a town of Natolia, in Turkey, in Asia. The Turks call it Palament. See ADRAMYTNUM.

ANDRAPANA, in *Ancient Geography*, a town of Asia, in India, ascribed by Ptolemy to the Indocythians.

ANDRAPODISMUS, in *Ancient Writers*, the selling of persons for slaves.

Hence also *andrapodistes*, ἀνδραποδιστης, a dealer in slaves, more particularly a kidnapper, who steals men or children, to sell them; a crime for which the Thessalians were noted.

ANDRAPODOCAPELLI, Mancipiorum Viuidictores, in *Antiquity*, dealers in slaves. They cleansed the skins of the slaves with baths prepared with barley and other kinds of meal, to which nitre, according to Galen, was occasionally added, they whipped them lightly with cords, and then smeared them with oil, and used various other acts to make them sleek and plump, and to give them an appearance of health. They were also called Mangones, and the art Mangoniam. Castelli Lexicon.

At Athens, several places in the forum were appointed for the sale of slaves. Upon the first day of every month, the merchants brought them into the market, and exposed them to sale, whilst the crier, standing upon a stone erected for that purpose, called the people together.

ANDRARUM, or ANDERUM, in *Geography*, a town of Sweden, in the province of Schonon; and also a town at Christianstadt.

ANDRASTE, in *Antiquity*, one of the principal divinities of the ancient Britons, supposed to have been the same with Venus or Diana.

ANDRE, St., in *Geography*, a town in the kingdom of Leon, in North America, near the mouth of Nassau river, which falls into the gulf of Mexico.

ANDRE, a small river of France, in Britany, which runs into the Loire, at Nantes.

ANDRE, a town of Phrygia in Asia Minor.

ANDRÉ, St., in *Biography*, born at Dijon, the 15th of February, 1704, received his education at Montpellier, and in 1729 was admitted member of the company of surgeons, at Versailles, and appointed one of the surgeons to the king. He applied himself particularly to the study of the diseases of the urethra, and was expert in the application of bougies, on which he placed his principal dependence in

these complaints, varying the ingredients of which they were composed, to make them more or less stimulating and eroding, as the circumstances of the cases required. In 1751, he published his "Dissertations pour les maladies de l'uretre, qui ont besoin de bougies," 12mo. Paris, and in 1758; "Maniere de faire usage des bougies antiverieennes," 8vo. also at Paris. For an account of other publications by this writer, see Eloy. Dict. Hist.

ANDREA, in *Geography*, a town of Africa, in Upper Guinea, about a quarter of a mile from the river Mesurado, and eight miles from its mouth; it contains about 40 or 50 houses; its chief riches are palm, wine, and rice; a trade is also carried on in ivory and slaves.

ANDREA ANDREANI, in *Biography*, an eminent engraver, was born at Mantua, and died A. D. 1623, at a very advanced age. Besides his own engravings, he procured many performed by other persons, and sold the impressions under his own name. He engraved only on wood, in a peculiar style, distinguished by the name of "Chiaroscuro," which is performed with two, three, or more blocks of wood, according to the number of tints required, which are stamped upon paper, one after another, so as to produce the effect of a washed drawing. The invention of this species of engraving was much prior to the æra of this artist. His great merit as an artist, is acknowledged by all who are conversant with his prints. His drawing is excellent, executed with great spirit, and in a very masterly style. The heads of his figures are characteristic and expressive, and he has displayed great judgment in the management of his various tints. His works are considered as admirable transcripts from the sketches of many of the greatest painters. Among his most finished prints may be reckoned, "Christ departing from Pilate," who is washing his hands; a large print lengthways, on two blocks, engraved from a bas relief of Giovan. Bologna; "An emblematical Print," representing the Christian, after his spiritual warfare in the present life, received as victorious into heaven, and crowned by Christ; "The triumph of Julius Cæsar," from Andrea Mantegna, the original of which is at Hampton Court; it is cut on 10 blocks of wood, dated 1598; "The entombing of Christ," from Raphael de Reggio; "The rape of the Sabines," from a group by Giovan. Bologna. The scarcest of all his works is said to be "The pavement of Sienna," after a drawing of Francesco Vanni. Strutt.

ANDREA DA PISA, a sculptor and architect, was born at Pisa in 1270. He built several castles, and the church of St. John, at Pitoli; but his skill in architecture was principally displayed at Florence, where he enlarged and fortified the palace of the duke, by erecting many mansions in it and surrounding it with magnificent towers and gates. On this account he obtained the right of citizenship. At the request of the duke of Athens, he made a model of a citadel, which he intended to erect for restraining the Florentines; upon which they took the alarm, and expelled the duke; but Andrea passed the remainder of his days at Florence, cultivating the fine arts, such as painting, poetry and music, besides those which were professionally his own, and died in 1345, aged 75.

ANDREA DEL SARTO. See SARTO.

ANDREA MANTEGNA. See MANTEGNA.

ANDREA, in *Geography*. See ANDROS, and ANDREW'S Cape.

ANDRÆ, JOHN GERHARD REINHARD, in *Biography*, an apothecary at Hanover, was born 17th December, 1724. By the attention of his mother he was well educated in the languages and sciences; and in 1744 he visited Berlin, where

where he attended lectures on chemistry, anatomy, botany, and natural history. In the following year he inspected the various mines in Saxony, and proceeded through Leipsick, Halle, the Hartz, and Cassel to Frankfort, where he resided till the Spring of the year 1746. From hence he removed to the university of Leyden, and studied chemistry under Gaubius, botany under Royen, and natural philosophy under Muschenbroek. In the year 1747, he visited England, and returned to Hanover where he succeeded to his father's business, in 1751, and distinguished himself by his skill and diligence. He wrote many useful papers in the Hanoverian Magazine, and other periodical works, by which he gained considerable reputation and esteem; in 1763, he made a tour to Switzerland, the original of which was published in 1776, in a 4to. volume, with engravings; and in 1765 he was charged by government to examine the principal kinds of earth and marl in the electorate, and to publish a work on their nature and use, for the benefit of farmers, which appeared in 1789, under the title of "A Treatise on various kinds of earth in his Britannic Majesty's dominions, &c. and their uses in agriculture." In December 1791, he was attacked by an inflammation of the urethra, which at length terminated in his death, on the first of May, 1793. His writings and collection of natural history procured for him an extensive acquaintance with men of literature and science, and an admission into many learned societies. Gen. Biog.

ANDREÆ, in *Entomology*, a species of CARABUS. The thorax orbicular, black, and glossy; wing-cases pale, with a black band in the middle. Fabricius. Inhabits Italy.

ANDREÆ, is likewise a species of CIMEX, that inhabits the West Indies. It is red, except the antennæ, flank of the legs, beak and wings, which are black. Linnaeus. The cimex ruficollis of Mus. Lud. Ulr., and cimex thoracæ nigro of Thunberg are supposed to be varieties of this species.

ANDREANOFSKIE-OSTROVA, or ANDRENOVIAN isles, in *Geography*, a cluster of islands, between Asia and America, which in a general view may be regarded as the same with the Fox islands, being the western part of the same range; or the Andrenovian isles, in a more limited sense, may be considered as forming a groupe of six or more isles, about 500 miles to the south-east of Beering's island. These, in both respects, are a kind of elongation of the American promontory of Alaska, and in the most recent maps of Russia they are comprehended under one general name of Aleutian isles.

ANDREAS, JOHN VALENTINE, in *Biography*, a Lutheran clergyman, was born in the year 1586; became dean of Vayhingen, chaplain to Everhard III. duke of Wurtemberg, abbot of Bebenhausen, and lastly of Adelberg; and died June 27th, 1654. His principal works are "Mythologia Christiana;" "De curiositate pernicie;" "De restitutione reipublicæ Christi, in Germania;" "Subsidia rei christianæ et literariæ;" "Theophilus, sive de religione christiana colenda;" "Menippus prior et posterior;" "Peregrinus in Patria;" "Fama Andream restitorem," which contains the life of his grandfather; and various poems in honour of Augustus, duke of Wolfenbuttel, inserted in a book, entitled "Scelenia Augustalia." Some have represented John Valentine Andreas, as the founder of the Rosicrucians. Gen. Biog.

ANDREAS, VALERIUS, a learned Brabanter, was born at the village of Dessel, November 25th, 1588. He studied the Greek language at Antwerp, under Andreas Schottus, and the Hebrew under John Hay, a Scots Jesuit; and his proficiency in the latter language was such that he was in-

vited to be professor of it at Louvain. He afterwards applied to the study of the law, and in 1621 obtained the degree of doctor. In 1625 he was appointed professor of the "Iustituta," and in 1638 librarian to the academy. His works are "Orthographiæ Ratio, ab Aldo Manutio collecta, nunc multis aucta; cum libello de ratione interpungendi ac cillinelis notis;" "De Initiis Collegii Bullidiani, deque vita et scriptis professorum ejusdem collegii;" "De Linguae Hebraicæ Laudibus, antiquitate, dignitate, necessitate;" "Dissertatio de Toga et Sago;" "Topographiæ Belgicæ." His principal work was "Bibliotheca Belgica, de Belgis vita Scriptisque claris;" first printed in 1623, and afterwards with considerable additions in 1643. Gen. Biog.

ANDREAS, JOHN, a famous canonist of the 14th century, was the natural son of a priest, and born at Mugello, near Florence. He prosecuted his studies at Bologna, and particularly that of the canon law, under the professor Guy de Baif, who procured for him the degree of doctor, gratis. He was a professor at Padua, about the year 1330, and also at Pisa; but he acquired the greatest reputation at Bologna. He is said to have led a very austere life, macerating his body with prayer and fasting, and lying upon the bare ground for 24 years successively, under a covering of bear-skin. He married a woman named Milantia, by whom he had a beautiful daughter, whom he called Novella, after the name of his mother, and who is said to have read lectures for him when he wanted leisure. Respect for his mother and affection for his daughter induced him to entitle his "Commentary upon the Decretals of Gregory IXth," the "Novellæ." Having lost his natural son Baricontius, who published several books, he adopted a learned canonist, whose name was John Calderinus, and gave him his daughter in marriage. Andreas died of the plague at Bologna in 1348, after having been professor 45 years, and was buried in the church of the Dominicans. He was the author of several books, such as "A gloss upon the sixth book of Decretals;" "Glosses upon the Clementines;" "A Commentary in Regulas Sexti," entitled "Mercuriales," either because it was written on Wednesdays, (dies Mercurii), or because it contained his Wednesday's disputations. He also enlarged the "Speculum of Durant," in 1347. However he has been accused of great plagiarism. Gen. Dict.

ANDREAS, JOHN, was born a Mahometan at Xativa, in the kingdom of Valencia, and succeeded his father as Al-faqi in that city. He was converted to Christianity by a sermon preached in the great church of Valencia, in 1487, and professing his faith was baptized, in memory of the calling of St. John and St. Andrew, by the name of John Andreas. Soon after his conversion, he became a priest and a public teacher, and was employed by king Ferdinand and queen Isabella, on a mission to the Moors of Grenada, many of whom he induced to abjure Mahomet, and to assume the profession of christianity. He was afterwards made a canon, and appointed to undertake the conversion of the Moors of Arragon; but the queen's death prevented the execution of this undertaking. However, he translated from the Arabick into the language of Arragon, the whole law of the Moors, that is, the alcoran and its glosses, and the seven books of the Suni. He also wrote a work, entitled "The Confusion of the sect of Mahmed," for the purpose of exposing the follies of Mahometanism, which was published first in Spanish, has been translated into many languages, and is often cited by those who have occasion to write against the Mahometans, as Hoornbeck, Hottinger, and Schultetus. Gen. Dict.

ANDREAS, TOBIAS, professor of History and Greek at Groningen, was born at Braunfels in the county of Solms, in 1604. He studied at Herborn under Alstedius and his uncle Piscator, and afterwards resided seven years at Bremen. After his return to his own country, in 1628, he removed to Groningen, where he read lectures on all parts of philosophy, and obtained the appointment of tutor to the sons of Henry Altius, his patron, and afterwards in the family of the Prince Palatine. In 1634 he succeeded James Gebhardus, as professor of History and Greek at Groningen, which office he retained till his death in 1676. He was distinguished by his attachment to Des Cartes, whom he vindicated by his writings, both during the life and after the death of that eminent philosopher. He instituted a prosecution against Martin Schookius, professor of philosophy at Groningen, for accusing Des Cartes of atheism. The result was, that the accuser acknowledged Des Cartes's innocence, but was himself acquitted. His "Methodi Cartesianæ Assertio," was published in the year 1653. Gen. Dict.

ANDREAS, JAMES, a famous Lutheran divine, was born at Waibling, in the dutchy of Wirtemberg, in 1528, and though of mean parentage, was encouraged in the prosecution of his studies first at Stutgard and afterwards at Tübingen, where he connected theology and Hebrew with philosophy, and took the degrees of bachelor and master of arts; and in 1546 he was appointed minister of the church of Stutgard; but upon the publication of the "Interim" he was obliged to retire to Tübingen, where he officiated as minister. In 1553 he took the degree of doctor of divinity, and was appointed pastor of the church of Gopping, and superintendent of the neighbouring churches. After performing several trusts that were devolved upon him, in order to promote the reformation from popery, he attended the diet of Worms in 1557, and was appointed one of the secretaries at the conference at Worms between the papists and the divines of the Augustan confession. In 1559 he attended the diet of the empire at Augsberg; and after his return from Paris, in 1561, he was made chancellor and rector of the university of Tübingen. In 1565 he established a church at Hagenaw, an imperial city, where he preached many sermons on the principal points of the Christian religion, which were afterwards printed. He took several journeys, in order to effect an union of the churches of the Augustan confession, and engaged in ineffectual conferences with Beza and others, with a view of terminating theological disputes. His last public act was a conference at Baden, in 1589, with John Pistorius, who then inclined to Calvinism, but afterwards revolted to popery. He had a presentiment of his death for some time before it happened; and upon its approach he expressed his constancy in the faith which he had asserted, and in the exercise of a lively devotion he expired in 1590, in the 62d year of his age. His character and learning were held in high estimation; and the books which he wrote were so numerous, that it was said that he left 150 works upon various subjects. Gen. Dict.

ANDREAS, ST. in *Geography*, a town of Germany, in the circle of Austria and dutchy of Carinthia, upon the river Lavant, with a bishopric suffragan of Saltzburg; 16 leagues east of Clagenfurt.

ANDREASBERG, a town of Germany, in the circle of Lower Saxony, and principality of Grubenhagen, having in its environs some considerable iron-mines, 12 miles from Goslar, and 12 from Northaufen.

ANDREE, YVES-MARY, in *Biography*, a French Jesuit, was born in 1675, at Chateaulin, in the county of Cornouailles. Having occupied the chair of professor

royal of mathematics at Caen, from 1726 to 1759, when he was 84 years of age, and enjoyed a repose of four years, he finished his laborious life in 1764. He was not only a good mathematician, but well acquainted with other branches of learning; and he also wrote elegant verses. Of his "Essay on the Beautiful," written in French, a new edition was given in a collection of his works, published in three volumes, 12mo. in 1766. The subject is treated with perspicuity of method, strength of argument, and dignity of style. Gen. Biog.

ANDREDCHESTER, a town of ancient Britain, supposed by Camden to be Newenden, in Kent, but by Somner to be Pevensey, or Hastings. It was besieged by the Saxons, under Ella, but relieved by the Britons. The town was afterwards taken and levelled with the ground, and the inhabitants were massacred without distinction of age or sex.

ANDREEVNA, in *Geography*, a town of Russia, in the government of Ekaterinoflav, 48 miles south-fourth-east of Ekaterinoflav. N. lat. 47° 50'. E. long. 32° 14'.

ANDREINI, ISABELLA, in *Biography*, a native of Padua, was one of the most celebrated actresses who appeared in Italy in the close of the 16th and beginning of the 17th century. Her person recommended her action: and she not only sung and played well, but possessed an excellent talent for poetry, so that she was universally admired. She was enrolled in the society of "Intenti" at Pavia; and Cinthio Aldobrandini, nephew of pope Clement VIII. wrote many verses in her praise. In France she was honourably received by the king and queen, and principal persons of the court, and in honour of them she composed several sonnets. She died in 1604 at Lyons, in the 42d year of her age, and was buried with distinguishing marks of attention. Her husband wrote an epitaph which bears testimony both to her morals and to her talents. An edition of her poems, consisting of sonnets, madrigals, songs, and eclogues, and a pastoral, intitled "Mirtilla," was published at Milan in 1605; and prefixed to it are many elegiac verses in Latin and Italian, written on occasion of her death. Some letters of hers were published at Venice in 1610. To her other qualifications were added some knowledge of philosophy, and an acquaintance with the French and Spanish languages.

Her husband, Francis Andreini, was a player, famous for rhodomontade parts; after his wife's death he left the stage, and became a writer of the same cast with that of his acting. Their son, John Baptist Andreini, was also an actor and a dramatic writer. A piece of his, called "Adamo," has been an object of curiosity, because it has been supposed to have afforded a hint to Milton in his Paradise Lost. See Hayley's Life of Milton. Gen. Dict.

ANDREJOF, in *Geography*, a town situate near the Borithenes, between Muscovy and Poland.

ANDRELINUS, PUBLIUS FAUSTUS, in *Biography*, a modern Latin poet, was born at Forli, in Italy, about the middle of the 15th century. His taste for poetry was manifested in early life; for his four books "De Amoris," written when he was only 22, were so well received, that he was solemnly crowned at Rome by the Roman academy. Here he became known to Ludovico Gonzaga, duke of Mantua, who patronized him, in 1484, as his own poet. In 1488 he was recommended by Gonzaga to the dauphin of France, and in the next year appointed public professor of belles lettres in Paris, an office which he held 30 years. To his public lectures he added private instructions; and he united with rhetoric and poetry the explanation of the sphere. He obtained honours and lucrative appointments from the kings, Charles VIII, Lewis XII, and Francis I;

and he was also pensioned by Queen Anne, of Bretagne, whence he styled himself, "Poeta regis ac regineus." Andrelinus was celebrated by many of his contemporaries as the first poet of the age, and as having contributed in an eminent degree, to promote literature in France. Erasmus, however, though he praised him when alive, gives an unfavourable account both of his talents and morals after his death. He charges him with licentiousness of manners, and with a tumultuous and quarrelsome disposition. Nevertheless he obtained a high degree of reputation as a professor and writer till the time of his death, which happened at Paris, in February, 1518; and his memory was honoured with elegies, inscriptions, &c. Vossius compares the poetry of Andrelinus, which consisted of sonorous verses and pompous expressions, without much meaning, to a river of words with a drop of sense, and Erasmus contests the grant of this drop. Most of his poems have been inserted in the first volume of the "Deliciae Poetarum Ital." They chiefly consist of elegies, eclogues, and panegyric pieces on various occasions. He also wrote moral and proverbial epistles in prose. Gen. Dict.

ANDRENA, in *Entomology*, one of the new genera in the Fabrician arrangement, consisting, for the most part, of such insects as belong to the *APIS* genus in the system of Linnaeus. The tongue is trifid, or three-cleft, lip cylindrical, and on each side two membranaceous bristles; antennae filiform. Fabricius. In the *Entomologia Systematica* of Fab. are thirty-one species of this genus. *viz.* caerulefscens, rufipes, spiralis, cornuta, labiata, florea, metallica, aenea, cyanea, marginata, helvola, bicolor, tricolor, curvipes, cincta, frigata, nigrita, fasciata, zonata, circulata, pilipes, carbonaria, hirsuta, hirtipes, haemorrhoidalis, gulosa, bidentata, nigricornis, virefscens, cingulata, and fuccinea, which see respectively.

ANDRENEH, in *Geography*. See ANDRONA.

ANDRENOVIAN ISLES. See ANDREANOFKIE-OSTROVA.

ANDRES, or ANDERO *Island*, is situated south-east by east from Cape Gracias a Dios, the farthest point eastward of the province of Honduras, not far from St. Catherine's, or Providence island, to the west-south-west, in N. lat. 12° 30', and W. long. 81° 40'.

ANDRES, a town of Asiatic Turkey, 60 miles east from Angora.

ANDRETTA, a town of Italy, in the kingdom of Naples, and Principato Ultra, six miles north of Conza.

ANDREW, in *Biography*, an apostle of Christ, was born of Jewish parents at Bethsaida, in Galilee. The name of his father, who was a fisherman of that town, was Jonas; and both he and his brother Peter followed that occupation. John Baptist, who was the herald of Christ, and who introduced him to the notice of the Jewish people as the promised Messiah, pointed him out to Andrew and Simon Peter, under the emblematic appellation of the Lamb of God; upon which they accompanied him to the place of his residence. Andrew seems to have been the first disciple of Christ; for he understood the sacrificial allusion of John, and said to his brother, "We have found the Messiah." John i. 35—41. He was afterwards chosen by Christ as one of his twelve apostles. To the brief account given by the evangelical writers of this apostle (Matt. iv. 18—20. Mark i. 16—18. i. 29. xiii. 4. John vi. 7. xii. 20—22.) tradition has added several particulars of less certain authenticity. Eusebius relates, (Eccl. Hist. lib. iii. c. i. p. 71.) that, when the apostles arranged the objects of their mission for the propagation of Christianity, Andrew made choice of Scythia. Other accounts are less worthy of credit than this.

"The Acts of the passion of St. Andrew," which mention his martyrdom at Patre, in Achaia, and said to be written by the priests of Achaia, are preserved in Surius's History of the Saints, and approved by Baronius, Bellarmine, and others of the Romish communion: but they are rejected by the best critics as spurious. The ancients, says Dupin (History of the Canon, &c. vol. ii. p. 149.), knew no other acts of St. Andrew besides those which had been corrupted by the Manichees, mentioned by Eusebius, (Eccl. Hist. lib. iii. c. 25.) Philastrius (Heres. 87.) Epiphanius (Heres. 47. n. 1. Id. 61. n. 1. Id. 63. n. 2.) and Augullin (de fide. cont. Manichaeos) and which pope Geladius has placed among the apocryphal writings. This work was not cited till the seventh century; and neither its doctrine nor language agrees with those of the early ages. Besides, these Acts of St. Andrew are not found in any of the ancient catalogues of the sacred books, nor are they appealed to by any Christian writers, nor read in any of their assemblies, but on the contrary expressly condemned as an impious forgery by every one who has mentioned them. As they contained some doctrines which were favourable to the Manichees, Encratites, Apotacticks, or Apostolicks, and Origenians, it is no wonder that they should have esteemed this apocryphal piece above other scriptures. The "Gospel of Andrew," and other books that have been sanctioned by his name, belong to the same class of apocryphal writings. The relation of those who say that he was crucified on a cross in the form of the letter X, hence vulgarly called St. Andrew's cross, or on an olive tree, which others have asserted, is entitled to no credit; nor indeed is it certain that he was crucified. According to Jerom (Adv. Vigil. p. 22.) his body was removed with St. Luke's to Constantinople in 357. The accounts of this apostle that are given by Gregory of Tours in the sixth century, by Nicephorus of Constantinople in the 9th, and by Nicephorus Callistus in the fourteenth, contain many fabulous particulars. The legend of Gregory, therefore, will claim no regard; which informs us, that streams of oil flowed from the tomb of this saint on the anniversary of his martyrdom, and sometimes swelled to the middle of the church. Dupin, ubi supra. Jones's Canon, vol. 1. p. 145—187. Fabr. Cod. Apoc. Nov. Test. p. iii. p. 526.

ANDREW, bishop of Caesarea, in Cappadocia, lived, according to Cave, about the year 500. He wrote a commentary upon the book of Revelation, prefacing it with asserting the inspiration of the book, for which he appeals to the authorities of Gregory the divine, Cyril of Alexandria, Papias, Irenaeus, Methodius, and Hippolytus, and dividing it into 24 larger, and 72 smaller sections. He appears to have received as authentic all the books of the New Testament which we receive; he mentions the symbols of the four evangelists, *viz.* the lion for John, the calf for Luke, the eagle for Mark, and the man for Matthew. After reciting some opinions with regard to the period of a "thousand years," mentioned in this book, he considers it as denoting the time of the preaching of the gospel, or the time of the gospel dispensation. Cave. Hist. Lit. tom. i. p. 467. Fabr. Bib. Graec. tom. vii. p. 791. Lardner's Works, vol. v. p. 249—252.

ANDREW, bishop of Samosata, was an intimate friend of Theodoret, and flourished in the fifth century. About the year 429 he was appointed by John, bishop of Antioch, to refute, on behalf of the eastern bishops, the "Anathematisms" of Cyril. Under the pretence of illness he declined attending at the council of Ephesus; however, he vigorously opposed the Nestorians, and for many years renewed his hostilities against Cyril. Some curious extracts from his first book against Cyril are found in Cyril's "Apologetics for his

his Anathematifms." Smaller fragments of his second book against Cyril are preserved by Anallafius the Sinaite in his "Hodegos." Eight letters of Andrew, in an ancient Latin version, are published in the collection of "Ephesian Epistles," by Lupus. Cave, Hist. Lit. vol. i. p. 419. Fabr. Bib. Græc. vol. x. p. 124.

ANDREW, bishop of Crete, was a native of Damascus, and flourished at the close of the seventh and beginning of the eighth century. Cave places him about the year 635. The early part of his life was spent by him as a monk at Jerusalem. Theodoret, patriarch of Jerusalem, invited him to attend the sixth general council of Constantinople; and he afterwards copied the acts of that assembly against the Monothelites. He was appointed bishop of Crete, and probably remained in that see till his death, about the year 720. He wrote several homilies, which are extant; and which, according to Mosheim, (Eecl. Hist. vol. ii. p. 174.) are destitute of true piety and cloquence. They were collected, and published in folio by Francis Combefius, at Paris, in 1644. Cave, Hist. Lit. vol. i. p. 582. Fabr. Bib. Græc. lib. v. c. xli. § 2. tom. x. p. 121.

ANDREW, JOHN, secretary of the Vatican library, was employed under the popes Paul and Sextus IV. when printing was first introduced into Rome, in revising MSS., writing prefaces and dedications, and correcting the prefs. Cardinal de Cusa, who had been his school-fellow, gave him the bishopric of Accia in Corsica; and pope Paul II. afterwards appointed him to that of Aleria in the same island, where he died. He published an edition of Livy, and of Aulus Gellius, printed at Rome, in folio, in 1469; of Herodotus, in 1475; and of Strabo, printed at Venice, in folio, in 1472. He was also the editor of the Epistles of Cyprian, and of the works of S. Leo. Nouv. Dict. Hist.

ANDREW, presbyter of Ratibon, was an historian of the 15th century, and flourished under the emperor Sigismund. He wrote in Latin "A Chronicle of the Dukes of Bavaria," published at Amberg; and "A History of Bohemia," in seven books. His countrymen called him a second Livy. Voff. de Hist. Lat. lib. iii. c. 5.

ANDREW I. king of Hungary, was a prince of the blood-royal, and eldest son of Ladislaus the Bald. When Peter was restored in the year 1044, he was obliged to take refuge in Russia; but the idolatrous Hungarians promised to kill Peter, and to expel all foreigners, provided Andrew would abolish the Christian churches. The compact was settled; and, after great slaughter and plunder, Andrew was placed on the throne in 1047, instead of Peter, who was imprisoned, lost his eyes, and soon died. Andrew, however, in violation of his promise, obliged all his subjects to profess Christianity. After having settled his disputes with Albert of Austria, he invited his brother Bela, with his family, to settle in Hungary, and assigned him a third part of his dominions. When the emperor Henry III. invaded Hungary, he was reduced to such straits by Andrew and Bela, that, in order to avoid total destruction, he entered into a treaty, of which it was one condition, that the daughter of Henry should be married to Solomon, the son of Andrew. This son was five years old, and he was then crowned; but, fearing that his brother Bela would disturb the succession, Andrew sent for him, and instructed two of his confidential servants how to act. "I shall offer him," said the king, "a crown, the symbol of the royal authority, and a sword, that of the church. If he chooses the former, instantly put him to death; if the latter, let him live." An officer, who overheard this order, whispered to Bela, "chuse the sword." Accordingly he took the sword, and his brother Andrew was satisfied; but Bela soon after retreated to Poland, and came from thence at the

head of an army to dethrone him. Andrew was protected by the emperor; but, meeting his brother on the banks of the Teifs, he was defeated, abandoned by his own men, and killed in the pursuit, A. D. 1059. Mod. Un. Hist. vol. xxxii. p. 107.

ANDREW II. king of Hungary, was the second son of Bela III. Having occasioned a rebellion against his elder brother Emerick, he was deserted by his army, and, in endeavouring to make his escape, taken prisoner, and brought to Emerick, by whom he was freely pardoned. From this time his sentiments were so changed, that he became a steady supporter of the throne. Upon the death of his nephew Ladislaus, Andrew succeeded, and was crowned by the universal consent of the states. During the first twelve years of his reign he enjoyed unmolested peace; but when pope Honorius III. ordered a new crusade to be preached, Andrew resolved to make an expedition into the Holy Land. He proceeded to Constantinople; but there he heard that during his absence a tragical event had occurred in his kingdom. The government had been entrusted to Banchanus, one of the nobles, and it was administered to universal satisfaction. But the wife of the governor, who was very beautiful, was debauched by Queen Gertrude's brother, who visited her during the king's absence, and the queen was accessory to the dishonour. The injured lady informed her husband of this atrocious act; upon which he revenged himself by slaying the queen; and, rushing out into the street with his bloody sword, he published his wrongs, and the revenge he had taken; declaring, at the same time, that he would not decline a trial, but go immediately to Constantinople to receive the sentence of the king. Andrew acquitted him, and ordered him back to his government. At the trial the accusation against the queen was found to be just. Banchanus was acquitted, but his family was ruined by the resentment of the king's sons. Andrew transported his troops into Syria, and displayed his courage in some conflicts with the Saracens; but, being weary of the expedition, he determined to return home, though he was threatened with excommunication by the patriarch of Jerusalem. He proposed, however, to leave one-half of his troops in Palestine, under the command of the duke of Austria, and with the other half he was allowed to return into Hungary. Accordingly he set sail on board the Venetian fleet, with a variety of precious relics, and with the title of the "Hierosolymitan;" and, in his visit to the prince of Este, by whom he was honourably entertained, he fell in love with his daughter, married her, and took her with him into Hungary. The remaining period of his reign was devoted to the business of healing the discontents of his subjects, and forming a system of legislation. Besides other measures which he adopted, he was the author of a famous decree, which confirmed and augmented the privileges of the nobility, and allowed them to take up arms in their defence, if he or his successors attempted to abridge them: a stipulation nugatory against a powerful monarch, and which has answered no other purpose than that of rendering the aristocracy factions, and the body of the people slaves. Towards the end of his reign the Tartars made some successful inroads into Hungary. Andrew, having reigned 31 years, died in 1235, and left the kingdom to his eldest son Bela, to whom he had ceded the sovereignty before his death. Mod. Un. Hist. vol. xxxii. p. 120—123.

ANDREW III. king of Hungary, was the grandson of Andrew II. and being born and brought up in Venice, obtained the surname of "Venetian." On the death of Ladislaus in 1290, he succeeded to the throne, in opposition to a number of competitors, by the unanimous consent of the Hungarians. In his way from Italy through Austria he was

detained by duke Albert; and obtained a release by promising to espouse Agnes, the duke's daughter. But in the year after his accession he declared war against Albert, and laid waste the country, till at length a peace was obtained by the intercession of the prelates. Upon his return to Hungary, Andrew found his kingdom in a distracted state; the pope and many of the ecclesiastics and nobles having acknowledged the right of Charles Martel, who, in consequence of their invitation, had set out for Hungary with his wife and son, Charles Robert, or Chaubert, then an infant. The majority of the Hungarians were attached to Andrew; but as the party of Charles was very numerous, and Andrew having no children, Charles continued in possession of part of Hungary for several years without opposition. The two rival kings are said to have both died in the same year, 1301. Charles, having gone to the jubilee at Rome, died at Naples. Andrew died at Buda, and, leaving no male issue, the line of St. Stephen terminated in him. Mod. Un. Hist. vol. xxxii. p. 129.

ANDREW, *Knights of St. Andrew, or the Thistle*, commonly called the *Order of St. Andrew*, in Scotland; according to John Lesley, bishop of Ross and others, was instituted by Achais, king of Scots, in memory of an appearance in the heavens of a bright cross in fashion of that whereon St. Andrew suffered martyrdom, and seen by that king the night before the battle which he fought with Athelstan, king of England, over whom prevailing, he went in solemn procession to the kirk of St. Andrew, to thank God and his apostle for the victory; promising that they and their posterity should ever have the figure of that cross in their ensigns and banners. Favin, in his Theatre of Honour, relates it to be instituted upon the famous league, offensive and defensive, made between Achais and Charlemagne, king of France; to preserve the memory of which alliance, Achais added the tressure of fleurs de lys to the lion, the then royal arms of Scotland, and took for device the thistle and rue, which he composed into a collar of his order; and for his motto, *Pour ma Defence*. Menenius makes these the symbols of two different orders; one of the Thistle, whence the Knights were so styled, and the motto, *Nemo me impune lacessit*; the other called *Sortium Ruta*, or Garland of Rue: nevertheless, to both collars hung one and the same jewel, that is, the figure of St. Andrew bearing his cross. Their solemn meeting was annually on St. Andrew's Day, in the church of the town dedicated to his name; at which the knights, thirteen in number, in allusion to our blessed Saviour and the twelve apostles, were richly habited, and wore their parliament robes, having thereon embroidered on their left shoulder an azure roundle charged with a saltier argent, St. Andrew's cross enfilled in centre, with a crown composed of fleur de luces or. The sudden death of James V. of Scotland, the rebellion against Queen Mary, and the troubles which ensued in that kingdom nearly extinguished the order, which continued to be neglected until it was revived by King James II. of England, who, on the 20th of May, 1687, issued his warrant for letters patent to be made out and passed *per saltum*, under the great seal of Scotland. In consequence of this revival several new knights were made, and the order continued to flourish during the remainder of that king's reign; but on his abdication, and the advancement of King William to the throne, the order was again disused.

Queen Anne, by her letters patent, bearing date at St. James's, 31st Dec. 1703, revived, continued, and re-established the order; and ordained by the statutes, "that the number of knights should consist of twelve besides the sovereign, making in the whole thirteen, as heretofore; that the sovereign's habit should be such as the sovereigns them-

selves should think fit to appoint; that the habit of the brethren should be a doublet and trunk-hose of cloth of silver, stockings of pearl coloured silk, with white leather shoes, garters and shoe-strings of green and silver; the breeches and sleeves of the doublet decently garnished with silver and green ribbons; a surcoat of purple velvet lined with white tassetta, girt about the middle, with a purple sword belt edged with gold, and a buckle of gold, at which a sword with a gilded hilt, the shell thereof to be in the form of the badge of the order, and the pomel in the form of a thistle, in a scabbard of purple velvet; over all a mantle or robe of green velvet lined with white tassetta, with tassels of gold and green; and upon the left shoulder thereof, in a field of green, the image of St. Andrew the apostle, bearing before him the cross of his martyrdom of silver embroidery, with a circle of gold round it, upon which the motto, NEMO ME IMPUNE LACESSIT, in letters of green; and at the lower part of it a thistle of gold and green, the flower reddish. That about the shoulder of each knight should be worn the collar of the order, consisting of thistles and sprigs of rue going betwixt, and at the middle thereof before should be hung the image of St. Andrew, chased and enamelled on rays of gold, the cross and feet resting upon a ground of enamelled green, or if of diamonds, to consist of just thirteen in number; and that the collar should be tied to the shoulders of the robe, and the knights have white ribbons upon their heads on days of solemn procession or feasting, where the sovereign is present, or has a commissioner for that effect. That they should wear, at the times of permission, a cap of black velvet, a little divided before, wide and loose in the crown, having a large plume of white feathers, with a black aigrette, or heron's top in the middle of it; the borders of the cap adorned with jewels. That the jewel of the said order should be worn at a green ribbon over the left shoulder, cross the body, and tied under the right arm; such jewel to have on the one side the image of St. Andrew, with the cross before, enamelled as is above said, or cut on stone, enriched with precious stones round it; and on the back, enamelled on a green ground, a thistle gold and green, the flower proper with the before mentioned motto round it.

That the medal of the order should be all of gold, the St. Andrew bearing before him the cross of his martyrdom, with a circle round, and then the motto of the order; and at the lower part of the circle, between the joining of the words, a thistle; and to be worn in a green ribbon as the jewel, at times when the jewel is not worn. That upon the left breast of the coat and cloak should be embroidered a badge of proportionable bigness, being a St. Andrew's cross of silver embroidery, with rays going out betwixt the points of the cross; on the middle thereof a thistle of gold and green, upon a field of green, and round the thistle and field a circle of gold, having on it the motto of the order in letters of green." This order is styled The most Ancient Order, was instituted in 787, restored in 1540, revived in 1687, and re-established in 1703, for the sovereign, twelve knights, and four officers, viz. the Dean, Lord Lyon, King of Arms, Secretary, and Gentleman Usher of the Green Rod. There being no installation of this order, the star and collar are worn immediately after the investiture. See Plate 9.

ANDREW, *St. Knights of*, in Russia. This order was instituted by Peter the Great of Muscovy, in 1698, soon after his return from his first expedition into foreign countries, and intended for animating the nobility in his war against the Turks. St. Andrew was chosen as patron of the order, from the Russian tradition, that he introduced Christianity among them. The Knights of this order, among whom were the kings of Sweden and Poland, wear the figure of the Saint on an enamelled cross, formed by the imperial eagle; at the corners of the cross are the four letters, S. A. P. R. "Sanctus Andreas Patronus

Patronus Ruffie;” and in the middle an A. the initial of the empress Anne, who framed the statutes, and assigned the habit of the order. The feast is held on the 30th of November. In 1790 it had 63 knights. The badge is fastened to a blue ribband, and suspended from the right shoulder; but at festivals is pendent to a collar of gold composed of square chains and roses.

ANDREW'S *Cross*, is a badge worn in the hat by the people of Scotland, on the day of the feast of that Saint.

It consists of blue and white ribbands, disposed into a cross, or *saltire*; and is intended as a commemoration of the crucifixion of St. Andrew, the tutelary Saint of Scotland.

ANDREW'S ST. in *Geography*, an ancient town of Scotland, in the shire of Fife, and formerly the metropolis of the kingdom of the Picts. It is seated on an eminence, and commands an extensive prospect. N. lat. 56° 18'. W. long. 2° 37'. The legendary account of the origin of this city is as follows: St. Regulus, a Greek of Achaia, being warned by a vision to leave his native country, and to visit Albion, an isle situated in the remotest part of the world, was instructed to take with him the arm-bone, three fingers, and three toes of St. Andrew. After a tempestuous passage he was shipwrecked on the coasts of Otholonia, in the territory of Hergulfus, king of the Picts, in the year 370. The king, as soon as he heard of the disaster, ordered the strangers to be respectfully received, and granted to the saint his own palace, near which he built a church, called St. Regulus. The place was then styled Mucrofs, or the Land of Boars. St. Regulus changed the name to Kilrymont, and established the first Christian priests of the country, called Culdees. This church was supreme in the kingdom of the Picts; and Ungus the king ordained that the cross of St. Andrew should become the badge of the country. In 518, after the conquest of the Picts, the episcopal see was established at St. Andrew's, and the bishop was styled, “Maximus Scotorum Episcopus.” It is said to have been erected into an archbishopric at the intercession of James III. This see contained the greatest part of the shire of Fife, with a part of Perth, Forfar, and Kincardine shires, and a great number of parishes and churches in other dioceses.

The town of St. Andrew's was erected into a royal borough by David I. in 1140, and its privileges were afterwards confirmed. The charter of Malcolm II. on a small piece of parchment, is preserved in the tolbooth; and here are also deposited the silver keys of the city, which are delivered to the king if he should visit the place, or to a victorious enemy. The axe, which in 1646 took off the heads of Sir Rt. Spotswood, and other distinguished loyalists, is shewn in this place. St. Andrew's is now much reduced as to the number both of houses and inhabitants, the latter being estimated at about 2000. It is still decorated with magnificent relics of its ancient splendour. The principal of these is the cathedral, which was founded by bishop Arnold in 1161, but it was not completed till the year 1318. Its demolition, however, was effected by John Knox and his followers, in 1559, in one day. The eastern end, with its two high pinnacles, is complete; and one turret of the west point yet remains, adorned with some curious carved work in a peculiar style; but the pillars and some of the arches of the side aisle, exhibit a specimen of the pure Gothic, when it admitted of very little ornament: the precinct of this church forms a common burial-place to the town. In the centre of the inclosure is a plain, square tower, of a very extraordinary height, different in its structure from the cathedral, and not unlike some of the relics of Norman architecture in England. This is the tower of the chapel of St. Regulus, the body of which remains, but the inside chapels are demolished. The arches of

the windows and doors are round, and some exceed semi-circles; whence we may infer the antiquity of the building. Some trace it to a very early period; but it is commonly thought to have been founded in the eighth century, and esteemed the earliest Christian church in Scotland. The priory was founded by Alexander I. in 1122; and the monks, who were canons regular of St. Augustine, were brought from Scone in 1140, by Robert, bishop of this see. By an act of parliament in the reign of James I. the prior had precedence of all abbots and priors; and on the festival days wore a mitre and all episcopal ornaments. The revenues of this priory were very considerable, being in money 2237*l.* 2*s.* 10½*d.* besides large quantities of different sorts of grain, and 480 acres of land. The ruins adjoin to those of the cathedral; and nothing now remains but the inclosing wall, which encompasses a large area, and one single arch, very much defaced. The inclosure extends from the cathedral to the shore. Above the harbour stood the collegiate church of Kirk-heugh, originally founded by Constantine III. who is said to have retired hither from the world, and to have become a Culdee. The remains of the castle occupy the summit of a high eminence, which overhangs the coast. Separated from the town by a deep chasm, over which was a draw-bridge, and from the country by an impetuous sea, foaming over a rocky bed, this castle was justly esteemed one of the strongest fortifications in the island. It was founded in 1401 by bishop Trail; and it was the residence of cardinal Beaton in the zenith of his power and prosperity: but with all his attention to render it, as he conceived, impregnable, it was not of sufficient strength to defend an ambitious ruler against the rage of an exasperated people. In this fortress the cardinal was surpris'd by Norman Leslie, with 15 attendants, in 1546, and assassinated in the midst of his numerous retinue. In 1547 the castle, possessed and guarded only by 150 men for five months, was at last reduced and demolished. The death of Beaton led to the downfall of the Catholic religion in Scotland; and with that religion the finest edifices of St. Andrew's mouldered into ruins, its castle was neglected, and the city deserted. The entrance into the castle is still visible; and strangers are shewn the window out of which, it is said, the cardinal leaned to enjoy the cruel martyrdom of George Wishart, who was burnt on an adjoining spot. Of the four great parallel streets of this city only one now remains entire; one being totally lost, and other two in a very decayed condition. The university of this city was founded in 1411 by bishop Wardlaw. It consisted once of three colleges. St. Salvator's was founded in 1458 by bishop Kennedy. This is an irregular pile of building, of considerable extent, united with a large church, which contains a fine old monument of the founder, who died in 1466. The interior of the college, though spacious, is gloomy, and consists of two large old halls, and a range of apartments in rather a more modern taste, of which, however, only one side is finished. The college of St. Leonard was founded by Prior Hepburn in 1522, but it is now converted into private houses, and the collegiate part is united with the last. The third college is the New, or St. Mary's, which was established by Archbishop Hamilton, in 1553; but the house was begun by James and David Beaton, who did not live to complete it. This has a far more cheerful aspect than the old college, though it is much smaller. The library belonging to the whole university is connected with this college. In this library are kept two curious maces, exquisitely carved in brass work, and a fourth is preserved in the audit-room of the old college. These maces were dug for under the great altar of the cathedral by the direction of an old man, who was said to have in his possession

possession many papers relating to the church and its environs; six were found, one of which was presented to each of the three universities of Edinburgh, Glasgow, and Aberdeen; and the other three are kept at St. Andrew's. On the site of this college formerly stood, as it is said, a "Schola illustis," long before its establishment into an university. It is called the "New College," because of its late erection into a divinity college by the archbishop.

This university is governed by a chancellor, who is elected by the two principals, and the professors of both the colleges. The rector is the officer to whose superintendance are committed the privileges, discipline, and statutes of the university. Each college has a principal; that of St. Salvador has nine professors, and the New College has five professors. The students in the former are generally about 100, and in the latter about 30. This university has many advantages to recommend it in point of situation, instruction, and discipline.

The comerece of St. Andrew's is inconsiderable; and its manufactures, whatever they might formerly be, are reduced to that of golf-balls, which maintains a great number of people.

ANDREW'S, *ST. Bay*, is situated between the Forth and the Tay. The haven is defended from the violence of the easterly sea by a stone pier; the entry is very narrow, and it has only seven or eight feet at neap tides, and ten or eleven at spring tides. The city is at the bottom of the bay close upon the shore.

ANDREW'S, *ST.* a small town of America, in the contested country between New Brunswick and the United States, situated behind an island of the same name, on the east side of the arm of the inner bay of Passamaquoddy, called Scoodick. The town is laid out in the form of an oblong square, and the inhabitants are chiefly employed in the lumber trade.

ANDREW'S, *ST.* is a township in Caledonia county in Vermont, 100 miles north-east from Bennington.

ANDREW'S, *ST.* is also a parish in Charlestown district, South Carolina, containing 2947 inhabitants, of whom 370 are whites, and 2546 slaves.

ANDREW'S, OR ANDRES, *ST. Bay*, a secure harbour in the gulf of Mexico, on the south coast of West Florida in North America. It is situated between Santa Rosa bay on the north-west, and St. Joseph's bay on the south; and being almost surrounded by land, it is well sheltered from almost all winds. N. lat. $30^{\circ} 15'$. W. long. $85^{\circ} 45'$.

ANDREW *Bay*, lies on the north shore of the Straits of Maghellan, between Port Holland on the east, and Cordes bay on the west, at the entrance of which there is a good anchorage in 12 fathoms water.

ANDREW'S, *ST.* OR ANDREA, *Cape*, lies on the west coast of Madagascar island, in the Indian or eastern ocean, and nearly east from Mozambique, on the coast of Africa. S. lat. $15^{\circ} 46'$. E. long. $45^{\circ} 22'$.

ANDREW'S, *ST. Cape*, lies also on the eastern coast of South America, between Rio de la Plata, on the north-north-east, and Anegada bay on the south-south-west. S. lat. $37^{\circ} 55'$. W. long. $60^{\circ} 45'$.

ANDREW'S, *ST. Cape*, is also on the north shore of Maghellan Straits, in the reach which trends from Cape Forward to the West.

ANDREW'S *Cape*, OR ANDREA, lies on the east point of Cyprus. N. lat. $35^{\circ} 31'$. E. long. $34^{\circ} 55'$.

ANDREW'S, *ST. Island*, OR ANDREA, is a small island in the gulf of Venice, on the west side of Lissa island.

ANDREW'S, *ST. River* and *Point*, lye on the coast of Africa, north-east by east from Cape Palmas, at the distance of 20 or 30 leagues. They are situated in that track

of coast, extending seven leagues, which is called the Red Cliffs, or Red Land. Although no ships go up this river, a considerable traffick is carried on by means of the canoes of the Negroes, who bring down teeth for sale. Wood and water may be procured here, but no provisions.

ANDREW'S, *ST. Sound*, lies south of Jekyl's island, and is formed by this and a small island at the mouth of the Great Sagilla River. The small river opposite to this sound separates Camden from Glynn county, in Georgia.

ANDREW'S, LANCELOT, in *Biography*, an English divine, was born at London in 1565, and was bishop of Winchester, in the reign of James I. and Charles I. From Merchant Taylors' school he was sent to Pembroke Hall in Cambridge; and by his assiduous application he became acquainted with the sciences and most modern languages, and he excelled more especially as a casuist, and was often consulted in cases of conscience. The following anecdote will illustrate this part of his character: a corpulent alderman of Cambridge, who had been often reproved for sleeping at church, and whose conscience troubled him on this account, applied to him for advice. Andrews told him it was an ill habit of body and not of mind, and advised him to eat little at dinner. The alderman tried this expedient, but found it ineffectual. He applied again with great concern to Andrews, who advised him to make a hearty meal as usual, but to take his full sleep before he went to church. The advice was followed, and the alderman came to St. Mary's church, where the preacher was prepared with a sermon against sleeping at church, which was thrown away, for the good alderman looked at the preacher during the whole sermon time, and spoiled his design. Andrews's lectures, as a casuist, were attended by a numerous auditory. His learning, popular talents as a preacher, and zeal for the Protestant cause, procured for him the patronage of Henry Earl of Huntingdon, and Sir Francis Walsingham, secretary of state to Queen Elizabeth; and he passed through several stages of preferment to the deanery of Westminster. Whilst he resided in London as prebendary and residentiary of St. Paul's, he read divinity lectures in that cathedral three times a week during term time; and he also maintained a connection with his college, of which he was chosen master, and to which he was a liberal benefactor. Andrews's style of preaching, which was pedantic and quaint, suited the taste of king James I. so that he was a great favourite with this prince. The king selected him in order to vindicate his sovereignty against the vehement attack of Bel-larmine, who, in reply to "James's Defence of the Rights of Kings," had written a tract under the fictitious name of Matthew Tortus. The dean's answer was intitled "Tortura Torti;" or Tortus Tortured, and printed in 4to. in 1609. This service was so acceptable, that in this year he was advanced from the see of Chichester, to which he had been promoted in 1605, to the bishoprick of Ely; and he was also nominated a privy counsellor, first for England, and afterwards for Scotland, where he attended the king in his journey to that kingdom. In 1618 he was raised to the bishoprick of Winchester, and the deanery of the king's chapel, which preferments he held till his death, which happened at Winchester-house, in Southwark, in 1626, in the 71st year of his age. He was buried in the parish church of St. Saviour's, Southwark, and a monument of marble and alabaster was erected over his grave, on which is an epitaph written by one of his chaplains in the highest style of panegyric. Bishop Andrews appears to have been a man of eminent talents, acquisitions, and virtues. He is said to have understood 15 languages: he employed a large portion of each day in devotion and study; and his learning and affability commanded the respect not only of his own countrymen,

men, but of foreigners, by whom he was visited; such as Vossius, Grotius, Casaubon, Cluverius, Erpinus, and Dumoulin. His first biographer, Isaacson, informs us, that in the distribution of preferment he was disinterested, impartial, and judicious; that he provided liberally for the descendants of his early instructors and benefactors; that, after he became bishop, he never visited either of the universities without leaving 50 or 100*l.* to be distributed among poor scholars; that his charity kept pace with his advancement, his private alms amounting in the last six years of his life to upwards of 1300*l.* and that, as he died a bachelor, he left large legacies to charitable uses; and among the rest, a great part of his estate to be distributed among his servants. Bishop Andrews was a faithful son and zealous defender of the church; at the same time he was moderate in his political principles, independent in his spirit, and superior to the mean adulation that disgraced the court of James, as the following anecdote, related in the life of Waller the poet, will shew. Mr. Waller, going to the king at dinner, overheard a conversation between his majesty and two prelates, the bishop of Winchester and Dr. Neale, bishop of Durham, who were standing behind the king's chair. His majesty asked the bishops, "My lords, cannot I take my subjects' money when I want it without all this formality in parliament?" The bishop of Durham readily answered; "God forbid, Sir, but you should; you are the breath of our nostrils." Whereupon the king turned and said to the bishop of Winchester, "Well, my lord, what say you?" "Sir," replied the bishop, "I have no skill to judge of parliamentary cases." The king answered, "No put off's, my Lord, answer me presently." "Then Sir," said he, "I think it lawful for you to take my brother Neale's money, for he offers it." Milton thought bishop Andrews worthy to be celebrated by his pen; and, at the age of 17, wrote an elegy on his death, abounding with that rich fancy which has rendered his works immortal. The works of bishop Andrews, besides that already mentioned, are, "A Manual of Private Devotions;" "A Manual of Directions for the Visitation of the Sick;" a volume of tracts chiefly in Latin, consisting of sermons, theological dissertations on the ecclesiastical rights of princes, tythes, usury, &c. published in 4*to.* in 1629; a posthumous volume of "Sermons," published in folio by direction of the king, and under the inspection of the bishops of London and Ely; "The Moral Law explained; or Lectures on the Ten Commandments," with other sermons, printed in folio in 1642; and "A Collection of Posthumous and Orphan Lectures," delivered at St. Paul's and St. Giles's, Cripplegate, printed in folio in 1657. The sermons of bishop Andrews, though learned and pious, afford many specimens of that pedantry and false wit which marked the period in which he lived, and cannot be read with pleasure in an age of more correct taste. Biog. Brit.

ANDRIA, in *Antiquity*, a name given by the Cretans to the public entertainments, at which whole cities, tribes, or other bodies of men, were present. They were first instituted by Minos of Crete, and, after his example, appointed by Lycurgus at Sparta. They were conducted with the greatest frugality and decorum, and persons of all ages were admitted to them.

The hall, or place of eating, where these entertainments were held, was denominated *andrion*, in the uppermost part of which was a constant table set apart for strangers.

ANDRIA, is also used by some naturalists, to denote a species of hermaphrodite, wherein the female sex has the predominancy.

ANDRIA, in *Ancient Geography*, now the *Indre*, a river

of the interior of Gaul, which, uniting with the *Caræ*, discharges itself into the *Liger*.

ANDRIA, a town of Greece, in the district of Elis.

ANDRIA is also a town of Macedonia.

ANDRIA, or ANDRI, in *Geography*, a town of Italy, in the kingdom of Naples and province of Bari; the see of a bishop suffragan of the archbishop of Trani. It is situated in a valley with hilly environs, about four miles from the coast of the Adriatic, five miles west-south-west of Trani. This town is said to have been built by Peter the Norman, and to have derived its name from the antra or caverns in which the first settlers took up their abode. N. lat. 41° 15'. E. long. 16° 17'.

ANDRIACA, in *Ancient Geography*, a town of Thrace, on the coast of the Euxine sea, near Salmydessus, according to Strabo.

ANDRIACA is also a town of Asia Minor, in Lycia. According to Appian this was the port of Mira; but M. d'Anville places it to the south-west of Mira.

ANDRIACA is a town placed by Ptolemy in Media.

ANDRICLUS, a high mountain in Cilicia Trachea, placed between the promontory of Anemurium, and the river Selinus.

ANDRICUS, a river of Cilicia, according to Pliny.

ANDRIMACHIDES, a people of Africa whose country is not known; but Alexander ab Alexandro reports, that their king obtained the first favour of the young women before they were introduced to their husbands.

ANDRINOÛLE, in *Geography*. See ADRIANOÛLE.

ANDRIPOURA, or INDRAPOOR, a country of the island of Sumatra, including a town of the same name, and several others; the chief article of commerce is pepper. The town is situated on a rapid river, 60 miles north-west of Bencoolen. S. lat. 2° 15'. E. long. 101°.

ANDRISCUS, called by the Romans *Pseudo-philippus*, in *Biography*, is said to have been a native of Adramyttium, and descended from mean parents. He assumed, however, the character of a natural son of Perfes, 16 years after the death of the king of Macedon, pretending, that his father had sent him to Adramyttium in disguise, and that he was not to disclose the secret of his birth till he arrived at the age of 14 years. Resembling Perfes in his person, the story was more credible; and accordingly he went to the court of Demetrius Soter, who had married a daughter of that king. Demetrius, either suspecting the imposture, or dreading the Romans, delivered him up to the republic. From Rome he made his escape, and sought refuge in Thrace. Here he assembled a number of persons, who became attached to his interest, and, marching to Macedon, he asserted his rightful title to the crown. Having made himself master of the country, he extended his conquests to the adjacent parts of Greece. Scipio Nasica was deputed by the Romans to restrain his progress; and, by the aid of a body of auxiliaries, he drove him back to Macedon. When the prætor Juventius Thallus was commissioned to terminate the war, he advanced to Macedon, and was attacked, defeated, and slain by Andriscus. In consequence of this advantage Andriscus was established on the throne, and the Carthaginians sent ambassadors to congratulate him, and to propose an alliance. Andriscus, however, could not endure prosperity; but became cruel and oppressive, and lost the affection of his subjects. At this time the Romans sent Q. Cæcilius Metellus to Macedon, and Andriscus was under a necessity of valiantly contending for his crown and life. After some trifling advantage which he gained at first, he was entirely defeated, and compelled to retire into Thrace. The Thracians enabled him to return with a numerous army, but he was again defeated by Metellus;

tellus; and seeking refuge with Byzas, a petty prince of Thrace, he was delivered by him to the Romans. Metellus led him in triumph, in the year before Christ 147; and he was afterwards put to death by the Senate. The Roman general, who succeeded in the war against Andrius, obtained the appellation of *Macedonicus*; and it has been doubted whether Andrius was an impostor, or the son of a king. Mod. Un. Hill. vol. viii. p. 98—105.

ANDRIUS, in *Ancient Geography*, a river of Asia, which, according to Strabo, ran into the Scamander.

ANDRO, PORT, in *Geography*, in the island of Belleisle, on the coast of France, is found the easternmost point of the island, called Point de Locmaria on the south side.

ANDROCALIS, in *Ancient Geography*, a town of Ethiopia, near Egypt, according to Ptolemy.

ANDRODUS, in *Ancient Writers*, denotes the sixty-third year of a man's life, otherwise called *annus ægypticus*, and *climacter magnus*.

ANDROGEUS, in *Entomology*, a species of PAPILO (Eq. Tr.) that inhabits Summam. The wings are black and bronzed; on the under side lunated spots of blue, red, and yellow. Fabricius and Gmelin. This species is very similar to papilio polydamas; and the PAPILO ACANTHUS of Cramer is considered as a variety (β) of it.

ANDROGYNA, in *Botany*, plants bearing male and female flowers on the same root, or bearing some flowers with stamens only and some with pistils only on the same root, without any mixture of such as are hermaphrodite. Of this we have examples in the melon and cucumber.

ANDROGYNUM, in *Ecclesiastical Writers*, is used to denote *matrimony*, or even one of the parties married.

ANDROGYNUM, *balneum*, denotes a bath common to both sexes.

ANDROGYNUS, or ANDROGYNOUS, *ανδρογυνος*, a compound of *ανρ*, man, and *γυν*, woman, q. d. *man-woman*, an appellation distinguishing those living creatures, which, by a monstrous formation of their generative parts, seem to unite in themselves the two sexes, that of the male and female, and synonymous with hermaphrodite. See HERMAPHRODITE. The term is also applied in *ancient mythology* to fabulous creatures, each individual of which possessed the faculties and distinguishing characters of both sexes, having two heads, four arms and feet. Some fanciful writers have reported, that the first man was created with two bodies, a male and a female, and that of these God made two persons, by separating one body from the other. See ADAM. It is generally said, that this was a fiction of the Rabbins; but there is reason to believe that it was of more early original. Plato's fable of the *Androgynes* indicates the tradition to which he had recourse; and it confirms the supposition, that a figment of this kind might have had its first rise in those early times, when the Egyptians and Phœnicians disguised the plain narratives which they found of the origin of things with their fables and mythology. See Euseb. Præp. Evang. lib. i. c. 10. According to Plato's account (in Conviv. Oper. vol. iii. p. 191. ed. Serrani) the Gods formed man with two bodies and two sexes. This fantastic being, possessing in itself the whole human system, was endowed with a gigantic force, and became insolent, so as to make war against the gods. Jupiter, exasperated at this insolence, determined to destroy it; but relenting, and averse from utterly annihilating the human race, he contented himself with debilitating this compound being by separating the male from the female, and leaving each half to subsist with its own powers alone. The office of reforming the separate bodies, and extending their skins so as to cover the whole

surface, was assigned to Apollo, who fastened it to the umbilicus. If this half rebelled, it was to be subdivided by another section, so that only one of the parts, which then composed it should be left; and even this fourth part of a man was to be annihilated, if it should persist in its obstinacy and mischievous attempts. The idea of these *Androgynes* might possibly be borrowed from a passage in Moses's account of the creation, in which he represents Adam as calling Eve "bone of his bone, and flesh of his flesh." A French poet has made an ingenious application of this fable of Plato. He attributes, as the philosopher does, the propensity by which the sexes incline to one another to the natural ardour which each half of the androgynes feels for re-union, and their inconstancy to the difficulty which each of the disjointed parts encounters in its efforts to recover its proper and original half. If a woman appears to us amiable, we instantly imagine her to be that moiety with whom we should only have constituted one whole, had it not been prevented by the infolence of our original double-sexed progenitor.

"The heart, with fond credulity impress'd,
Tell us the half is found, and hopes for rest;
But 'tis our curse, that sad experience shews,
We neither find our half, nor gain repose."

The astrologers also give the appellation *androgynous* to such of the planets as are sometimes hot, and sometimes cold; as Mercury, which is reputed hot and dry when near the sun, and cold and moist when near the moon.

ANDROIDES, in *Mechanics*, compounded of *ανρ*, *ανδρ*, man, and *ειδος*, form, an AUTOMATON, in the figure of a man; which, by virtue of certain springs, &c. duly contrived, walks and performs other external functions of a man. Albertus Magnus is recorded as having made a famous *androides*, which is said not only to have moved, but to have spoken. The construction of this machine must have been very ingenious and complex, if it be true that he was employed upon it 30 years. Thomas Aquinas is said to have been so frightened when he saw this head, that he broke it to pieces; upon which Albert exclaimed "Periit opus triginta annorum." Artificial puppets, which, by internal springs, run upon a table, and, as they advance, move their heads, eyes, or hands, were common among the Greeks, and from thence they were brought to the Romans. They were known by the name of "Neuropasta," and were much used at their shows. Aristotle (De Mundo, c. vi.) speaks of some which moved their heads, eyes, hands, and limbs in a very natural manner. They are also particularly mentioned by Galen, (De Ufu partium, lib. iii.) Xenophon, (Sympos.) Antoninus, (De Seipso, ii. 2. iii. 5. vi. 16. vii. 3. xii. 9.) Horace, (Sat. ii. 7. 82.) Gellius, (lib. xiv. 1.) and others. That Dædalus made statues which could not only walk, but which it was necessary to tie, that they might not move, is related by Plato, (Meno, Oper. tom. ii. p. 97. and Euthyphron, Oper. tom. i. p. 11.) Aristotle, and others. The latter speaks of a wooden Venus, and informs us, that the secret of its motion consisted in pouring quicksilver into it. The Chinese have used quick-silver for giving motion to puppets, and their method of doing it is described by Musæhebroke, (Introd. ad Philos. Nat. vol. i. c. iii. iv. lviii. p. 143, &c.) Figures or puppets, which appear to move of themselves, were formerly employed to work miracles; but this use is now superseded, and they serve only to display ingenuity, and to answer the purposes of amusement. One of the most celebrated figures of this kind was constructed by Vaucanson, and exhibited by him at Paris, for the first time,

in 1738; and a particular account of it was published in the Memoirs of the Academy for that year. This figure represents a flute-player, which was capable of performing various pieces of music by wind issuing from its mouth into a German flute, the holes of which it opened and shut with its fingers. The figure was about $5\frac{1}{2}$ feet high, placed upon a square pedestal $4\frac{1}{2}$ feet high, and $3\frac{1}{2}$ broad. The air entered the body by three separate pipes, into which it was conveyed by nine pairs of bellows, which expanded and contracted, in regular succession, by means of an axis of steel turned by clock-work. These bellows performed their functions without any noise, which might have discovered the manner by which the air was conveyed to the machine. The three tubes, which received the air from the bellows, passed into three small reservoirs in the trunk of the figure. Here they united, and ascending towards the throat, formed the cavity of the mouth, which terminated in two small lips, adapted in some measure to perform their proper functions. Within this cavity was a small moveable tongue, which, by its motion at proper intervals, admitted the air, or intercepted it in its passage to the flute. The fingers, lips, and tongue derived their proper movements from a steel cylinder turned by clock-work. This was divided into 15 equal parts, which, by means of pegs pressing upon the ends of 15 different levers, caused the other extremities to ascend. Seven of these levers directed the fingers, having wires and chains fixed to their ascending extremities, which, being attached to the fingers, made them to ascend in proportion as the other extremity was pressed down by the motion of the cylinder, and, *vice versa*; then the ascent or descent of one end of a lever produced a similar ascent or descent in the corresponding fingers, by which one of the holes of the flute was occasionally opened or stopped, as it might have been by a living performer. Three of the levers served to regulate the ingress of the air, being so contrived as to open and shut, by means of valves, the three reservoirs above mentioned, so that more or less strength might be given, and a higher or lower note produced as occasion required. The lips were, by a similar mechanism, directed by four levers, one of which opened them to give the air a freer passage, the other contracted them, the third drew them backward, and the fourth pushed them forward. The lips were projected upon that part of the flute which receives the air, and, by the different motions already mentioned, modified the tune in a proper manner. The remaining lever was employed in the direction of the tongue, which it easily moves so as to shut or open the mouth of the flute. The just succession of the several motions, performed by the various parts of this machine, was regulated by the following simple contrivance. The extremity of the axis of the cylinder terminated on the right side by an endless screw, consisting of twelve threads, each placed at the distance of a line and a half from the other. Above this screw was fixed a piece of copper, and in it a steel pivot, which, falling in between the threads of the screw, obliged the cylinder to follow the threads, and, instead of turning directly round, it was continually pushed to one side. Hence, if a lever was moved, by a peg placed on the cylinder, in any one revolution, it could not be moved by the same peg in the succeeding revolution, because the peg would be moved a line and a half beyond it by the lateral motion of the cylinder. Thus, by an artificial disposition of these pegs in different parts of the cylinder, the statue was made by the successive elevation of the proper levers to exhibit all the different motions of a flute-player, to the admiration of every one who saw it. Another figure, constructed by Vaucanson, played on the Provençal shepherd's pipe, held in its left hand, and with the right beat upon a drum, or tambour de

Basque. Another automaton, of the ingenious contrivance of Vaucanson, was a duck of the natural size, which moved its wings, exhibited all the gestures of that animal, quacked like a duck, drank water, ate corn, and voided something like excrement. We may here observe, that the flute-player of Vaucanson was not the first of its kind. In the beginning of the 16th century, the anonymous author of the poem, entitled, "Zodiacus Vitæ," saw at Rome a figure made in like manner by a potter, but no account is given of its construction. The performances of Vaucanson were imitated, and even exceeded, by M. de Kempelen of Pressburg, in Hungary. The androides constructed by this gentleman in 1769 was capable of playing chess. It was brought over to England in 1783 by its inventor, and remained here for more than a year. The figure is as large as life, in a Turkish dress, seated behind a table, with doors $3\frac{1}{2}$ feet long, 2 deep, and $2\frac{1}{2}$ high. The chair on which it sits is fixed to the table, which is made to run on four wheels. It leans its right arm on the table, and in its left hand holds a pipe; with this hand it plays after the pipe is removed. A chess-board of 18 inches is fixed before it. The table, or rather chest, contains wheels, levers, cylinders, and other pieces of mechanism, all of which are publicly displayed. The vestments of the figure are then lifted over its head, and the body is seen full of similar wheels and levers. There is a little door in its thigh, which is likewise opened; and with this, and the table also open, and the figure uncovered, the whole is wheeled about the room. The doors are then shut, and the automaton is ready to play; and it always takes the first move. At every motion the wheels are heard; the image moves its head, and looks over every part of the chess-board. When it checks the queen it shakes its head twice, and thrice in giving check to the king. It likewise shakes its head when a false move is made, replaces the piece, and makes its own move, by which means the adversary loses one. M. de Kempelen has exhibited his automaton at Petersburg, Vienna, Paris, and London, before thousands, many of whom were mathematicians and chess-players, and yet the secret by which he governed the motion of its arm was never discovered. He valued himself upon the construction of a mechanism, by which the arm could perform ten or twelve moves. It then needed to be wound up like a watch, after which it was capable of continuing the same number of motions. This automaton could not play unless M. de Kempelen, or his assistant, was near it, to direct its movements. A small square box was frequently consulted by the exhibitor during the game, and in this consisted the secret, which the inventor declared he could communicate in a moment. Any person who could beat M. de Kempelen at chess, was sure of conquering the automaton.

There have been many speaking machines, which seem to answer various questions proposed, sometimes in different languages, sing, and even blow a huntsman's horn. The figure, or perhaps only a head, is often placed upon a box, the fore part of which, for the better deception, is filled with a pair of bellows, a sounding board, a cylinder and pipes, supposed to represent the organs of speech. At other times the machine is only like a peruke-maker's block, hung round with a Turkish dress, furnished with a pair of arms, and placed before a table; and sometimes the puppet stands upon the table, or against a wall. The sounds are heard through a speaking trumpet, which the figure holds in its mouth. Some have pretended, that the voice of machines of this kind does not proceed from a man, but that it is produced by mechanism, like the music of an organ. Some affirm, that the voice issues from the machine itself; others, that the juggler answers, by speaking in the manner of ven-

triloquist, from the lower part of his belly, or by having the power to alter his voice; and some believe that the answers are given by a man somewhere concealed. It is, however, well known, that a child or a woman is concealed in the juggler's box; or that some person, in a neighbouring apartment, speaks into the end of a pipe, which proceeds through the wall to the puppet, and which conveys the answer to the spectators. The invention of causing statues to speak, by this method, seems so simple, that one can scarcely forbear conjecturing, that it was anciently employed to support superstition; and many have imagined that the greater part of the oracles were delivered in this manner. See Van Dale de Oraculis, 4to. Amst. 1700. p. 222. Whether the head of Orpheus spoke in the island of Lesbos, or, as is more probable, the answers were conveyed to it by the priests, as was the case with the tripod at Delphi, cannot be now ascertained. That the impostor Alexander, however, caused his Æsculapian to speak in this manner is expressly related by Lucian. He took, says this author, instead of a pipe, the gullet of a crane, and transmitted the voice through it to the mouth of the statue. In the fourth century, when Bishop Theophilus broke to pieces the statues at Alexandria, he found some which were hollow, and placed in such a manner against a wall, that a priest could slip unperceived behind them, and speak to the ignorant populace through their mouths. Theodoret, Eccl. Hist. lib. v. c. 22. p. 228. Ed. Valesii. Beckman's Hist. of Inventions, vol. iii. p. 317, &c. See AUTOMATON.

ANDROLEPSY, formed of *ανω*, man, and *λαμβανω*, capio, I take, in *Antiquity*, an action against those who protected murderers, by which if an Athenian were killed by a citizen of some other place, and such city refused to deliver up the criminal to punishment, it was held lawful to take three inhabitants of that city, and to detain them, till the murderer had either surrendered himself, or satisfied the law. This the Greeks called *androlepsia*, and the Romans CLARIGATIO. Some authors also use *androlepsia* for REPRISALS.

ANDROMACHA, in *Entomology*, a species of PAPHILIO (Parnassius) that inhabits New Holland. Wing above and beneath alike, dotted with black; anterior pair naked, posterior pair yellowish. Fabricius and Gmelin.

ANDROMACHA, a species of SPHINX, (zygaena of Fabricius) that inhabits America. It is black, wings transparent, margin and band black, tail red. Gmelin. The sphinx caenus of Cramer is supposed to be a variety of this species.

ANDROMACHE, in *Biography*, the wife of Hector, was the daughter of Aëtion, king of Thebes, in Cilicia. She lived in the happiest conjugal union with her husband till his death. At the siege of Troy she had the affliction of witnessing the precipitation of her son Astyanax from a high tower, and of being herself a captive slave to Pyrrhus, the son of Achilles, who was the deadly foe of Hector. She afterwards became the concubine of Pyrrhus, and had children by him. After the death of Pyrrhus, or, as some say, during his life, she married her fellow-captive Helenus, a son of Priam, and brother of Hector; and she reigned with him over part of Epirus, and perpetuated a race from whom Pyrrhus, king of Epirus, the antagonist of the Romans, is fabled to have sprung. Several tragedies, ancient and modern, have been composed on the subject of Andromache; but the interest of the most pathetic poem probably arises from sentiments foreign to her period and character. Gen. Dict.

ANDROMACHUS of Crete, was physician to the emperor Nero. He invented the composition, called after him, Theriaca Andromachi, which he dedicated to the service of

Nero, in a copy of Greek verses that have been preserved to the present time. Galen wrote two books in commendation of the medicine. It was given as an antidote against the poison of the viper, and was soon supposed to have equal power against all other poisons, and to prevent or cure malignant and infectious fevers. The emperor Antonine is said to have made daily use of the composition, and it was kept constantly prepared in the palace by several succeeding emperors. The formula, or process for making it, is described by Aræteus and by Galen, as well as by the inventor in his verses to Nero. The Venetians became so famous for making this medicine, which they sent for sale to all parts of Europe, that it is now more commonly known by the name of Theriaca Venetæ, Venice treacle, than by that of the inventor. Andromachus is said to have been the first physician who was dignified with the title of Archiater. Haller, Bib. Med. Pract.

ANDROMEDA, in *Astronomy*, a constellation of the northern hemisphere, representing the figure of a woman almost naked, with her feet at a distance from each other, and her arms extended and chained.

It is supposed to have been formed in memory of Andromeda, daughter of Cepheus and Cassiopeia, and wife of Perseus, by whom she had been delivered from a sea-monster, to which her father had exposed her to be devoured, in order to preserve his kingdom from the plague. Minerva translated her into the heavens.

Dr. Hook thinks he has discovered the hidden meaning of the story of Andromeda. Vide Poët. Works, p. 401. Andromeda is sometimes called in Latin, "Persea;" "Mulier catenata;" and "Virgo devota;" and the Arabians have changed the figure of this constellation from that of a woman to that of a sea-calf. Schickard has changed the name for that of "Abigail;" and Schiller calls it the "holy sepulchre;" and exhibits it under that figure. The stars in the constellation Andromeda, in Ptolemy's catalogue, are 23, in Tycho's 23, in Hevelius's 47, in Mr. Flamsteed's no less than 66. About 27 of these stars are visible to the naked eye, of which the principal are, α Andromeda's head, β in the girdle, called mirach, or mizar, and γ on the south foot, named alamac, and sometimes alhamec.

Some of the stars of Andromeda have been reckoned among the changeable stars, whose brightness varies. Mr. Pigott and Dr. Herschel have made observations on their relative brightness, for which see Phil. Transf. vol. lxxvi. p. 203. 212. vol. lxxxvii. p. 307. 321.

ANDROMEDA, in *Botany*, ledum of Mich. chamædaphne and polyfolia of Buxb. and erica of Tournefort, a genus of the *decandria monogynia* class and order, of the natural order of *bicornes* and *erica* of Jussieu. Its characters are, that the calyx is a perianthium, five-parted, acute, very small, coloured, and permanent; the corolla is monopetalous, campanulate, and quinquefid, clefts reflex; the *filamina* have subulate filaments, shorter than the corolla, and scarcely fixed to it, anthers two-horned and nodding; the pistillum is a roundish germ, style cylindrical, longer than the filaments, and permanent, stigma obtuse; the *pericarpium* is a capsule, roundish, five-cornered, five-celled, five-valved, opening at the corners, partitions contrary, and the seeds are very numerous, roundish, and shining. *Obs.* It differs from *erica* in number. In some species the corolla is ovate, in others perfectly campanulate. The anthers in some are awned, in others awnless.

Martyn enumerates 25, and Gmelin 21 species. 1. *A. tetragona*, with peduncles solitary and lateral, corollas bell-shaped, and leaves opposite, imbricate, obtuse, and revolute. This resembles the *passerina filiformis*, but the flowers are very different, and

and similar to those of the lily of the valley; the leaves are generally four-fold, whence its square appearance, and the name tetragona. Linnæus first observed it growing very sparingly in Lapland, in 1732; and Gmelin found it on the mountains of Siberia. 2. *A. hypnoides*, with peduncles solitary and terminal, corollas bell-shaped, and leaves crowded and awl-shaped. It has the appearance of a moss, spreads over large tracts of ground in the Lapland Alps, and adorns them with its beautiful red flowers, the anthers are awned; it is also found in Denmark and Siberia. 3. *A. cerea*, with peduncles axillary, two-leaved, and one-flowered, and leaves alternate, ovate, and serrate; the leaves are on short petioles, the corolla is bell-shaped, and the anthers oblong, yellow, two-horned at the back. It is brought from the island of Otaheite. 4. *A. cerulea*, erica folio abietis, flore arbuti of Buxb. with peduncles aggregate, corollas ovate, and leaves scattered, linear obtuse, and flat; the anthers are without awns. It grows wild on the mountains of Lapland, more plentifully on those of Dalecarlia and Jemtia, and is also found in Denmark and Siberia. 5. *A. Mariana*, Maryland A. with peduncles aggregate and branched, corollas ovate-cylindrical, and leaves oblong ovate, quite entire, and deciduous; the anthers are without awns; a native of North America; introduced here in 1736 by Peter Collinson, Esq. There are two varieties, α with oval leaves, and β with oblong leaves; the corollas are shaped like those of arbutus, are of an herbaceous colour, appear in June and July, and are sometimes surrounded by fruit, which seldom ripens in England. 6. *A. ferruginea*, rusty A. with peduncles aggregate, axillary, corolla subglobose, and leaves elliptic, quite entire, and beneath scaly-scarious. This is a native of North America, was cultivated here by Mr. J. Gordon in 1776, and flowers in July and August. 7. *A. polifolia*, polifolia of Buxb. erica humilis, &c. of Pluken, rhododendron polifolium of Scop. ledum palustre nostras arbuti flore of Ray, with peduncles aggregate and terminal, and leaves alternate, lanceolate, revolute, beneath glaucous. Martyn enumerates three varieties, *viz.* α *A. pol. latifolia*, broad-leaved marsh A. with leaves oblong, corollas ovate and flesh coloured, segments of the calyx spreading, ovate, and white, sometimes red at the tip. β *A. pol. media*, common marsh A. or wild rosemary; with leaves lanceolate, corollas oblong-ovate red, and segments of the calyx more erect. γ *A. pol. angustifolia*, narrow-leaved marsh A. with leaves lanceolate linear, and segments of the calyx oblong and red. This is an elegant little shrub, which rises from six or eight inches to a foot in height, erect and branched; the flowers are fleshy and nodding, the calyx is red, the corolla of a pink colour, the anthers awned, the capsule erect and five-furrowed, the style white, with a purple stigma, and the seeds very many and small. It is a native of America and the northern countries of Europe on turf bogs; in Russia, Sweden, Denmark, Germany, Switzerland, and in Britain, on the mooses of Cheshire, Lancashire, Westmoreland, Cumberland, Yorkshire, and Scotland, as on Brigflon moss, near Kendal, Middleton moss, by Lancaster, on Blackstone-edge, between Halifax and Rochdale, upon Solway moss in great quantities, and not unfrequent in peat-bogs in the lowlands of Scotland. It flowers in June, and is called mars chituns, wild rosemary, Poley mountain, moor-wort, and marsh holy rose. There is some difference in the varieties as found in North America (α), in Europe (β), and in Newfoundland and Labrador (γ), as above specified. 8. *A. bryantha*, bryantha of Gmelin, with flowers corymbed, leaves elliptic, and prostrate stem. This comes up in thick clumps, like wild thyme, on the rocks of Kamtschatka. 9. *A. dabocia*, erica dabocii, erica Hibernica, &c. of Ray, Irish whorts, Cantabrian heath, or trailing Andromeda, with ra-

ces pointing one way; flowers quadrifid, ovate, and leaves alternate, lanceolate, and revolute. This was formerly an erica, and wants one-fifth in the parts of fructification, and ought, perhaps, with droseroides and carnica, to be removed to that genus. This species has the habit or air of an andromeda, but the character of an erica. The seed-vessel is a four-celled, four-valved capsule; it has been observed to grow only in the Irish bogs, and flowers in June and July. 10. *A. droseroides*, erica glutinosa of Berg. chamæcilus roris folis foliis of Pct. clammy A. with racemes pointing one way, and leaves linear, hairy and viscid. The number of parts of fructification varies from 4 or 8 to 5 or 10; it is lighter to N° 9, and has all the habits of Andromeda; a native of the Cape of Good Hope. 11. *A. paniculata*, panicled A. with racemes terminal, panicled, corollas roundish, and leaves ovate, rather entire; the stem is about four feet high; the flowers grow in loose spikes from the ends of the branches, being shaped like those of arbutus, only a little longer, and appearing in July, but not producing seeds in this country; the anthers are awned; a native of Virginia, and cultivated here in 1748 by Archibald, duke of Argyle. 12. *A. japonica*, with racemes panicled, cylindrical and bracted, and leaves elliptic, reflex, and serrate at the tip. This is a tree, a native of Japan, near Nagasaki, and flowers in December. 13. *A. arborca*, tree—Andromeda, or forrel-tree, with panicles terminal, corollas rather downy, and leaves elliptic, pointed, and tooth-letted. This is in Virginia a shrub, growing 10 or 12 feet high, but in Carolina it rises 20 feet; the branches are slender, and bend downwards; the flowers grow in long, naked spikes from the sides of the branches, they are of an herbaceous colour, and ranged on one side of the stalk. Cultivated here in 1752 by Mr. Miller. 14. *A. racemosa*, branching or Pennsylvania Andromeda, with racemes terminal, simple, and bracted, corollas cylindrical, and leaves oblong-lanceolate, and serrate. This was found in Pennsylvania by Kalm, introduced here in 1736 by P. Collinson; flowers in July. 15. *A. axillaris*, notch-leaved A. with racemes axillary and simple, corollas oblong, leaves ovate, acute, and serrulate. A native of Carolina, introduced in 1765, and flowering from May to August. 16. *A. coriacea*, thick-leaved A. with racemes axillary and simple, leaves ovate, very entire, very shining, and branchlets three-cornered; found in North America, introduced in 1765, and flowering in July and August. 17. *A. acuminata*, A. lucida of Jacq. acute-leaved A. with racemes axillary and simple, leaves ovate-lanceolate, acuminate and serrate. This is a shrub about four feet high, upright and smooth, with round branches, leafy to a considerable extent; the flowers smell like honey, the perianthium is green, the corolla snow-white. It is a native of North America, was introduced in 1765, and flowers in July and August. 18. *A. calyculata*, calyced A. with peduncles solitary, axillary, and pointing one way, two bractes, and leaves oval, scaly-dotted, and obsoletely serrulate. There are three varieties: α *A. cal. ventricosa*, chamædaphne of Buxb. globe-flowered calyced A. with globose corollas, and oblong-lanceolate leaves; β *A. cal. latifolia*, broad leaved calyced A. with corollas oblong-cylindrical, and leaves oblong-oval, and obtuse; γ *A. cal. angustifolia*, narrow-leaved calyced A. with corollas oblong-oval, and leaves oblong-lanceolate. This is a low shrub, with leaves of similar shape and consistence to those of the box tree, with small punctures on them; the flowers grow in short spikes at the extremes of the branches, single, between two leaves, and white; the leaflets are oval on the racemes, and from the axil of each proceeds a solitary, pedicelled flower; the calyx is covered at the base, with two ovate leaflets; the anthers are oblong, bifid, and awnless; growing in Sweden, Ingria, Siberia, and North America, on mossy land;

land; cultivated in 1748 by Archibald, duke of Argyle. There is some difference in the varieties from Russia (α), Newfoundland (β), and North America and Siberia (γ).

19. *A. anastomozans*, with racemes crowded and leafy; leaves ovate, slightly ferrate, anastomizing underneath; and dotted. This is a shrub with hairy branches, ovate corollas, two-awned anthers, and obtuse capsules, gaping at the angles; found by Mutis in New Granada.

20. *A. rufeshris*, with leaves oblong, alternate and ferrulate. A native of New Zealand.

21. *A. faliifolia*, willow-leaved *A.* with racemes pointing one way, and naked, corollas subcylindrical, and leaves lanceolate, acute, and quite entire; found by Commerfon in the island of Mauritius.

22. *A. buxifolia*, box-leaved *A.* with racemes pointing one way, and naked, corollas subcylindrical, and leaves cordate-ovate, quite entire, with a little dagger point. This and the former species differ scarcely at all in their fructification, or in the structure of their leaves, and are distinguishable only by their form; this, however, has none of those lines parallel to the midrib that are so conspicuous in the other species. It is a native of the isle of Bourbon where it was found by Commerfon.

23. *A. fasciculata*, with peduncles aggregate, leaves alternate, ovate-lanceolate, obtuse, slightly crenulate and coriaceous.

24. *A. Jamaicensis*, with peduncles aggregate, corollas ovate transparent, leaves alternate, broad-lanceolate, obtuse, entire, beneath ash-coloured and membranaceous.

25. *A. olandra*, with peduncles aggregate, corollas cylindrical quadrifid, and leaves alternate, ovate-lanceolate, entire, and membranaceous. The three last species are natives of Jamaica. Gmelin enumerates the following species besides several of those above described, *viz.* *A. ferruginosa*, with flowers aggregate, axillary, and terminal, leaves rounded at the margin, revolute, and beneath ferruginous; suggested not to be distinct from the *A. ferruginea*; *A. nitida*, with peduncles aggregate and axillary, leaves alternate, lanceolate-ovate, entire and permanent; *A. catechxi*, with racemes ovate and axillary, leaves alternate, petiolate, ovate-lanceolate, ferrulate and permanent; *A. reticulata*, with racemes ovate and axillary, leaves ovate, acuminate, crenulate, alternate, petiolate, beneath reticulate and permanent.

Culture. Most of the species are hardy, deciduous shrubs, which delight in moist ground; they may be increased by their creeping roots, which put up suckers at a distance, that may be taken off with roots, and transplanted where they are to remain. Those that are imported from America may be propagated by seed sown in the spring in a bed of moist earth; they may be increased by layers in autumn. The 13th sort must be sheltered from frost in winter, and in summer frequently watered. It grows naturally in boggy places, and requires greater heat than that of this climate. Martyn's Miller.

ANDROMEDA, in *Entomology*, a species of PAPILO (*Parnassius*) found in India. The wings are roundish, transparent, white: posterior pair red at the tip, with a single eye-shaped spot on each side. Fabricius and Gmelin.

ANDROMEDA, in *Natural History*, is likewise a species of MEDUSA amongst the VERMES MOLLUSCA. It is hemispherical, without marginal arms; eight round, ramose, foliaceous arms on the under part. Foisk. Fn. Arab. Gmelin. This kind is extremely abundant on the coasts of the Red Sea. The body is transparent, and of a pale brownish colour with white rays; the margin is entire; in the middle is a black cross: the arms are white, and rather thicker than a goose quill at their base. Gmelin, &c.

ANDROMEDA, in *Middle Age Writers*, denotes a kind of garment made of ram-skins.

ANDRON, or ANDRUM, in *Antiquity*, an apartment in

houses assigned for the use of the men. This was otherwise denominated *androna*, and *andronitis*. The andron stood opposed to the GYNÆCÆUM, or apartment of the women. The Greeks also gave their dining-rooms the title andron because the women had no admittance to feasts with the men.

ANDRONA, in *Ancient Writers*, denotes a street, or public place, where people met and conversed together. In some writers androna is more expressly used for the space between two houses. In which sense the Greeks also used the term *αὐδῆων*, as for the way or passage between two apartments. The word is sometimes also written *andra*, *andron*, and *andronium*.

ANDRONA is also used, in *Ecclesiastical Writers*, for that part in churches destined for the men. Anciently it was the custom for the men and women to have separate apartments in places of worship, where they performed their devotions asunder; which method is still religiously observed in the Greek church. The *αὐδῆων*, or androna, was on the southern side of the church, and the women's apartment on the northern.

ANDRONICUS I. COMNENUS, in *Biography* and *History*, was the son of Isaac and grandson of Alexius Comnenus, and one of the most conspicuous characters of the age, so that his genuine adventures might form the subject of a very singular romance. He was strong and beautiful; the want of the softer graces was supplied by a manly countenance, a lofty stature, athletic muscles, and the air and deportment of a soldier; and the preservation of his health and vigour in old age, was the reward of temperance and exercise. Dextrous in arms, he was ignorant of fear; his persuasive eloquence could accommodate itself to every situation and character of life; and in every deed of mischief, he had a heart to resolve, a head to conceive, and a hand to execute. In his youth he followed the retreat of the Roman army, and in the march through Asia Minor he wandered into the mountains, was taken by Turkish huntsmen, and became a captive to the sultan. Both his virtues and his vices recommended him to the favour of his cousin, the emperor Manuel; and whilst he lived in public incest with his niece Theodora, Andronicus openly maintained a licentious intercourse with her sister Eudocia, who gloried in the name of his concubine. She accompanied him in his military command in Cilicia, where he pressed, with active ardour, the siege of Mopsuella; but he was surpris'd and thrown into disorder by a fall of the enemy. On his return to the Imperial camp in Macedonia, Eudocia attended his motions; and their tent was suddenly attacked at midnight by her brothers, who were impatient to expiate her infamy in his blood. Refusing to assume a female habit, in compliance with her advice, he started from his couch, and cut his way through the assassins with his sword. At this time he engaged in a treasonable correspondence with the king of Hungary and the German emperor; in consequence of which he was arrested, and strictly confined in a tower of the palace of Constantinople. In this prison he remained for more than 12 years; and after repeated and ineffectual attempts to escape, in which he manifested singular resolution and dexterity, he at last succeeded, and retired to the court of the great duke of Russia. Having gained this asylum, he solicited the Russian prince to join his arms to those of Manuel in the invasion of Hungary, and thus obtained forgiveness from the emperor; and, after a campaign on the Danube, he returned with Manuel to Constantinople. By refusing the oath of allegiance, which he was required to take to the prince of Hungary, who became the presumptive heir by marrying the emperor's daughter, he again incurred

curred his displeasure; and he was punished by an honourable exile to a second command of the Cilician frontier, with the absolute disposal of the revenues of Cyprus. Here he engaged the affections of Philippa, sister of the empress Maria, and daughter of Raymond of Poitou, the Latin prince of Antioch. In connection with her he pursued a course of dissipation for some time, till Manuel's resentment interrupted his pleasures. His intercourse with Philippa being obstructed, he collected a band of desperate adventurers, and undertook the pilgrimage of Jerusalem. In this military undertaking he so far succeeded as to captivate the esteem of the clergy and of the king, and to obtain the lordship of Berytus, on the coast of Phœnicia. In this neighbourhood resided Theodora, great grand-daughter of the emperor Alexis, and widow of Baldwin the Third, king of Jerusalem, who was young and beautiful, and a princess of his own family. Theodora became the third victim of his amorous seduction; and her shame was more public and scandalous than that of her predecessors. The emperor's resentment still pursued him; in Palestine he was no longer safe; and Theodora disclosed his danger, and accompanied his flight. Damascus was his first place of refuge; and having visited several other parts of the east, probably Bagdad and the courts of Persia, he made a long circuit round the Caspian Sea and the mountains of Georgia, and finally settled among the Turks of Asia Minor, the hereditary enemies of his country. He made frequent inroads in the Roman province of Trebizond, and seldom returned without an ample harvest of spoil and of Christian captives. Theodora was at length surpris'd by the governor of Trebizond, and, together with her two children, was sent to Constantinople; upon which Andronicus implored and obtained a final pardon; with leave to throw himself at the feet of his sovereign, who was thus satisfied. He acted the part of a humble and constant penitent with such success, that his sins were forgiven both by the church and state; and he was sent by the emperor to reside at a distance from the court, namely, at Oenœ, a town of Pontus, surrounded with rich vineyards, and situate on the coast of the Euxine.

Soon after this event the death of Manuel in 1177, who was succeeded by his son Alexis Comnenus, at the age of 12 or 14 years, without vigour, wisdom, or experience, opened a new career to his ambition. A civil war having been excited in Constantinople by the misconduct of the empress dowager, the views of the people were directed to Andronicus. Urged to interpose for quelling the disturbance that prevailed, and for restoring the public tranquillity, both by the patriarch and the patricians, he began his march from Oenœ towards Constantinople; his slender train insensibly swelled to a crowd and an army; and he soon reached the city, took possession of the palace, saluted the emperor, confined his mother, punished her minister, and re-established the public order and peace. His wicked designs were for some time disguised by his hypocrisy; but he hastened to manifest the cruelty of his disposition by putting to death many persons whom he thought ill-affected towards him, and by causing the empress herself to be tried and executed on a charge of treason, in corresponding with Bela, king of Hungary. After the coronation of the young emperor, at which Andronicus solemnly attended and vowed fidelity, with the sacrament in his hands, he found means to represent the necessity of committing the empire to the care of some person of experience, and to engage the people, as well as the emperor himself, to solicit the association of a colleague. Having successfully conducted this part of the farce, his adherents unanimously exclaimed, "Long live Alexis and Andronicus, Roman emperors!"

And the artful hypocrite was elevated, by acclamation, apparently against his own consent, and merely to protect the young emperor and to support his authority, to a partnership in the empire. This partnership, which was merely a preparatory step to the sole sovereignty, he soon terminated by the death of Alexis, whom he caused to be strangled with a bow-string; and the tyrant, insensible to pity or remorse, after surveying the body of the innocent youth, struck it rudely with his foot: "Thy father," he cried, "was a knave, thy mother a whore, and thyself a fool!" Having thus attained to the dignity of sole emperor, A. D. 1183, he swayed the sceptre about three years and a half, as the guardian or sovereign of the empire. His government exhibited a singular contrast of vice and virtue: when he listened to his passions he was the scourge, and when he consulted his reason he was the father of his people. In the exercise of private justice he was equitable and rigorous; the provinces, which had been neglected and oppressed, revived in prosperity and plenty; and millions applauded the distant blessings of his reign, while he was cursed by the witnesses of his daily cruelties. The noblest families, especially those who claimed any alliance to the Comneni, were either massacred or exiled. At length his throne was subverted by a rival without merit, and a people without arms. Isaac Angelus, a descendant, in the female line, from the great Alexis, being marked as a victim, defended his life and liberty, slew the executioner, and fled for refuge to the church of St. Sophia. The populace were roused, and Isaac was instantly raised from the sanctuary to the throne. Andronicus, who was indulging himself in the delicious islands of the Propontis, in the society of a young wife and a favourite concubine, returned with all speed to Constantinople; but he found, upon his arrival, that he was universally deserted, and that no condition which he proposed, however self-denying and humiliating, would be accepted. Accordingly he attempted to make his escape; but he was pursued and taken in his flight, and brought back, loaded with fetters, and with a long chain round his neck, to the presence of Isaac Angelus. "His eloquence, and the tears of his female companions, pleaded in vain for his life; but instead of the decencies of a legal execution, the new monarch abandoned the criminal to the numerous sufferers, whom he had deprived of a father, an husband, or a friend. His teeth and hair, an eye and a hand were torn from him; and a short respite was allowed, that he might feel the bitterness of death. Astride on a camel, without any danger of a rescue, he was carried through the city, and the basest of the populace rejoiced to trample on the fallen majesty of their prince. After a thousand blows and outrages, Andronicus was hung by the feet, between two pillars that supported the statue of a wolf and a sow; and every hand that could reach the public enemy, insisted on his body some mark of ingenious or bloody cruelty, till two friendly or furious Italians, plunging their swords into his body, released him from all human punishment. In this long and painful agony. 'Lord, have mercy upon me!' and 'Why will you bruise a broken reed?' were the only words that escaped from his mouth. His death, in the 73d year of his age, closed a reign of two years, and with him terminated the dynasty of the Comneni. *Anc. Un. Hist.* vol. xv. p. 158, &c. *Gibbon's Hist.* vol. ix. p. 93—108.

ANDRONICUS, CYRRETES, or of Cyrrhus, was an Athenian astronomer, and celebrated as the inventor of weathercocks. He erected an octagon tower of marble, on each side of which he engraved figures representing the eight winds mentioned by Vitruvius, under the names of:

Solanus, Taurus, Auler, Abent, Favonius, Cornu, Septentio, and Aquilo. A copper Triton, holding in its hand a disk, turned upon a pivot, and shewed the direction of the wind. Salmastius gives the form of this tower in his commentary on Solinus. Ant. Gell. lib. vi. c. 22.

ANDRONICUS, LIVIUS, the oldest of the Latin poets, is said to have been a Greek slave, and to have been emancipated by Livius Salinator, whose children he instructed, and whose name he assumed. His performances were chiefly dramatic and comic, and he acted in his own pieces; and, it is said, that when he became hoarse, he caused the words to be recited by a servant, while he himself exhibited the gesticulation. He also wrote hymns to the gods, one of which, in honour of Juno, is said, by Livy and Valerius Maximus, to have been sung through the city by girls. An odyssey is also attributed to him. Some lines, which are quoted by grammarians and critics, are the only relics of him, and they have been printed in the fragments of the other ancient Latin poets, in the "Comici Latini," and the "Corpus Poetarum." Andronicus represented his last piece on the stage, A. U. C. 514. B. C. 240, a year before the birth of Ennius. Vossius.

ANDRONICUS of *Rhodes*, a peripatetic philosopher, came to Rome in the time of Cicero, and served to revive and establish the philosophy of Aristotle. Andronicus collected the writings of Aristotle, by means of the library of Apellicon, sent to Rome by Sylla, and Tyrannio's use of it, arranged, corrected, transcribed, and published them; and, according to Plutarch, he annexed indexes to them; so that he may be considered as a restorer of these writings. Andronicus wrote a paraphrase of Aristotle's Categories and Physics, and probably of some other pieces, but none are extant, unless the paraphrase of Aristotle's Ethics, published under his name by Heinsius, 8vo. at Leyden, in 1617, and at Cambridge in 1679, be his, which Salmastius, Vossius, &c. dispute. It is doubted whether a small treatise "On the Passions," published by David Hoerschelius, in 1593, was written by this Andronicus. Plut. Vit. Sylla apud Oper. tom. i. p. 468. Gen. Dict.

ANDRONICUS of *Theffalonica*, flourished in the 15th century, and among other learned men, who left Constantinople when it was taken by the Turks, contributed to the revival of letters. He taught Greek at Rome, and was entertained in the house of Bessarion; but his salary was so inconsiderable that he was obliged to leave Rome and repair to Florence; whence he removed to Paris, where he died at an advanced age. His knowledge of the Greek language and of Greek authors exceeded that of any of his contemporaries; but he was disqualified for public speaking by a bad pronunciation. Gen. Dict.

ANDRONION, in *Physic*, the name of a pastil, invented by an ancient physician named Andro, said to have been of great efficacy against the carbuncle and HERPES. Its ingredients, according to Ægineta's prescription, are the *squama* of copper, *as ustum*, *sul ammoniac*, *alumen rotundum*, shavings of verdegris, and frankincense, all wrought up with wine. Celsus gives another recipe, and Aetius a third.

ANDROPHAGI, from *ανδρ*, man, and *φαγω*, I eat, among *Ancient Geographers*, denoted man-eaters. These were more usually called *anthropophagi*. Herodotus and Pomp. Mela speak of a nation of androphagi, in Scythia, who observed neither laws nor justice, and had nothing in common with the other inhabitants but their dress and occupation of feeding cattle.

ANDROPOGON, q. d. *man's beard*, in *Botany*, a genus of the *polygamia monoecia* class and order, and of the na-

tural order of *gramina*, or grasses. Its characters are, that the hermaphrodite flowers are sessile, that their *calyx* is a glume, one-flowered, two valved, oblong, obtuse, cartilaginous and awnless, the outer valve concave, flattish at the back, embracing the inner, which is narrower, with its edges; the *corolla* is a two-valved glume, less and more slender than the calyx; outer valve smaller, often very small, within the inner valve of the calyx, sharp or blunt at the end, in most of the species awned; awn terminating, or from the cleft of the glume, long, with a bent joint, and twisted at bottom; the inner valve lanceolate, doubled at the edges; necessary two leaved; leaflets thickish and diaphanous; the *stamens* have three filaments, capillary, very tender; anthers oblong, forked at both ends, and incumbent; the *pyllium* is an oblong germ, 4yles two, and capillary, stigmas oblong, and feathered; no *pericarpium*; glumes of the corolla and calyx involving, and inclosing the leed; the *seed* solitary, oblong, and covered, armed with the awn of the corolla, which easily falls off. The male flowers are peduncled, single, or in pairs to each hermaphrodite; the *calyx*, *corolla*, and *stamens* as in the others, except that the corolla has no awn. Martyn enumerates 35, and Grædin 33 species. 1. *A. caricifolium*, gramin ca-icolum of Rumph. with spikes solitary and imbricate, seeds shaggy, awns naked and contorted. *A.* native of Amboina and Japan. 2. *A. contortum*, Ægilops Maderas-patana, &c. of Scheuch. gramin fecalinum indicum, &c. of Pluk. and Mor. with spike solitary, male flowers awnless on the back of the spike, female flowers on the belly of it twice as long as the males, with twisted approximating awns, longer than the whole spike. A native of the East Indies; introduced into Kew Garden in 1779 by Anthony Chamier, Esq. 3. *A. crinitum*, with spikes solitary and shaggy; awns naked, jointed, and very long. A native of Japan; found by Thunberg. 4. *A. divaricatum*, lagurus humilior, &c. of Gron. Virg. &c. with spike oblong, flowers woolly, remote and divaricate; awn flexuose and naked. A native of Virginia. 5. *A. gryllus*, Ægilops bromoides spica purpurascens of Scheuch. gramin sparteum festucum, &c. of Barr. gramin avenaceum, &c. of Monti, with peduncles of the panicle entirely simple and three-flowered; the hermaphrodite floscule sessile, awned, ciliate, and bearded at the base. A native of Piedmont, Verona, Montpelier, Carniole, the Grisons, and Switzerland. 6. *A. saccharoides*, with branches of the panicle simple, florets in pairs, hermaphrodite awned sessile, the other awnless, pedicelled, withering, pedicel and rachis woolly. A native of Jamaica. 7. *A. nutans*, with panicle nodding, awns twisted and polished, glumes of the calyx shaggy. A native of Virginia and Jamaica. 8. *A. ciliatum*, with panicle nodding, outer calyx many-flowered and ciliate, awns contorted and hairy. Found by Thunberg on the mountains of Nagasaki in Japan; flowering in September. 9. *A. ferratum*, with panicle loose, one floscule sessile, villose at the base; the other pedicelled, with the pedicel villose, and shorter than the calyx. A native of Japan. 10. *A. cotuliferum*, with panicle spreading, villose, awn-twisted, naked, pedicels clubbed or swelling at top, and hollowed like a saucer or dish. A native of Japan. 11. *A. cymbarium*, with panicle scattered, bractes boat-form, flowers transverse, awned, and threefold. A native of the East Indies. 12. *A. squarrosum*, *A. muricatum* of Retz, with panicle crowded, glumes awl-shaped and rugged. Koenig observed it in Ceylon, swimming on deep pools; it is used by the natives for its pleasant smell; they also make fans of it. 13. *A. prostratum*, with peduncles in five-flowered umbels, without calyces, the hermaphrodite floscule awned. A native of the East Indies. 14. *A. fastigiatum*, with spikes of the panicle solitary, peduncles

riuncles elongate subfastigate, rachis woolly, floscules awned, and male fertile. A native of Jamaica. 15. *A. alopecuroides*, gram. dactylon, &c. of Sloane, with panicle loose; rachis woolly, and a twisted awn to each floscule. A native of Jamaica and Virginia. 16. *A. distachyum*, with spikes two, terminal, and eulm undivided. Linnæus says that it grows wild in Switzerland. Scheucher had it from Smyrna. 17. *A. schœnanthus*, lagurus of Fl. Zeyl. gram. ad juncum accedens aromaticum majus syriacum of Mor. gram. dactylon aromaticum, &c. of Pluken. schœnanthus of Bauhin and Ray, sweet rush, or camel's hay, with spike of the panicle conjugate, ovate-oblong, rachis pubescent, floscules sessile, with a twisted awn. It is brought over from Turkey and Arabia. In bundles about a foot long, consisting of smooth stalks, in shape and colour resembling barley straws, full of a fungous pith like that of rushes. It has an agreeable smell, and a warm, bitterish, not unpleasant taste. Distilled with water it yields a small quantity of a yellowish, fragrant, and pungent essential oil, and the remaining decoction is bitterish, and somewhat acrid. The spirituous extract is pleasantly aromatic and bitterish. This plant was formerly employed as a warm stomachic, and deobstruent; but in our country its use is superseded by more common aromatic vegetables. It is kept in the shops merely as an ingredient in the mithridate and theriaca; but these compositions being excluded from the pharmacopœias, the schœnanthus, or juncus odoratus is left out of our materia medica. Lewis and Murray. 18. *A. Virginicum*, gram. dactylon bicorne tomentosum minus of Sloane, with spikes of the panicle conjugate, peduncles simple, rachis woolly, floscules awnless, the male one wanting. A native of America. 19. *A. bicorne*, lagurus of Linn. hort. cliff. and Gron. Virg. gram. dactylon bicorne tomentosum maximum, spicis numerosis of Sloane, with spikes of the panicle conjugate, peduncles branching very much, rachis woolly, awn caducous, male floscule wanting. A native of the East Indies, on dry hills, and there called by the English fox-tail grass. 20. *A. hirtum*, gram. dactylon spica gemina of Scheuch. gram. dactylon siculum, &c. of Pluk. with spikes of the panicle conjugate, and calyces shaggy. A native of Portugal, Italy, Sicily, and Smyrna. 21. *A. insulare*, gram. avenaceum, &c. of Sloane, with panicle loose and smooth, floscules double and awnless, one pedicel shorter, calyces woolly. A native of Jamaica. See *Panicum lanatum*. 22. *A. barbatum*, with spikes digitate, calyces permanent, and corollas ciliate. A native of the East Indies; introduced into Kew gardens, in 1777, by Dr. Solander. 23. *A. pubescens*, chloris ciliata of Swartz, with spikes digitate, calyces subtriflorous, outer petals awned, keel and edge of the hermaphrodite flower ciliate. A native of Jamaica; introduced at Kew in 1779, perennial, and flowering from July to September. 24. *A. nardus*, lagurus of Fl. Zeyl. with branches of the panicle superdecompound and proliforous. See *Spikenard*. 25. *A. muticum*, with spikes digitate, mostly three, and floscules alternate, sessile, and awnless. A native of the Cape of Good Hope. 26. *A. ischaemum*, gram. dactylon, &c. of Scheucher, with many digitate spikes, sessile floscules, awned and awnless, and woolly pedicels. A native of the southern parts of Europe, growing on mountains, hills, and other dry situations; introduced to Kew, in 1778, by Mr. Thomas Blackie. 27. *A. fasciculatum*, chloris radiata of Swartz, gram. dactylon, &c. of Mor. many-spiked andropogon, with spikes fascicled, very many and smooth, calyces two-flowered, valves acute, smooth and even, the outer like petals, and awned, the inner floscule barren. A native of Jamaica; introduced in 1779, and flowering from July to September. 28. *A. polydactylon*,

chloris polydactyla of Swartz, gram. dactylon elatrus of Sloane, with spikes fascicled, outer petals awned, those of the lower floscule ciliate-bearded. A native of Jamaica. 29. *A. glaucum*, with panicle leafy, involuclcs and calyces two-flowered, calyces of the sessile flowers three-valved, of the peduncled ones two-valved. A native of the East Indies, whence it was sent by Koenig. 30. *A. serratum*, with spike simple, imbricate, with two rows of awned sessile flowers, and two of awnless pedicelled ones, calyces one-valved. A native of Bengal, where it was found by Koenig. 31. *A. incurvatum*, with spikes filiform, subdigitate, flowers twin, the female pedicelled and awned, the male sessile and awnless, the calyces one-valved. Found by Koenig in Tranquebar near rivers. 32. *A. binatum*, with spikes twin, woolly, one valve of the calyces acuminate, the other truncate, three toothed, the larger petal-awned. Observed in the East Indies by Koenig. 33. *A. aciculatum*, with panicle contracted upright, peduncles three-flowered, male-flowers two, pedicelled, and acuminate, female sessile and awned. A native of the East Indies in barren places. 34. *A. Bladhii*, with spikes about eight, hermaphrodite floscule, sessile, awned, neuter peduncled, ciliate, and awnless. A native of China, and sent from thence by Bladh. 35. *A. provinciale*, with spikes fascicled, smooth, floscules alternate subsessile, directed one way, and awned. A native of the south of France, where the seeds were sent by Dahl. Gmelin has omitted the 23d, 27th, and 28th species above enumerated, and introduced the following, viz. *A. brevifolium*, with spikes lateral and solitary, floscules alternate and remote, and stalk geniculated and compressed. *A. ramosum*, with spikes terminal conjugate, with double spiculæ, the male awnless and pedicelled, with ramos stalk. *A. annulatum*, with spikes at the top of the stalk crowded and alternate, flowers adpressed and germinate, the male awnless and pedicelled, and an erect, ramos stalk. *A. undatum*, with an erect, ramos panicle, spikes alternate, floscules by threes; the males inferior and later. *A. aser*, with spikes three and terminal, and floscules all awned. Gmelin suggests that this is the Gir Gir, or Geshe el Aube of Abyssinia, described by Bruce in his Travels, vol. v. Appendix, p. 47. Gmelin makes a distinct species of the *A. muricatum* of Koenig, which is above referred to the *A. squarrosolum*, and describes it as having a contracted panicle, verticillated spikes, and calyces awnless and muricated.

Culture. Few of these grasses have been cultivated in European gardens; as they are for the most part natives of the East or West Indies, they would require the protection of a stove. Martyn's Miller.

ANDROPOGON. See SACCHARUM and STIPA.

ANDROS, in *Ancient Geography*, now ANDROS, one of the most fertile and delightful islands in the Archipelago Sea, lies near the south end of Negropont. According to Pliny it was 93 miles in circumference, and had various names, viz. Cueros, Lafia, Nonagnia, Epagris, Antandros, and Hydrusia. It is said to have borrowed the name of Andros from one Andrius, who, according to Diodorus Siculus (lib. v.), was one of the generals whom Rhadamanthus appointed to govern the Cyclades, after their voluntary submission to him. Conon will have this Andrius to be the son of Anius, and grandson of Apollo and Creusa, and to have been the first who settled in this island. It received the name of Antandros, signifying "for one man," from its having been given as his ransom by Afcanius, the son of Æneas, when taken prisoner by the Pelasgians. The territory of Andros is still one of the most fertile and pleasant countries in the Archipelago, producing all kinds of delicious fruit, and watered with numerous springs, whence it

had;

had the name of Hydrusia, from *Hydrus*, *water*. The Andrians were the first of all the islanders who joined the Persians; and, therefore, Themistocles, after the victory at Salamis, resolved to attack the city of Andros, and put it under large contributions for the maintenance of his fleet. Having landed his men in the island, he acquainted the magistrates, that the Athenians were come, with two powerful divinities on their side, "Persuasion and Force;" and therefore they must part with their money, by either fair or foul means. The Andrians replied, that they likewise had two mighty deities, who were very fond of their island, "Poverty and Impossibility," and therefore could give no money. Herodotus, lib. viii. c. 3. Themistocles, dissatisfied with the answer, laid siege to the town. The event is not known; but it is probable that the Athenian general made himself master of the place, since Pericles, as Plutarch (in Pericl. Oper. tom. i. p. 156.) informs us, a few days after, sent thither a colony of 250 Athenians. It was not long after retaken by the Persians, and in vain besieged by Alcibiades, who, after having taken and fortified the castle of Gaurium, left Thrasybulus in it with a strong garrison, and retired, first to Rhodes, and thence to the island of Cos. (Diod. Sic. lib. xiii.) This, as well as the other Greek islands, submitted to Alexander; after whose death it took part with Antigonus, who was driven out by Ptolemy; and his successors held it to the Roman times, when Attalus, king of Pergamus, besieged the metropolis at the head of a Roman army; and having taken it, the Romans granted him the possession of the whole island; but upon his death Rome claimed this island, as well as his other dominions, in virtue of his last will. Livy, lib. xxxi. c. 43.

Andros is separated from Tino by a channel of a mile in breadth, into which vessels of burden are afraid to enter on account of the rocks and shoals which are there situated. Although it is lofty and mountainous like Tino, it has in proportion more lands fit for cultivation; its plains are somewhat more extensive, equally fertile, and as well watered. Here are to be seen 50 villages, and yet its population does not exceed 12,000 souls. Andros is the appanage of a sultana: a Turkish waiwode administers the police, and watches over the peace of the island. It pays about 30,000 piastres, as well for the duties of the sultana as for those of the captain-pacha. The principal produce of its territory is silk, of which the quantity annually exported is estimated at 6000 okes. A considerable quantity of oranges and lemons is also exported for Salonica, Athens, and the Morea. The wheat, barley, wine, and oil, are generally sufficient for the consumption of the inhabitants. The island also produces legumes, herbage, various fruits, honey, wax, and cotton. It wants only a good harbour, and a better government. N. lat. 37° 50'. E. long. 25° 25'. Olivier's Travels in the Ottoman Empire, vol. ii. p. 105.

ANDROS, or EDROS, a small island in the Irish sea, now called "Bardsey," about a mile from the coast of North Wales.

ANDROS, a town of Asia Minor, in Galatia.

ANDROS was also a small island situate upon the coast of Gallia Aquitania. It is now a heap of rocks, upon which is built the tower of Cordouan, at the mouth of the Garonne.

ANDROS Islands, in Geography, lie on the south-west of Providence, in the Bahama islands, called by the Spaniards "Yllas del Espiritu santo." They extend from N. lat. 23° 30' to 25° 0', and from W. long. 77° to 77° 58', and take up a space of 30 leagues in length, and 4 or 5 broad, intersected by many very narrow passages.

ANDROSACE, *Androsace*, the shield of a man, so called from the form of the calyx, which, in the common species, is large, in Botany, a genus of the *pentandria monogynia* class and order, of the natural order of *procy*, and *lythrace* of Jussieu: its characters are, that the calyx is an involucre many-leaved, many-flowered, and very small; the perianthium is one-leaved, five-cornered, semiquinquefid, acute, erect, and permanent; the corolla is monopetalous, and salver-shaped; tube ovate and involved in the calyx; border flat and five-parted; divisions ovate-oblong, obtuse, entire; throat beset with glands; the stamina have very short filaments within the tube; anthers oblong, erect, and included; the pistillum is a globose germ, stylic filiform and very short; stigma globose and included; the pericarpium is a globose capsule, sitting on a flat calyx, one-celled, opening into five parts at the top; the seeds are very many, roundish, gibbous on one side, and flat on the other; the receptacle is erect and free. Martyn enumerates 7, Willdenow 10, and Gmelin 11 species. 1. *A. maxima*, oval-leaved *A.* with the perianths of the fruit very large. The flowers of this species appear in April or the beginning of May; the seeds ripen in June, and the plants soon after perish. It grows naturally among corn, in Austria, Bohemia, and other parts of Germany, in the Valais, Piedmont, Carniola and Hungary; and was cultivated here, in 1596, by Gerard. 2. *A. elongata*, cluster flowered *A.* with leaves lanceolate, toothed, fruiting umbel elongate, and corollas shorter than the angular calyx; a native of Austria, near Vienna, even in the suburbs; flowers in April, and perfects its seed in June; introduced, in 1776, by M. Thouin. 3. *A. septentrionalis*, arctia of Haller, tooth-leaved *A.* with leaves lanceolate, toothed, and smooth, and perianths angular, and shorter than the corollas: a native of Lapland, Sweden, Denmark, Switzerland, Germany, Russia, in mountainous situations; cultivated, by Mr. Miller, in 1755. 4. *A. villosa*, arctia of Hall, sedum of Clus. Chamæjalme alpina of Bauhin, hairy *A.* with leaves hairy and perianths shaggy; common in the Swiss Alps, Jura, &c. in the mountains of Austria and Carniola, in the Pyrenées, &c. introduced, in 1768, by professor de Saussure. 5. *A. laetea*, *A. obtusifolia* of Allion, arctia of Hall, sedum alpinum, &c. of Bauhin and Ray, grass leaved *A.* with leaves lanceolate and smooth, and umbel many times larger than the involucre; a native of the mountains of Switzerland, Austria, and Carniola, flowering, like the foregoing, in July and August. 6. *A. carnea*, arctia of Hall, sedum alpinum of Col. awl-leaved *A.* with leaves awl-shaped and smooth, and umbel equalling the involucre: a native of the Alps and Pyrenées, and introduced in 1768, by professor de Saussure. 7. *A. filiformis*, with leaves ovate-toothed, petioled, rays of the umbel capillary, and corollas exceeding the bell-shaped calyx; a native of Siberia. 8. *A. brevifolia* of Gmelin, with leaves lanceolate, petioled, and hispid, and peduncles four times longer than the involucre. This Willdenow ranks as a variety of the next species. 9. *A. obtusifolia*, with leaves smooth and lanceolate, calyxes angular, pubescent, and less than the corolla, and the folioles of the involucre very short (*G.*) or with leaves lanceolate, narrow at the base and smooth, and the perianths angular and pubescent. It is found on the high mountains of Switzerland, Italy, and Styria. 10. *A. odoratissima*, with leaves triquetrous and ciliated, and perianths shaggy (*G.*) or with leaves triquetrous, lanceolate, and ciliated, the rays of the umbel short, and the perianths angular, and shorter than the corolla; found in the high mountains of Cappadocia. 11. *A. pauciflora*, with leaves setaceous-linear, and smooth, two peduncles of the length of the stalk, and segments of the corolla emarginated.

Gmel.

Gmel. 12. *A. chamajafme*, *A. villosa* of Jacq, chameejafme of Bauhin, *sedum alpinum*, &c. of Cluf. with leaves lanceolate and narrow at the base, ciliate at the margin, and with shaggy perianths. It is found in the high mountains of Aultria. Willd.

Culture. These plants being low, and having small flowers, without any great appearance, are preserved only in botanic gardens. All, except the first, require a shady situation. The seeds should be sown soon after they are ripe; if permitted to scatter they will grow of themselves; the annual sorts perish as soon as the seeds are ripe, but the others, by being merely kept clear from weeds, will live in an open border for several years. Martyn's Miller.

ANDROSACE. See ARETIA.

ANDROSACE, in *Natural History*, a name given by some naturalists to the TUBULARIA ACETABULUM of Linnæus; this species is variously described by authors; it is corallina (androface) tubulosa simplex pelta terminali radiata of Pallas, androfaces cotyledon foliosum marinum of Lobel, androfaces peræ innascens of C. Bauh. pin. herba marina androfaces of Bess. mus. acetabulum marinum of Tournefort, plantula lapidea scutulata, and callophilophorum Matthioli of Donat. adr. Besides this Brown describes a variety, in which the target is not radiated. Vide Jamaica, p. 74. The Linnæan specific character is, the stems filiform and terminating in a calcareous target or cup, which is striated and radiated. Gmelin. This kind inhabits the Mediterranean and American seas, growing upon shells, stones, &c. it is white, soft, and fragile when dry: the tubes are simple, about the thickness of a straw, and two inches in length. Gmelin. This substance, reduced into powder, has been used in France for destroying worms and for dropsies. Dr. Lewis observes, that it does not promise to be of use in either of these intentions, or to differ from the coralline, which has been used as a vermifuge with little success. The dried androface, when held in the flame of a candle, yields repeatedly for several times a dazzling brightness, which is a phenomenon exhibited also by the coralline.

ANDROSÆMUM, in *Botany*. See HYPERICUM.

ANDROSCOGGIN, or AMARISCOGIN *River*, in *Geography*, a river of America, in the district of Maine, may be called the chief western branch of the Kennebeck. Its sources are north of Lake Umbagog, and it pursues a southerly course till it approaches near the White Mountains, from which it receives Moose and Peabody rivers; afterward turning to the east and south-east it passes within two miles of the sea coast, and again turning north, and running over Pejapstkaeg falls into Merry-Meeting Bay, where it joins the Kennebeck, 20 miles from the sea. The lands near this river are good.

ANDROSIA, in *Ancient Geography*, a town of Asia Minor, assigned by Ptolemy to the Troceni.

ANDROTOMY, or ANDRATOMY, from *ανω*, man, and *τομω*, I cut, the anatomy or dissection of human bodies. It is thus called in opposition to *zootomy*, which is used to denote that of brutes.

Anatomy is the genus, and comprehends all dissections in general, whether of men, beasts, or plants; and androtomy and zootomy are the species.

ANDROUET DU CERCEAU, JAMES, in *Biography*, a celebrated French architect, was born at Orleans, or, as some say, at Paris. He was sent for acquiring perfection in his art to Italy, where he was chiefly struck by the triumphal arch at Pola in Istria, to which there is a visible reference in the style of his works. Upon his return, though he was a steady Calvinist, he was made architect to Henry III. who employed him, in 1578, in the construction of the pont neuf at

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Paris. Henry IV. employed him in enlarging the Tuilleries, and continuing the great gallery that connects it with the Louvre. But persecution obliged him to quit his country in 1585; and the place of his retreat, and the time of his death are not known. He left two sons, one of whom was eminent in his father's profession. He was one of the principal improvers of architecture in France, and he published several books on the art; as his "Architecture," in 1560, comprehending designs of all the parts and ornaments of buildings; "Lessons in Perspective," in 1576; "The most excellent Edifices in France," in 1576 and 1607, 2 vols. folio, being a description of 30 royal palaces and other buildings, with figures; "Architecture of Country-houses and Mansions," 1582; and "Roman Edifices, or a Collection of Remains of Antiquity, drawn on the spot."

ANDRUM, in *Physiology*, a local disease, epidemical among the people of Malabar, being a peculiar species of *hydrocele*, or watery tumour of the *scrotum*. The andrum, in the language of the country, is also called *perical*; sometimes paraphrastically *andu wajaku*, q. d. a popular water rupture. Its origin is derived from the vicious quality of the country waters, impregnated with corrosive muriatic salts, the source of most other diseases that affect the Malabarians. Its signs, or symptoms, are an erysipelas of the *scrotum*, returning every new moon, by which the lymphatics being eroded, pour a ferrous saline humour into the cavity of the *scrotum*. The andrum is incurable; those once seized with it have it for life; but it is not dangerous, nor very troublesome, to those used to it; though sometimes it degenerates into a *hydrofarcocoele*. The means of prevention is by a heap of sand fetched from a river of the province Mangatti, and strewed in the wells. This is practised by the rich. As to the cure, they have only a palliative one, which is by incision, or tapping and drawing off the water from the *scrotum*, once in a month or two.

ANDRUSA, in *Geography*, a town of European Turkey in the Morea, 20 miles north-east of Navarin.

ANDRY, NICHOLAS, in *Biography*, born at Lyons in 1658, was made doctor in medicine at Rheims in 1693, having quitted the study of theology, in which he had been engaged several years. In 1697 he was admitted into the faculty of physic at Paris. In 1701 he was made professor of medicine there, and the following year censor or examiner of intended publications in that science. He died in 1742, aged 84 years. He was a considerable contributor to most of the medical and philosophical journals of the time, and in 1702, one of the editors of the "Journal des Savans." He wrote also a variety of other works, of which the principal are, "Cleon and Eudoxe," 2 vols. 12mo. Paris; in which he strenuously insists on the subordination of the surgeon to the physician. "Acrum et ingeniosum scriptum," Haller says. "De la Generation des vers dans le Corps Humain," 12mo. Paris. This was afterwards augmented to two volumes. At the end is an engraving of a tape-worm, of an enormous length, that had been voided entire by one of his patients. "Orthopedie, ou l'Art de prevenir et de corriger, dans les enfans, les difformites du Corps," two vols. 12mo. Paris, 1741; that is, the art of preventing or redressing any defects or deformities in the bodies of children. This is directed to be effected by regimen, exercise, and by various mechanical contrivances, and contains the germ, at the least, of every thing known on the subject at this time. The author composed this work, he says, as a supplement to the Callipædia, the art of getting handsome children, by Quillet; and the Pædotrophia, the art of rearing and nursing children, by

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Scævola

Scævola da St. Martha, two beautiful and well known poems, of which he gives an analysis in the preface to this work. The Orthopædia was soon translated into our language, as well as into those of most of the countries in Europe, and still retains its popularity. For the titles of numerous other productions by this writer, see Eloy's Dict. Histor. de la Médecine.

ANDRYALA, eriophorus of Vaillant, in *Botany*, a genus of the *Syngenesia polygamia aequalis* class and order, of the natural order of *composita semistrobilata*, and *cichoraceæ* of Jussieu. Its characters are, that the common calyx is many-parted, short, rounded, and villose; the scales are very many, subequal, and subulate (in a double row, G.); the compound corolla is imbricate and uniform; the corollules are hermaphrodite, numerous, and equal, each ligulate, linear, truncate, and five-toothed; the stamina have five filaments, capillary, and very short, anther cylindrical, and tubulose; the pistillum is an ovate germ, style filiform, of the length of the stamina, stigmas two, and reflex; no pericarpium, calyx converging and globose; the seeds are solitary and ovate, the down capillary, of the length of the calyx, (sessile, G.); the receptacle is villose and flattish, (alveolate and hairy, G.) Martyn enumerates six, and Gmelin eight species. 1. *A. integrifolia*, sonchus lanatus of Dalech. and Bauh. *S. villosus luteus* major of Bauh. and Parkins. hieracium villosum of Ray, hoary *A.* with lower leaves runcinate or notched, and upper ovate-oblong and tomentose. It is about a foot and a half in height; the flowers are in small clusters at the top of the stalk, yellow, and resembling those of fow-thistle; flowers in July, and its seeds ripen in September. There is a variety β . *A. sinuata*, which has the lower leaves indented and woolly, but those on the stem are entire; it seldom rises more than a foot high, and supports a few yellow flowers at top. These are annual plants, growing naturally in the South of France, Spain, Italy, and Sicily; and cultivated in the Chelsea garden in 1711. 2. *A. cheiranthifolia*, *A. glandulosa* of La Marek, *A. tomentosa* of Scop. various-leaved *A.* with leaves runcinate, upper ones lanceolate and entire, down glanduliferous. It is perennial, three feet high, and full of milk. A native of the island of Madeira, and introduced by Mr. F. Masson, who observed it there in 1777. 3. *A. pinnatifida*, with leaves tomentose and pinnatifid, and calyces tomentose and hairy, hairs rather stiff. There are two varieties: α . tooth-leaved *A.* with leaves pinnatifid, and pinnae distant and toothed; a native of Madeira; and β . wing-leaved *A.* with leaves deeply pinnatifid, and pinnae short and entire. A native of the Canary islands; found by Mr. F. Masson; flowering in July and August, and introduced in 1778. 4. *A. crithmifolia*, samphire-leaved *A.* with leaves pinnate, linear, and tomentose. A native of Madeira, found by Mr. F. Masson; flowering from June to August, and introduced in 1778. This and the last species are biennials. 5. *A. ragulina*, downy *A.* with leaves lanceolate, undivided, denticulate, acute, and tomentose, and solitary flowers. As it is very hoary it makes a pretty appearance intermixed with others, whose leaves are green; but it will not live abroad except in a dry soil and warm situation. It has been received from Spain, from the Cape, and from Algiers. Linnæus says, that it is a native of the islands of the Archipelago. This species has leaves stiffer, more acute, and more acutely toothed than the other species. 6. *A. lanata*, hieracium montanum tomentosum of Dill. Hall. and Mill. woolly *A.* with leaves oblong-ovate, slightly toothed and woolly, and peduncles branching; biennial according to Miller, but according to others perennial; flowering in June, and ripening its seeds in August; the whole plant is white. A native of the south of Europe; culti-

vated in 1732 by Dr. Sherard. 7. *A. nigricans*, with lower leaves lyre-shaped pinnate, peduncles ramose, and down blackish above. Poir. voy. cu Barb. 8. *A. uniflora*, with leaves smooth, entire, dentated, oblong-acute, with a single-flowered stalk. Schrank flor. bav.

Culture. All these plants may be propagated from seeds, sowing those of the hardy sort in Spring, where they are to remain. They require no other attention but to be thinned and kept free from weeds; the 2d, 3d, 4th, and 5th require the protection of a green-house, in which they will flower all the Summer, often perfecting their seeds, by which they may be propagated. The perennial sorts may be propagated by their creeping roots.

ANDRYALA. See LEONTODON.

ANDUC *Island*, in *Geography*, one of the group called the Maldives, on the east side, in N. lat. 6° 25'. E. long. 73° 40'.

ANDUJAR, or ANDUXAR, a town of Spain, with a castle, situate on the Guadalquivir, in the confines of Jaen and Cordova, and built near the spot on which stood Illurgis, or Illiturgis, called by the Romans Forum Julium, and now Andujar el Viejo. Its principal commodity is silk. The adjacent country abounds with wine, oil, honey, and various sorts of fruit and also game. It is 10 leagues east of Cordova, and 9 west of Jaen.

ANDUINNA, in *Entomology*, a species of PAPIPIO (Nymph. Phal.) found in Russia. The wings are dentated, fulvous, with black spots; under side of the posterior wings white, with two brown bands, and dotted behind with black. Fabricius and Gmelin.

ANDUZE, in *Geography*, a town of France, in the department of the Gard, and chief place of a canton, in the district of Alais, carries on a considerable trade in ferges and other woollen stuffs; eight leagues north-west of Nismes, and two fourth-west of Alais.

ANECDOTES, АНЕДОТА, a term used by some authors for the title of *Secret Histories*; but it more properly denotes a relation of detached and interesting particulars. It is now often used for a biographical incident or minute passage of private life.

The word is Greek, *anecdota*, q. d. *things not yet known*, or *hitherto kept secret*.

Procopius gives this title to a book which he published against Justinian and his wife Theodora; and he seems to be the only person among the ancients, who has represented princes such they are in their domestic relation. Varillas has published anecdotes of the house of Medicis. We have had repeated attempts for arranging anecdotes under different heads; a "Dictionnaire d'Anecdotes," in two volumes, was published at Paris in 1767; and a similar work was published by Mr. D'Israeli in 1793, entitled, "Dissertation on Anecdotes."

ANECDOTES is also an appellation given to such works of the ancients as have not yet been published.

In which sense M. Muratori gives the name *Anecdota Græca* to several writings of the Greek fathers, found in the libraries, and first published by him. F. Martene has given a *Thesaurus Anecdotarum Novus*, in folio. five vols.

ANE'E, otherwise called *asiée*, in *Commerce*, denotes a corn-measure, used in some provinces of France, particularly in Languedoc and Maconnois.

The anee is not so properly a measure as the denomination or assemblage of a certain number of other measures. The anee at Lyons consists of six *bichets*, equal to one *septier* and three bushels Paris measure. At Macon the anee is somewhat more.

ANÉE is also used for a quantity of wine supposed to be

an afs's load, and is fixed to eighty English quarts wine measure.

ANEGADA, in *Geography*, one of the Virgin Isles, in the West Indies, and dependent upon Virgin Gorda. It is about six leagues long, and so low as to be almost covered with water at high tides. On the south side is Treasure Point. N. lat. $18^{\circ} 35'$. W. long. 63°

ANEGADA Bay lies on the eastern coast of South America, and is formed by the mouth of the river Saucés, which falls into the South Atlantic ocean on the east, in S. lat. $39^{\circ} 45'$, and W. long. $62^{\circ} 30'$.

ANEIO, a town of Italy, in the kingdom of Naples and province of Otranto, eight miles south-west of Brindisi.

ANEL, DOMINIC, in *Biography*, physician to the court of Savoy, published, in 1707, in 8vo. "L'art de fucer les plaies sans se servir de la bouche de l'Homme, &c." Among the instruments by which this was performed was a kind of syphon, "metuendæ magnitudinis," of a fearful size, Haller says. But his principal work, and which is still respected, is his "Nouvelle Methode de guerir les fistules lachrymales," published at Turin, in 4to. 1713. He here describes a sound and a fine flexible tube, by which he was enabled to open the lachrymal duct, and by means of a syringe to wash away the sores, and finally heal the passage. This work gave rise to numerous controversial pieces, in some of which his method is censured, or the honour of the invention of it denied him. But the academy of surgery, at Paris, declared his method to be equally new and ingenious; and it has certainly led the way to all the improvements that have been since made in the method of treating this very troublesome complaint. Haller Bib. Chirurg. Eloy. Dict. Hist.

ANELE, or ANIL, in *Commerce*, the same with indigo. 23 Eliz. c. 9.

ANELLA, in *Entomology*, a species of PHALÆNA, of the tineæ tribe. The anterior wings are grey, with an obsolete brown stripe, and two central, sub-ocellated spots. Fabricius. This species inhabits Austria, is large, and has a ferruginous abdomen.

ANEMIUS furnus, among *Chemists*, a wind-furnace, used to make fierce fires for melting, &c. The word is formed of *νεμος*, wind.

ANEMO-CHORD, a name given to the Æolian harp. An instrument of this kind was constructed by John James Schnell, who was born at Wehingen, in the duchy of Württemberg, in 1740, and having passed through several stages of mechanical employment, became at length musical instrument-maker to the Countess of Artois at Paris. The founding of a harp, hung by accident in a passage admitting a breeze, suggested to him the idea of that instrument, which, in 1789, he first exposed to sale by the name of anemochorde.

ANEMOMACHIA, from *νεμος*, wind, and *μαχη*, fight, in some *Ancient Writers*, denotes a whirlwind, or hurricane. In which sense, we sometimes also meet with *anemozale*, *anemotaxis*, &c.

ANEMOMETER, compounded of *νεμος*, wind, and *μετρον*, measure, in *Mechanics*, a machine wherewith to measure the force and velocity of the wind. The anemometer is variously contrived. The first of the kind seems to have been invented by Wolfius in 1708, and first published in his "Aerometry" in 1709, and also in the "Acta Eruditorum" of the same year; afterwards in his "Mathematical Dictionary," and also in his *Elementa Matheos*, vol. ii p. 319. In the Philosophical Transactions we have one described, in which the wind being supposed to blow directly against a flat side or board, which moves along the graduated limb of a quadrant, the number of degrees it advances shews the comparative force of the wind.

This machine is moved by means of sails, A, B, C, K, (Plate IX. *Pneumatics*, fig. 69.) like those of a wind mill, which raise a weight L, that, still the higher it goes, receding farther from the centre of motion, by sliding along a hollow arm K M, fitted on to the axis of the sails, becomes heavier and heavier, and presses more and more on the arm, till being a counterpoise to the force of the wind on the sails, it stops the motion thereof. An index then, M N, fitted upon the same axis at right angles with the arm, by its rising or falling, points out the strength of the wind, on a plane divided like a dial-plate into degrees.

It is objected to this machine, however, that it requires a considerable wind to make it work. Leutmannus has contrived another, the sails of which are horizontal, and are more easily driven about, and will turn what way soever the wind blows.

In the Philosophical Transactions for the year 1766, Mr. A. Brice describes a method which has been successfully practised by himself, of measuring the velocity of the wind by means of that of the shadow of clouds passing over the surface of the earth.

Mr. d'Ons en Bray invented a new anemometer, which of itself expresses on paper not only the several winds that have blown during the space of twenty-four hours, and at what hour each began and ended, but also the different strength and velocities of each. Vide Mem. Acad. Scienc. an. 1734, p. 169. For other instruments of this kind, and their use, see WIND-Gage.

ANEMONE, formed from *ανεμος*, the wind, because the flower is not supposed to open, except the wind blows, or because it grows in situations much exposed to the wind, anemone and pulsatilla of Tourn. anemonoides, anemone-ranunculus, hepatica of Dill. anemonoides of Vaill. *wind-flower*, in *Botany*, a genus of the *polyandria polyginta* class and order, of the natural order of *multiflora*, and *ranunculacea* of Jussieu; its characters are, that it has no calyx; that the corolla has petals in two or three rows, three in a row somewhat oblong; the stamina have numerous filaments, capillary, half the length of the corolla; anthers twin and erect; the pistillum has numerous germs in a head, styles acuminate, and stigmas obtuse; no pericarpium; receptacle globular or oblong, hollowed, and dotted; the seeds very many, acuminate, retaining the style. Obs. Hepatica of Dill. has a three-leaved perianthium, remote from the flower; an involucre. Pulsatilla of Tourn. has a leafy, multifid involucre, with the seeds tailed and hairy. Anemonoides and hepatica of Dill. have naked seeds, without a feathered tail. Martyn enumerates 28, Gmelin and Willdenow 29 species.

* *Hepatica*, with a subcalyculate flower. 1. *A. hepatica*, hepatica, with leaves three-lobed, quite entire. The flower lies a year complete in all its parts within the bud; the seeds are oblong-ovate, involved in a silky substance, and many of them abortive; the plant is a mild allringent and corroborant; and formerly used with these intentions, in an infusion like tea, or in powder given to the quantity of half a spoonful at a time; but it is now expunged from the dispensaries, and its use does not extend beyond that of gargarisms; it is found wild in Sweden abundantly, in Denmark, Switzerland, France, Spain, Italy, and other parts of Europe, in woods and among bushes, with blue, red, and white flowers, single: cultivated here, in 1596, by Gerard. There are many varieties of hepatica, which are common in gardens, as single and double blue, single and double red or peach-coloured, single and double white, single and double variegated red and white, single and double violet-coloured, and with striped leaves. Parkinson mentions a white, with red stamens. These are some of the chief ornaments of the Spring; the

A N E M O N E.

flowers are plentifully produced in February and March, before the green leaves appear, and make a very beautiful figure in the borders of the pleasure-garden, especially the double sorts, which commonly continue a fortnight longer in flower than the single ones, and the flowers are much fairer.

*** *Pulsatilla*, with the peduncle involucred, and the seeds tailed. 2. *A. patens*, *pulsatilla patens* of Mill. *pulsatilla polyanthes violacea*, *anemones folio* of Breyn. and Helw. woolly-leaved *A.* with peduncles involucred, and leaves digitate and multifid. The corolla is white, villose underneath, and the stamens yellow; a native of Siberia, about Tobolski, and also of lower Lusatia; cultivated here in 1759 by Mr. Miller. 3. *A. sulphurea*, with peduncle involucred, leaves triply-pinnate, hairy, flat, acutely gashed, and seeds tail'd. 4. *A. helenifolia*, with biternate shaggy leaves, or with biternate leaves, tripartite folioles, triid lacinie, foliose involucre, and woolly seeds, with a very short permanent style, Willd. It is distinguished from the *A. alpina*, which it resembles, by its leaves and seeds; and grows wild about Aigle, &c. in Switzerland, Mont Baldo, M. Cenis, &c. 5. *A. vernalis*, *pulsatilla vernalis* of Miller, with peduncle involucred, leaves pinnate, folioles tripartite, obtuse and smooth, and erect flowers, Willd. The flower is red without, and white within, and blows earlier than our pasque-flowers. It grows in the woods, bordering on the mountains, in barren lands, in Sweden, Germany, and the high Alps of Switzerland. 6. *A. cernua*, with peduncle involucred, leaves pinnate, and flowers nodding. It differs from the last species in the nodding of the flowers, and in the leaves having more pinnæ finely cut. Thunberg found it near Jedo, in Japan, flowering early in Spring. 7. *A. pulsatilla*, *pulsatilla folio crassiore et majore flore* of Bauhin. Park. Mor. Ger. Helw. Camer. and Ray, *pulsatilla vulgaris* of Miller, *A. pratensis* of Sibth. and Wither. pasque-flower, with peduncle involucred, petals straight, and leaves bipinnate. It grows wild on open hills in dry soils, in Sweden, Denmark, Switzerland, France, Italy, Germany, Carniola, Siberia, &c. and in England on chalky downs, as Gogmagog hills, near Cambridge; Barnack heath, near Stamford, in the neighbourhood of Pontefract, near Chelbury in Oxfordshire, Lexham, Bury, Newmarket, &c. It is perennial, and flowers in April and May. It has the Italian name *pulsatilla*, from the downy seed being beaten about by the wind. The plant is acrid, and will raise blisters; the distilled water will vomit; and it cannot be given with safety in disorders of the lungs. The juice of the petals stains paper green. Goats and sheep eat it; but horses, cows, and swine refuse it. There is a variety with double, and another with white flowers. 8. *A. pratensis*, *pulsatilla pratensis* of Miller, *flore minore nigricante* of Bauh. and Helw. *p. vulgaris*, *faturatiore flore* of Clauf. *p. flore minore* of Ger. *p. flore clauso obsoleto*, *petalis reflexis* of Helw. *p. foliis decompositis pinnatis*, *flore pendulo*, *limbo reflexo* of Hort. Cliff. &c. Meadow *A.* with peduncle involucred, petals reflex at the tip, and leaves bipinnate. It is very common in the barren stony fields of Oeland and Scania, also in Denmark, Piedmont, and in Germany, where it grows in the open fields and flowers in May. It was first cultivated in England by Mr. Miller in 1731, and in our gardens it very much resembles the *A. pulsatilla*, which would prove a good substitute to it; the principal distinctions between these species, as they grow naturally, are taken from the flower, which in this species is more pendulous, of a darker colour, and has the apices of the petals reflexed: the stem is also said to be less hairy and shorter than that of the *pulsatilla*; to which may be added, that the leaves of the *pratensis* are somewhat tomentose, while those of the *pulsatilla* are of a

bright green. All the anemones have a considerable degree of acrimony; but this (says Dr. Lewis) seems to possess the greatest share. In its recent state the plant has scarcely any smell; but its taste is extremely acrid, and when chewed, corrodes the tongue and fauces; and the dried plant likewise retains a considerable share of acrimony. The root is milder than the other parts. The liquor, obtained by distilling the plant with water, is strongly impregnated with its virtues; and the remaining extract is considerably active. It also appears from some experiments to contain a camphoraceous matter, which was obtained in the form of crystals, of an unctuous taste, and very inflammable. This plant, as well as others of great activity, has been received into the *Materia Medica* of the Edinburgh pharmacopœia, upon the authority of Baron Stoerck, who recommends it as an effectual remedy for most of the chronic diseases affecting the eye, particularly amaurosis, cataract, and opacity of the cornea, proceeding from various causes. He likewise found it of great use in venereal nodes, nocturnal pains, ulcers, caries, indurated glands, suppressed menses, serpiginous eruptions, melancholy and palsy. Six cases of amaurosis, three of cataract, and seven of affections of the cornea, we are told, were either entirely cured, or greatly relieved, by this remedy. The sensible operation of the medicine was nausea and vomiting, particularly when the distilled water was used; and increased flow of urine; and sometimes gripes and looseness with increased pain at first in the affected part. The dose of the distilled water to adults is about half an ounce, twice or thrice a day; of the extract, reduced to powder with the addition of sugar, five or six grains. Many German physicians have tried the effects of this medicine in diseases of the eyes, with success; but several others, among whom is Bergius, bear testimony to its inefficacy in these diseases, though they increased the dose beyond that directed by Stoerck. Notwithstanding this, says Dr. Cullen, (*Mat. Med.* vol. ii. p. 216.) "I would still recommend it to the attention of my countrymen, and particularly to a repetition of trials in that disease, so frequently otherwise incurable, the amaurosis. The negative exception of Bergius, and others, is not sufficient to discourage all trials, considering that the disease may depend upon different causes; some of which may yield to remedies, though others do not." Every part of the plant, except its root, is ordered for medicinal use, and was prepared by Baron Stoerck for that purpose into an extract, or distilled water, and an infusion; but the first form seems to have been preferred, and was given from seven grains to three or four times that quantity, twice or thrice a day. The fluid preparations of the plant are likewise recommended for external use in ulcers and disorders of the skin. The manner of preparing the extract is given in the Edinburgh pharmacopœia. Murray's *Mat. Med.* vol. iii. p. 93.—101. Lewis's *Mat. Med.* p. 525. Woodville's *Med. Bot.* vol. iii. p. 400—403.

9. *A. alpina*, *pulsatilla flore albo* of Bauh. and Lob. *alpina A.* with stem-leaves ternate, connate, superdecompound, multifid, and seeds shaggy tailed. Willdenow mentions as a variety, *A. alpina alba major* of Bauh. and Burf. This species grows wild on the Alps, Jura, and in Austria, and was cultivated here by Mr. Miller in 1731. 10. *A. apiifolia*, *pulsatilla lutea* of Camer. and Gesn. *p. tertia alpina* of Dalech. *A. sylvestris tertia* of Cluf. with stem-leaves ternate, connate, superdecompound, multifid, very slender, extremely hairy underneath. It has no smell, and is a native of the Leon-tine Alps. It is doubted whether it be a distinct species from the last.

*** *Anemones* with a leafy stem, and tailed seeds. 11. *A. coronaria*, *pulsatilla foliis decompositis ternatis* of Hort. Cliff.

ANEMONE.

Cliff. *A. tenuifolia*, simplici flore of Bauh. narrow-leaved garden A. with radical leaves ternate-decompound and involucre leafy, or with radical leaves ternate-decompound, mucronated teeth, leafy involucre and woolly seeds; according to Willdenow, who reckons as varieties *A. tenuifolia* multiplex rubra of Bauh. and *A. angustifolia* multiplex, mutata florum facie quotannis nova of Miller. This species grows naturally in the Levant, particularly in the islands of the Archipelago, where the borders of the fields are covered with it of all colours; but the flowers are single and have been rendered double by culture. It was cultivated in France long before it was known in Holland or England: in our gardens, however, it was found in 1596. Parkinson, in 1629, says, that some reckoned 30 sorts with single flowers; and of those with double flowers he gives 12 varieties. Ray enumerates near 300 varieties of this and the broad-leaved sort. The catalogues of our modern seedsmen have usually about 150 or 200. The principal colours in anemones, according to Mr. Miller, are white, red, blue, and purple; and in some these are curiously intermixed; but the most prevailing colours amongst our English raised anemones are white and red; though we have received from France a great variety of blues and purples, which are very fine flowers. The plain colours in the modern catalogues are red, crimson, rose-coloured, purple, lilac, clear and pale blue, ash-coloured and white. The principal variegated ones are red and white striped, rose and white, blue and white, red, white, and purple; but there are innumerable shades of these and the other colours. A double anemone, in order to be fine, should have a strong upright stem, about nine inches high; the flower from two to near three inches in diameter, the outer petals firm, horizontal, except turning up a little at the end, and the smaller petals within these should lie over each other gracefully, so as to form an elegant whole. The plain colours should be brilliant and striking; the variegated ones should be clear and distinct. 12. *A. hortensis*, pulsatilla foliis digitatis of Hort. Cliff. broad-leaved garden A. or hard-leaved A. or star A. with leaves digitate and seeds woolly; or, according to Willd. with radical leaves digitate, laciniae trifid, stem leaves ternate, lanceolate, connate, and subdivided, and woolly seeds. It is found wild, with single flowers, in Italy, Provence, and Germany. There are several varieties of this with single and double flowers; it was cultivated here by Gerard in 1597. 13. *A. palmata*, pulsatilla foliis palmatis of Hort. Cliff. *A. latifolia* flava of Bauh. or *A. hortensis latifolia* of Clus. with leaves heart-shaped and sublobate, and calyx six leaved and coloured. This species connects the hepaticas with the anemones by its six-parted calyx. It was found by Clusius in Portugal, near the Tagus.

*** *Anemoneides*, with a naked flower, and tailless seeds. 14. *A. sibirica*, with stem one-flowered, involucre leafy, and obtuse; found by Gmelin in Siberia. 15. *A. sylvestris*, large white-flowered wood A. with naked peduncle and seeds roundish, shaggy and awnless; or with a stem two-flowered and leafy, leaves tripartite, laciniae trifid and dentated, seeds roundish and woolly, and permanent stigma, according to Willdenow, who mentions as a variety, *A. sylvestris alba* minor of Bauhin, &c.; a native of many parts of Germany, found also in Sweden, Alsace, and Siberia; flowering in May, and ripening its seeds in June. 16. *A. fragifera*, with peduncle naked, seeds roundish, woolly, awnless, gashes of the leaves acute, and lanceolate; a native of Carinthia. 17. *A. virginiana*, virginian A. with peduncles alternate, very long, fruit cylindrical, and seeds shaggy and awnless; or according to Willd. with many flowered leafy stem, tripartite leaves, laciniae trifid acuminate and dentated, acute petals, shaggy seeds, and very short per-

manent style; a native of North America, cultivated here in 1722, and flowering in May and June. 18. *A. decapetala*, ten-petalled A., with stem one-flowered, flower ten petalled, leaves ternate, lobate and radical; a native of Brazil. 19. *A. pennsylvanica*, pennsylvanian A. with stem dichotomous, leaves sessile, stem-clasping, the lowest ternate, trifid, and gashed; resembling the dichotoma, a native of Canada and Pennsylvania, and cultivated here in 1766 by Mr. J. Gordon. 20. *A. dichotoma*, with stem dichotomous, leaves sessile, all opposite, stem-clasping, trifid and gashed. It flowers about Midsummer, and ripens its seeds; a native of Canada and Siberia, and sent growing into Sweden by David de Gorter, physician to the emperors of Russia, in 1760. 21. *A. trifolia*, with leaves ternate, ovate, entire, ferrate; and stem one-flowered; a native of France, Carniola, and Siberia, growing in woods and flowering at the end of April. 22. *A. quinquefolia*, ranunculus nemorum, &c. of Pluk. with leaves quinate, oval and ferrate, and stem one-flowered; a native of Virginia and Canada. 23. *A. nemorosa*, wood A. ranunculus sylvarum of Clus. *A. nemorum alba* of Ray and Ger. with seeds acute, leaflets gashed, and stem one-flowered. This grows in woods, among bushes and in hedges, in most parts of Europe, and sometimes in pastures. In many of our woods the ground is almost covered with the flowers in March, April, and May. In fine clear weather, the blossoms are expanded and face the sun; but in the evening and wet weather, they are closed and hang down. It is perennial, and flowers in April. This plant is acrid, and in some degree poisonous. Linnæus says, that cattle brought from open to woody pastures, and eating this plant, have been affected with the bloody flux, and have made bloody urine. Goats and sheep eat it; but horses, cows, and swine refuse it. It is now disused in medicine; but Chomel says, that the leaves bruised with the flowers, and applied twice a day to the head, have in a little while healed the tinea; and it is also said that a blister prepared of these when recent serves to remove intermittent fevers, but it should be cautiously used. This plant may be employed as a dye, because Dr. Stokes says that the paper in which dried specimens are preserved is stained brown. This plant is sometimes found with yellow dots on the under surface of the leaves, and has been mistaken for a polypodium. Some have supposed these dots the work of an insect, but without sufficient proof. Mr. Relhan ascribes this appearance to the *Æcidium fuscum*; but Dr. Pulteney (in Linn. Transf. vol. ii. p. 305.) has rendered it probable, that they are formed by a minute species of lycoperdon, allied to the lycoperdon epiphyllum of Linnæus; though as they may be discovered in their younger state under the outer cuticle of the leaf, it is not evident how the seeds could be introduced. The plants thus affected are in a feeble or morbid state, of a yellow green, and do not bear flowers. When the flowers become double, the wood anemone is cultivated by the gardeners; if pains were taken with it, it might be much improved. 24. *A. apennina*, ranunculus nemorosus, flore purpureo cæruleo of Park. Ray, Mentz, and Clus. blue mountain A. with scape involucred and one-flowered, involucre three-leaved petiolate and foliaceous, seeds tailless, and petals lanceolate and numerous. Smith. It bears some affinity in its foliage to the preceding, but the root is thicker, the petals much narrower; more than twice as many, and of a light pleasant purplish blue; it is perennial and flowers in April; it grows in woods and shady places; a native of the Apennines, near Rome, and of some few places in England, as Lord Spencer's park at Wimbledon, near Harrow on the Hill, a wood near Luton Hoe in Bedfordshire, and near Berkhamstead in Herts.

It

It is a very ornamental plant, suitable to the flower-garden or plantation, and loves a light loamy soil. 25. *A. ranunculoides*, *A. nemorum* lutea of Ger. *ranunculus nemorosus luteus* of Bauhin, yellow wood *A.* with seape involucred subbiflorous, involucre three-leaved subsessile and foliaceous, tailless seeds, and petals elliptic and by fives, Smith; or with acute seeds, leaflets gashed, petals roundish, and stem mostly one-flowered. It differs from the *A. nemorosa* or wood *A.* in having a yellow corolla, two petals alternately outer, and two inner, and one having one side within and the other side without the next petal, whereas that has three outer and three inner petals; it differs also in the peduncles being accompanied with two leaflets, the latter of which is furnished with three at the base. This is perennial and flowers in April; grows wild in Sweden, Denmark, Switzerland, France, Germany, Austria, Carniola, Italy, and Siberia; and with us in shady places and hedges, near King's Langley, Herts, and near Wrotham, in Kent. 26. *A. narcissiflora*, *ranunculus montanus*, &c. of Bauh. narcissus-flowered *A.* with flowers umbelld (involucred Willd.), and seeds oval-depressed and naked (radical leaves palmated and gashed dentated, Willd.) This grows wild on the mountains of France, Switzerland, Austria, Silesia, Siberia, and Cappadocia: introduced here in 1773 by John, earl of Bute. 27. *A. fasciculata*, *ranunculus orientalis*, &c. of Tourn. with flowers umbelld, collected, and leaves multifid. This was first observed by Tournefort, in the Levant, and is found on the mountains about the lake Baikal. Linnæus doubts whether it be a distinct species; Haller thinks it is only a variety of the last species, and Willdenow says, that it differs only in having shorter peduncles. 28. *A. thalicroides*, *ranunculus nemorosus, aquilegiæ foliis*, &c. of Pluk. meadow rue-leaved *A.* with flowers umbelld, stem-leaves simple, and verticillate; and radical leaves ternate. It grows wild in Virginia and Canada, and was cultivated here in 1768 by Mr. Miller. 29. *A. Halleri*, with leaves shaggy and pinnate, the pinnæ acutely lobated, and the involucre multifid, Gmelin from Allion. flor. pedcm., or with involucred peduncle, pinnated leaves, leaflets tripartite, acuminate, and villose, and flower somewhat erect, Willd.; a native of the Alps of Piedmont, &c. Willdenow has omitted the fragifera, fasciculata and sulphurea, and inserted the following species, viz. *A. triternata*, with leaves ternated, leaflets cuneated and slightly cut, and multifid involucre; a native of Brasil, and described by Vahl. *A. reflexa*, with stem subbiflorous, stem-leaves by threes and ternated, leaflets subtrifid, at the tip dentated, and petals lanceolate, obtuse, and reflex; a native of Siberia, and very much resembling *A. ranunculoides*. *A. umbellata*, *ranunculus orientalis napelli folio lanuginoso flore albo* of Tourn. with flowers umbellate and involucred, radical leaves tripartite, and lacinix trifid and entire; a native of Cappadocia.

Culture. The plants of this genus are mostly hardy perennials, and may be increased both by seeds and by the roots. The *Hepaticas* are some of the chief beauties of the Spring; they produce flowers in February and March, before the green leaves appear; and the double sorts especially make a very handsome figure, continue a fortnight longer in flower than the single ones, and afford much fairer flowers. The single sorts are easily propagated by seeds, which they produce every year. The best season for sowing them is the beginning of August, and they should be sown in boxes or pots of light earth, exposed only to the morning sun till October, and then removed to the full sun during the whole Winter. In March, when the plants begin to appear, they should be removed to a shady situation, and frequently watered in dry weather. In August they will be fit to be

transplanted; for this purpose a border should be prepared facing the east, of good fresh loamy earth, in which the plants should be set at about six inches distance every way, and the earth should be closed firmly to the roots, to prevent their being injured by the worms; in the following Spring they will shew their flowers, but it will be an interval of three years before the flowers are strong, and you are able to judge of their goodness. If at this time any double flowers, or any of a different colour from the rest should appear, they should be transplanted into the borders of the flower-garden, where they should continue at least two years before they are taken up or parted. The double flowers, which never produce seeds, are propagated by parting their roots in March when they are in flower. The soil in which they delight is strong and loamy, in an eastern situation exposed to the morning sun.

The *pulsatillas* (2—10.) may be propagated by seeds, in boxes or pots filled with light sandy earth, and exposed to the morning sun till ten, and secured from it in the heat of the day, and in dry weather often refreshed with water. The seeds are best sown in July and August soon after they are ripe. The pots should remain in a shady situation till October, and then exposed to the full sun during the Winter. About the beginning of March, when the plants appear, they should only have the forenoon sun, be refreshed with water in dry weather, and kept free from weeds. When the leaves are decayed, which occurs usually in July, all the roots should be carefully taken up, and immediately planted in beds of light, fresh, sandy earth, about three or four inches asunder, and covered to the depth of about three inches with the same light earth. In the following Spring most of these plants will produce flowers, but they will be larger and fairer in the succeeding years, when the roots are larger.

The *garden anemones* (11, 12.) are natives of the east, from whence their roots were originally brought; but culture has so improved them, that they are become the chief ornaments to our gardens in the Spring. To prepare the soil for these plants, take a quantity of fresh, light, sandy loam, or hazel-earth, from a common or dry pasture, not dug above ten inches deep; mix this with a third part its quantity of rotten cow-dung, and lay it up in a heap; turn this over at least once a month, for eight or ten months, and every time pick out the stones and break the clods. After this mixture has been twelve months made, it will be fit for use.

The beds of this earth must be prepared in September, and should be made six or eight inches deep, in a wet soil; but in a dry one three inches will be sufficient; lay this compost at least $2\frac{1}{2}$ feet thick, with about four or five inches of rotten neat's dung, or the rotten dung of an old melon or cucumber bed at the bottom; in a wet soil let the beds be rounded, so that the water may run off; but in a dry soil let them be nearer to a level: three weeks after the compost has been laid in, stir it about six inches deep with a spade, and then with a stick draw lines each way of the bed, at six inches distance, so that the whole may be in squares; then make a hole three inches deep in the centre of each square, and plant a root in each; and when all are planted, rake the earth of the whole bed smooth, so as to cover the roots two inches thick. The season of planting these roots for forward flowers is the latter end of September, and for those of a middle season is October: this is best done at a time when there are gentle rains. Some roots should also be saved to be planted after Christmas, for fear of accidents to the former from very hard weather. These usually flower three weeks after those planted in Autumn.

ANEMONE.

In the beginning of April the early planted roots will begin to flower, and they will keep in flower near a month, if the weather prove favourable, and they are properly shaded with mats, laid over hoops in the greatest heat of the day: the second, and last planted ones, will follow these; and, in the whole, there will be at least two months fine flowering.

Toward the beginning of June the first planted roots will lose all their leaves, and they must be then taken up and washed clean, and laid to dry on mats in the shade; after which they are to be put up in paper bags, and hung up till the time of planting them comes on again. The later planted ones are to be taken up also as soon as their leaves decay, and not suffered to remain to make new shoots, for then it is too late to remove them.

They are propagated two ways, either by dividing the roots or by sowing. The roots are to be divided as soon as they are taken up out of the ground: they will succeed if broken into as many parts as there are eyes or buds in them; but they flower most strongly, if not parted too small.

The way, by sowing, is this: choose first some good kinds of single anemones, called by the gardeners *poppy anemones*; plant these early, and they will produce ripe seeds three weeks after the flower first blows. This must be carefully gathered, and in August it should be sowed in pots or tubs, or a very well prepared bed of light earth, rubbing it between the hands with a little dry sand, to prevent several of the seeds from clinging together, and spreading them as even as possible all over the bed; after this a light hair-brush should be drawn many times over the surface of the bed, to pull asunder any lumps of seed that may yet have fallen together; observing not to brush off the seed, and as much as possible not to brush it into heaps. When this is done, some light earth, about a quarter of an inch deep, should be sifted over the bed. If the weather be hot, the bed must be at times covered with mats laid hollow, and gently watered.

In about ten weeks after sowing, the plants will appear, if the season has been favourable, and they are to be carefully defended from the hard frosts by proper covering, and from the heat of the sun afterwards by a moveable reed-fence. As the Spring advances, if the weather be dry, they must be gently watered, and when their green leaves decay, there must be a quarter of an inch more earth sifted over them, and the like again at Michaelmas; and the bed must be kept clear from weeds, and the following Spring they will flower.

The single or poppy anemones will flower most part of the Winter and Spring, when the seasons are favourable, and in a warm situation; and they require little culture, for it will be sufficient to take up the roots every other year, and when they are taken up, they should be planted again very early in the Autumn, or else they will not flower till the Spring. There are some fine blue colours among these single anemones, which, with the scarlets and reds, form a beautiful mixture of colours; and as these begin to flower in January or February, when the weather is cold, they will continue for a long time in beauty, provided that the frost is not too severe. The seeds of these are ripe by the middle or end of May, and must be gathered daily as they ripen, otherwise they will soon be blown away by the winds.

The roots of *wood anemone* (23, 24, &c.) may be taken up when the leaves decay, and transplanted into wildernesses, where they will thrive, and in the Spring have a good effect in covering the ground with their leaves and flowers. The *blue anemone* (24.) flowers at the same time with the foregoing, and intermixed with it, makes a fine variety. Double flowers of both these sorts have been obtained from seeds.

This, and most of the other wild anemones, may be propagated by offsets from the root, which they put out plentifully, and they will grow in moist soils and situations. *Virginian anemone* (17.) and some others, produce plenty of seeds, and may be readily increased also that way. Martyn's Miller.

ANEMONE pumilla. See DRYAS.

ANEMONE, in *Natural History*, a species of HYDRA in Gmelin's arrangement, but which should with more propriety be referred to the ACTINIÆ of Linnæus, as Ellis had placed it with other analogous species before. The body is fleshy and flat, the disk sub-hexagonal, and surrounded with numerous tentacula. It is found in the West Indian seas.

ANEMONE is likewise the trivial name given by some to the ACTINIÆ of Linnæus in general; hence the French author Dicuemarre calls the *actinia rufa* of Linn. *Anemone de la première espece*, *actinia crassicornis*, *anemone de la seconde espece*, &c. &c.

The singular reproductive properties of this kind of vermes is now sufficiently ascertained, yet it appears that we were in a considerable degree indebted to the accurate observations and experiments of M. Dicquemarre, in the first instance, for the interesting discovery. This author conjectures that it is owing to the gelatinous texture of those creatures that they possess the wonderful faculty of reproduction. He observes, that their limbs budded out successively after several amputations; nay, some of them were dissected through the body; and the basis, together with that part of the stump which was left, survived, projected new limbs, and the animal moved and eat bits of muscles, which are its usual nourishment. They appeared to bear a considerable degree of heat, and to live in a vacuum, at least in a very rare air; and they require for a very considerable time no other food than what they find disseminated in sea water.

Dicuemarre endeavours to prove that sea anemones may be made use of for indicating the different changes of temperature in the atmosphere; but certainly without success, as the observations of later naturalists fully demonstrate. His account of this new kind of barometers is thus related. The sea-water, in which the anemones are placed, must be renewed every day, and this must be their only nourishment; and the observations should be made at intervals equally distant from the renewals of the water. If the anemones be shut and contracted, there is reason to apprehend an approaching storm; that is, high winds, and a rough agitated sea. When they are all shut, but not remarkably contracted, they forebode a weather somewhat less boisterous, but still attended with gales and a rough sea. If they appear in the least open, or alternately and frequently opening and closing, they indicate a mean state both of winds and waves. When they are quite open, tolerably fine weather and a smooth sea may be expected. And, lastly, when their bodies are considerably extended, and their limbs divergent, they surely prognosticate fixed, fair weather, and a very calm sea. The glass in which they are deposited may be swung at sea, in the same manner as the compass, so that the rolling of the ship, may agitate the water as little as possible. These animals are viviparous; for several of them brought forth eight, ten, or twelve young ones in the hand.

The account of the species *sociata*, as related by Mr. Ellis, in the Philosophical Transactions, affords still more accurate information concerning this tribe of creatures, their internal organization, economy, &c. than the reports of Dicquemarre. "This compound animal, which is of a tender fleshy substance, consists of many tubular bodies, swelling gently towards the upper part, and ending like a
bulb,

bulb or very small onion; on the top of each is its mouth, surrounded by one or two rows of tentacles, or claws, which when contracted look like circles of beads.

"The lower part of all these bodies has a communication with a firm fleshy wrinkled tube, which sticks fast to the rocks, and sends forth other fleshy tubes, which creep along them in various directions. These are full of different sized of these remarkable animals which rise up irregularly in groups near one another.

"This altho'ng tube, that secures them fast to the rock or fleshy bottom, is worthy of notice. The knobs that we observe are formed into several parts of it by its insinuating itself into the inequalities of the coral rock, or by grasping other pieces of shells, part of which still remain in it, with the fleshy substance grown over them.

"This shews us the instinct of nature, that directs these animals to preserve themselves from the violence of the waves, not unlike the anchoring of muscles, by their fine sicken filaments that end in suckers, or rather like the fleshy basis of the serpula, or worm-shell, the tree oyster, and the slipper barnacle, &c. whose bases conform to the shape of whatever substance they fix themselves to, grasping it fast with their tentaceous claws to withstand the fury of a storm.

"When we view the inside of this animal dissected lengthwise, we find a little tube leading from the mouth to the stomach, from whence there rise eight wrinkled small guts, in a circular order, with a yellowish soft substance in them; these bend over in the form of arches towards the lower part of the bulb, from whence they may be traced downwards to the narrow part of the upright tube, till they come to the fleshy adhering tube, where some of them may be perceived entering into the papilla, or the beginning of an animal of the like kind, most probably to convey it nourishment till it is provided with claws; the remaining part of these slender guts are continued on in the fleshy tube, without doubt for the same purpose of producing and supporting more young ones from the same common parent.

"The many longitudinal fibres that we discover lying parallel to each other, on the inside of the semi-transparent skin, are all inserted in the several claws round the animal's mouth, and are plainly the tendons of the muscles for moving and directing the claws at the will of the animal: these may likewise be traced down to the adhering tube."

Another remarkable creature of this kind is described in Hughes's Natural History of Barbadoes, and which, it is said, was only found in a basin in one particular cave.

"In the middle of the basin," says that author, "there is a fixed stone, or rock, which is always under water. Round its sides, at different depths, seldom exceeding 18 inches, are seen, at all times in the year, issuing out of little holes, certain substances that have the appearance of fine radiated flowers, of a pale yellow, or a bright straw colour, slightly tinged with green, having a circular border of thick-set petals, about the size of, and much resembling those of a single garden-marigold, except that the whole of this seeming flower is narrower at the discus, or setting on of the leaves, than any flower of that kind.

"I have attempted to pluck one of these from the rock, to which they are always fixed, but never could effect it; for as soon as my fingers came within two or three inches of it, it would immediately contract close together its yellow border, and shrink back into the hole of the rock; but if left undisturbed for about four minutes, it would come gradually in sight, expanding, though at first very cautiously, its seeming leaves, till at last it appeared in its former bloom. However, it would again recoil with a surprising

quickness when my hand came within a small distance of it. Having tried the same experiment by attempting to touch it with my cane, and a small slender rod, the effect was the same.

"Though I could not by any means contrive to take or pluck from the rock one of these animals entire, yet I once cut off (with a knife which I had held for a long time out of sight, near the mouth of an hole out of which one of these animals appeared) two of these seeming leaves. These, when out of water, retaining their shape and colour; but being composed of a membrane-like substance, surprisingly thin, it soon shrivelled up and decayed."

The same author further adds, that many people coming to see these creatures, and occasioning some inconvenience to a person through whose grounds they were obliged to pass, he resolved to destroy the objects of their curiosity, and that he might do so effectually, caused all the holes out of which they appeared to be carefully bored and drilled with an iron instrument, so as to crush their bodies to a pulp, and yet they again appeared in a few weeks from the very same places. It has been suspected that this Barbadoes *anemone* may be a species of tubularia rather than actinia.

ANEMONOIDES, in Botany. See ANEMONE.

ANEMONOSPERMOS. See ARCTOTIS and GORTERIA.

ANEMOSCOPE, derived from *ανεμος*, wind, and *σκοπεω*, I consider, is sometimes used for a machine invented to foretel the changes of the wind. For this purpose it should consist of an index moving about a circular plate, like the dial of a clock, on which the 32 points of the compass are drawn instead of the hours. The index, pointing to the divisions in the dial, is turned by an horizontal axis, having a handle-head at its outward extremity. This handle-head is moved by a cog-wheel on a perpendicular axis; on the top of which is fixed a vane, that moves with the course of the wind, and gives motion to the whole machine. The whole contrivance is very simple, and nothing is required in the construction, but that the number of cogs in the wheel and rounds in the trundle-head be equal; because it is necessary, that when the vane moves entirely round, the index of the dial should also make a complete revolution. An anemoscope of this kind is placed in one of the turrets of the Queen's palace. An account of an anemoscope contrived by Mr. Pickering, may be seen in the Phil. Transf. vol. xliii. pl. II. p. 9; and another described by Mr. Martin, in his Philos. Britan., vol. ii. p. 211. See ANEMOMETER and WIND GAGE.

It has been observed, that hygrosopes made of cat's-gut, &c. prove very good anemoscopes; seldom failing, by the turning of the index about, to foretel the shifting of the wind.

The anemoscope used by the ancients seems, by Vitruvius's description of it, to have been intended rather to shew which way the wind actually blew, than to foretel into which quarter it would change.

Otto de Gueric also gave the title anemoscope to a machine invented by him, to foretel the change of the weather, as to fair and rain. It consisted of a wooden little man, who rose and fell in a glass tube, as the atmosphere was more or less heavy.—Accordingly, M. Comiers has shewn, that this anemoscope was only an application of the common BAROMETER. See WIND.

The anemoscope of Væroe is famous. It is made of the bird *lunde*, whose feathers are picked, the skin stripped off, *viscera* taken out, and the skin in this state drawn a-new over the bones; this being hung up in the chimney, is said always to direct its bill to the point from whence the wind

is like to blow. Ephem. Acad. N. C. Dec. 3. An. 9. App. 245.

AN-END, in *Sea-language*, denotes the position of any mast, &c. when erected perpendicularly on the deck. The top-masts are said to be *an-end*, when they are hoisted up to their usual station.

ANET, in *Geography*, a town of France, in the department of the Eure and Loire, and chief place of a canton, in the district of Dreux, near the Eure; eight miles north-north-east of Drenx.

ANETHIFOLIUS, in *Botany*. See PROTEUS.

ANETHUM, derived from *anaethum*, because it runs up quick or straight, a genus of the *pentandria digynia* class and order, and of the natural order of *umbellata* or *umbellifera*: its characters are, that the *calyx* has an umbel universal and partial manifold, the involucre neither universal nor partial, the perianth proper obsolete; the *corolla* universal, uniform, floscules all fertile; proper; five-petals, involute, entire and very short; the stamina have capillary filaments and roundish anthers: the *pyfillum* is a germ inferior, styles approximating, obsolete; stigmas obtuse; no *pericarpium*, fruit subovate, compressed, striated and bipartite; the seeds are two, subovate, margined, convex, and striated on one side, flat on the other. There are three species, 1. *A. graveolens*, *A. hortense* of Bauh. Common dill, "with fruit compressed." Dill differs from fennel, which it most resembles, in having an annual root, a smaller and lower stem, the leaves more glaucous, and of a less pleasant smell, the seeds broader and flatter, surrounded with a membranaceous rim, and of a less pleasant flavour than fennel seeds. This plant grows wild among the corn in Spain and Portugal, and also in Italy on the coast, and near Constantinople; it is annual, and was cultivated here in 1597; the seeds of dill are directed for use by the London and Edinburgh pharmacopœias; they have a moderately warm pungent taste, and an aromatic smell, but not of the most agreeable kind. Water extracts very little of their virtues, either by infusion or digestion for many hours. In boiling, their whole flavour exhales with the watery vapour, and may be collected by distillation. The distilled water, drawn off to the quantity of a gallon from a pound, is occasionally made the basis of carminative draughts or juleps. The simple water arises better than any in the shops. Along with the water arises a considerable portion of essential oil, in taste moderately pungent, and smelling strongly of the dill. Rectified spirit, digested in dill seeds, readily extracts both their smell and taste; but, by distillation, it brings over very little of the flavour, the active part of the seeds remaining in the extract. The seeds and the plant itself were formerly much used in medicine, and, from the time of Dioscorides, have been esteemed for their carminative and hypnotic powers; and they have, therefore, been recommended in flatulent colics, and certain dyspeptic symptoms proceeding from a laxity of the stomach. Forestus speaks highly of their use in allaying vomiting and hiccups. They are also said to be more effectual than the other seeds of this class in promoting the secretion of milk. At this time, however, the seeds of dill are seldom employed, though a simple distilled water from them is directed both by the London and Edinburgh pharmacopœias. Allaine says, that the essential oil, rubbed on the abdomen, is useful in allaying flatulence and colic; and in a clyster, as a carminative. Lewis. Murray. Woodville.

2. *A. segetum*, *A. sylvestre* minus of Bauhin, *feniculum lusitanicum* minus annuum anethi odore of Tourn. "with three stem leaves, and oval fruits." It is annual, and a native of Portugal. 3. *A. faniculum*, common fennel, or finckle, "with gibbous fruits, and stem leaves numerous and deflexed."

It is a native of Germany, Spain, Italy, Madeira, China, &c.; it is biennial, and flowers in July and August, and the seeds ripen in Autumn. Linnæus distinguishes four varieties of fennel, viz. sweet fennel; common fennel, *F. vulgare germanicum* of Bauh. Italian fennel, *F. vulgare italicum* of Bauh.; wild fennel, *F. sylvestre* of Bauh.; Miller enumerates three varieties, viz. *F. vulgare*, or common fennel, *F. dulce*, or sweet fennel, and *F. azoricum*, or azorian fennel, or finchio. The common fennel runs from three to five feet high, blue green, with yellow flowers. It has a strong fleshy root, which penetrates deep into the ground, and will continue for several years; it has sown itself in many places, and appears like a native in England; accordingly it is enumerated among our native plants by Hudson, Withering, Smith, &c.; and is now common on chalk cliffs, as about Marazion in Cornwall, in Sussex, about Gravesend and in other parts of Kent, Nottingham Castle, near Spetchley in Worcestershire, Barwell, and other places in Cambridgeshire, and commonly on the western coasts. The sweet fennel has been supposed to be a variety of the common sort, but it has been cultivated in the same ground with the other and retained its differences; though botanists affirm, that it will return to its primitive form and qualities. The seeds, which are longer, narrower, and of a lighter colour, are generally imported from Germany and Italy, and are reckoned superior to those of our own growth.

Dietetic and medical qualities of fennel. The tender buds of fennel are eaten in salads; the leaves boiled are used as sauce for fish, particularly mackerel, and they are eaten raw with pickled fish. In Spain they put them up with olives and pickled pork. The seeds of sweet fennel are admitted into the materia medica of the London and Edinburgh pharmacopœias, and the root of the common fennel in that of Edinburgh. Sweet fennel seeds are an useful stomachic and carminative, and are sometimes given in powder, from a scruple to a dram; and sometimes candied. Water extracts the virtue of these seeds very imperfectly by infusion, but carries it off totally in evaporation. By distillation, they impregnate water with their flavour; a gallon of water receiving a strong impregnation from a pound of the seeds. A large proportion of essential oil separates in the distillation, and floats on the surface of the aqueous fluid; in colour yellowish, in smell moderately strong and dissolutive, and exactly resembling the fennel, in taste mild and sweetish, like the oil of aniseeds, and like it also congealing, by a slight cold, into a white butyraceous mass. These seeds contain likewise a considerable quantity in gross oil of the expressed kind, which, when freed from the essential oil, manifests no particular smell or taste. This oil is extracted, with the aromatic matter of the fennel, by digestion in rectified spirit, but separates and rises to the surface upon inspissating the filtered tincture. The spirit, gently distilled off, has very little of the flavour of the seeds; the oily matter retains a part both of their taste and smell; but much the greatest part remains concentrated in the extract. The seeds of the common fennel are warmer and more pungent, but less sweet, and of a less grateful flavour than that of the preceding; and there is the same difference in the preparations from them; the spirituous tincture of the sweet fennel is yellowish, but that of the common greenish. The leaves impregnate water by distillation with a grateful flavour, and yield a considerable portion of essential oil. An extract made from them by rectified spirit is no elegant aromatic. The roots, taken up early in the spring, have a pleasant sweetish taste, with a slight aromatic warmth. They are ranked among the aperient roots, and supposed by some to be equivalent in virtue to the celebrated ginseng of the Chinese, from which, however, they

differ in their sensible qualities. They are said to be pectoral and diuretic, but now wholly disregarded. The feniculum of the Latins is supposed to be the *μαραθρον* of the Greeks, by whom it was highly esteemed for promoting the secretion of milk; and this opinion has been confirmed by the experience of some modern authors. The stomatic, carminative, and other effects ascribed to fennel, depending upon their stimulant and aromatic qualities, must be less considerable than those of dill, anise, and caraway, though termed one of the finest greater hot seeds. Lewis. Murray. Woodville. The finocchio, supposed to have been originally brought from the Azores, has been long cultivated in Italy as a salad herb; and it is also cultivated in some few gardens in England.

Culture. Dill is propagated by sowing the seeds in autumn soon after they are ripe, in a light soil, where they are to remain, at the distance of eight or ten inches asunder. When the plants are come up, they should be hoed, and left at the above distance, and kept clear from weeds. When the seeds begin to be formed, those that are intended to be put into the pickle for cucumbers should be cut up, and those intended for seeds left till they are ripe; and then they should be cut, spread upon a cloth to dry, and beat out for use. The best time to sow the seeds of fennel is soon after they are ripe; the plants will come up in the autumn or following spring, and require no other care besides being thinned and cleared from weeds; they will grow in any soil or situation. For the finocchio, good seeds must be procured; and a good spot of light rich earth, neither dry nor very wet, selected, the first crop may be sown about a fortnight in March, which, if it succeeds, will be fit for use in July; and, by sowing it several times, a supply may be had for the table till the frost puts a stop to it. When the ground has been well dug and levelled, a hollow drill must be formed by a line and the seeds thinly scattered in it, about two inches apart; the drills should be 18 inches asunder, that there may be room to clean the ground and earth the plants. The plants will usually come up about three weeks or a month after sowing; and then with a small hoe the weeds should be cut between them, and the plants thinned; and thus successively till they are at the distance of seven or eight inches. The stems of the plants, which rise above the surface of the ground, should be earthed for blanching, about a fortnight or three weeks before they are used, and they will thus be rendered very tender and crisp. The second crop should be sown about three weeks after the first; and these crops should be continued in succession at such intervals till the end of July. In April, May, and June, the soil should be moister than the first; and in July it should be drier and in a warm situation, and the beds at this season should be watered and shaded. In autumn, if sharp frosts should occur, the plants should be covered with peas-baum, or some light covering; and thus they may be preserved for use till the middle of winter. Martyn's Miller.

ANEURIN, in *Biography*, one of the most eminent of the ancient bards of Britain, who was a chieftain of the Otodini, and bore a conspicuous part in the battle of Cattraeth, about A. D. 530, the subject of a noble heroic poem composed by him; and which is printed in the *Archæology of Wales*, with another composition by the same person, entitled *Odes to the Months*. About the year 540, Aneurin is supposed to have lost his territories in the north, in consequence of the growing power of the Saxons; and eventually, some old documents and traditions say, that he took refuge in the famous monastery of Iltutus, in the country of the Silures, where he died, about A. D. 570.

ANEURISM, or ANEURYSM (from *aneuryvω*, dilato), in *Surgery*, a preternatural dilatation of an artery, or a collec-

tion of blood in the cellular membrane, occasioned by the rupture or puncture of an artery. The first case has been called the *true*, or *genuine* aneurism; the second, the *false* or *spurious* aneurism. The true aneurism is again distinguished into the *true circumscribed aneurism*, in which the artery is only dilated in one small part, and the tumour is circumscribed; and the *true diffused aneurism*, when the tumour produced by the dilatation of the artery is of considerable extent, and, as it gradually loses itself in the surrounding parts, its boundaries cannot be accurately defined.

The spurious aneurism is again divided into the *circumscribed spurious aneurism*, in which the blood is collected in a sac in some part of the cellular membrane, forming a distinctly circumscribed tumour; and the *diffused spurious aneurism*, where the blood is effused into the adjacent cavities of the cellular membrane, forming an unequally elongated tumour.

Besides these two principal species of aneurism, a third, the *mixed aneurism* is reckoned; which consists in a combination of the true and false aneurisms with each other. The *first* subdivision of this species occurs when the external membrane of an artery has been injured by puncture, cutting, laceration with the splinter of a bone, or any other accidental cause, whilst the internal membrane remains untouched. The internal membrane, which is unable of itself to resist the impetus of the blood, is protruded through the orifice in the external membrane, so as to form a tumour, partly by laceration, partly by dilatation of the artery, and consequently by a combination of both causes. The *second* subdivision occurs, when the sac of the true aneurism bursts, and the blood, penetrating into the adjacent cellular membrane, surrounds the sac. As the true circumscribed aneurism may be produced wherever arteries exist, and consequently as well in the internal as the external parts of the body; it is divided into the *internal* and *external* true circumscribed aneurism. Of the internal, that of the aorta, and of the external, that in the ham or hollow of the knee, is the most frequent.

The true circumscribed external aneurism may be known when the patient remarks an unusual pulsation in any part of his body; when, upon close examination, he discovers a small pulsating tumour on the part, which disappears on being pressed with the finger, and, as soon as the pressure is removed, returns. It also will often disappear when the artery is strongly compressed at some part above it, and returns again as soon as the pressure is removed.

This tumour is not painful, neither is the external skin discoloured. When it has once been produced, it generally goes on increasing with an uninterrupted progress. The larger it grows, the less the pulsation is perceived, which may at length entirely cease when the tumour has become very large. When the sac is of considerable size, and the pulse under the tumour weak and small, the limb frequently becomes cold, collapsed, pale, weak, or oedematous. The danger is the greatest when the sac bursts, which it does either in such a manner as to leave the external skin, that covers it, entire, in which case the *true* aneurism is changed into the *mixed*; or, the sac bursts, together with the external skin, in which case a violent hæmorrhage ensues, that proves fatal, unless speedy assistance can be procured. The rupture of the sac is sometimes produced by concussion, or any other external cause, and sometimes spontaneously; in which case it may generally be foreseen for some time before it happens, by the place, which before was particularly dilated and elevated, becoming thin, soft, red, or bluish.

The internal true aneurism is only to be discovered by an unusual, constant, and violent pulsation in one part, which cannot be distinctly perceived till the tumour has attained a considerable

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considerable magnitude; for whilst it is still small, this pulsation is very indistinct. When these tumours have attained to a considerable size, they sometimes at length appear externally, in which case they may easily be ascertained.

It now and then happens, however, that pulsation combined with dilatation does not certainly characterize this disease. (See Deffault's *Obs. Chir. and Medical Communicat.*) We have known the most careful observers deceived both in tumours of the extremities as well as internally, by forming their diagnosis from the pulsation alone. It is therefore necessary in these cases to take all the circumstances into consideration, from the earliest period of the disorder to its complete formation. When a soft tumour lies immediately upon an artery, the pulsation of the vessel may be felt through the tumour; and when the coagula of a real aneurism have become firm, the pulsation may be obscure or imperceptible.

The proximate cause of the true aneurism is indisputably a preternatural debility of the artery in some part, whereby it is rendered unable to resist the impetus of the blood, in consequence of which it yields, and is dilated into a sac. This may happen from a local injury; for example, a bruise; which may particularly be the case in those parts of the body where the artery has but few muscular parts to cover it, and is situated near a bone. Probably a sudden and violent elongation or stretching of the artery may occasion this topical weakness; at least we sometimes see true aneurisms arise after violent stretching of a limb, in fractures, dislocations, violent bodily exertions, convulsions, &c. Sometimes, probably, the cause may consist in a violent and inordinate motion of the blood: the artery may also be deprived of its support, by an abscess in any part of the body, and weakened in such a manner as to be unable to resist the impetus of the blood. In all these, and other similar cases, the aneurism deserves the name of a topical disease. Frequently, however, and perhaps in the majority of cases, the aneurism is the consequence of a general disease of the whole arterial system. According to the experience of Morgagni and others, aneurisms are said to be sometimes produced by the venereal, rheumatic, scorbutic, and other constitutional taints in the system. Sometimes these tumours arise spontaneously, without any occasional cause; frequently several of them are produced at the same time in different external and internal parts: we also find in dissecting the bodies of persons who have been affected with aneurism, that the arterial system is in many parts, nay, even universally, extremely feeble, and easily lacerated. This species of the disease, *DIATHESIS ANEURYSMatica*, is, in the present state of our knowledge, to be considered as altogether incurable, as we cannot determine its cause with certainty.

The false or spurious aneurism consists in a rupture of the artery, the blood being effused through the orifice into the surrounding cellular membrane. As this species, like the true aneurism, may be produced both in internal and external parts, it is likewise subdivided into the *internal* and *external*. The causes by which a preternatural orifice may be made in an artery, are numerous: *e. g.* sudden violent exertion of a limb or of the whole body, the lifting of heavy burdens, violent spasms, vomiting, &c. The most frequent cause, however, is a lesion of the artery by some foreign substance, as by the splinter of a bone; and particularly by the lancet, when blood-letting is performed in an unskilful manner, at the bend of the fore-arm, of which we therefore shall treat more minutely than of the other kinds.

In letting blood at the arm, the artery may be discovered to have been wounded, by the blood being thrown out with unusual force, in an uninterrupted but unequal stream, as it

were by jerks; also by its florid red colour; and, which is the most certain sign, by the blood flowing out in an even stream, with less force, when pressure is applied to the artery above the wound. In these cases the diffusion of the blood forming a spurious aneurism is generally owing to the fault of the surgeon, in attempting to stop the hæmorrhage too suddenly, either by pressing his fingers upon the wound, or by applying a bandage. The aneurism is produced either in consequence of the orifice in the external skin being displaced in such a manner that the blood can no longer be discharged through it, and must consequently diffuse itself in the cellular membrane; or by the pressure, which is hastily applied, being too weak, so as merely to close the orifice in the skin and vein, but not that in the artery, which consequently discharges the blood into the surrounding cellular membrane. The tumour produced in this manner is commonly of a red, bluish, and, finally, of a black colour.

The false diffused aneurism, arising from this cause, increases in size as long as the internal hæmorrhage continues; and if this be not speedily stopped, it produces violent pain and immobility of the limb, nay, at length, inflammation, suppuration, and gangrene. The most recent case of this kind, with which we are acquainted, is related in the sixth volume of the *Medical and Physical Journal*, by Dr. Adams, of Madeira; and in this case a perfect cure was effected, by long continued pressure on the artery, at the superior part of the arm.

The circumscribed spurious aneurism is produced, when the hæmorrhage has at first been stopped by the application of a proper pressure, but the bandages have been removed too early, and before the orifice of the artery has been closed, so that the blood is effused through the wound, still left, or newly torn open, into the surrounding cellular texture; but, on account of the adhesion of the cellular membrane, produced by the pressure previously applied, cannot penetrate into its cavities, and consequently collects itself into a mass, near to the orifice in the artery, dilating the cellular membrane into a sac. Sometimes, however, though rarely, this kind of aneurism is produced immediately after the artery has been wounded; namely, when on account of the smallness of the puncture in the artery, the hæmorrhage takes place so slowly, that the blood first discharged becomes coagulated, so as to stop the apertures through which the succeeding discharge might pass into the cavities of the cellular membrane, and prevent its diffusing itself. Sometimes also the artery is covered with a membrane, aponeurosis, &c. which prevents the diffusion of the blood, and compels it to collect into a mass.

The circumscribed false aneurism consists therefore of a sac, formed out of the cellular texture, and filled with blood, which is situated close to the artery, and communicates with the artery itself by means of the wound in it. In the false aneurism a pulsation can almost always be perceived, and that the more distinctly, the smaller the tumour is. The larger this sac becomes, the more it loses its elasticity, the greater becomes the accumulation of coagulated blood within it, and the weaker consequently becomes the perceptible pulsation, which in very large aneurisms of this kind entirely disappears. At first the tumour is small, and vanishes entirely under the pressure of the finger; but as soon as the pressure is removed it appears again. It vanishes in the same manner, when pressure is applied to the artery above the tumour, and re-appears when that pressure is removed. As soon as coagulated blood has accumulated in the sac, the tumour can no longer be made entirely to disappear by pressure, but it becomes hard. It is without pain, and the integuments that cover it, present the natural appearance. When

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once produced, it increases with a constant and regular progress, and at last becomes enormously large. The flow of the blood into the limb below the tumour is always impeded, the pulsation of the arteries in it becomes feeble and small, and the limb itself is cold, collapsed, torpid, pale, or oedematous. A cavity of the neighbouring bones frequently takes place. This aneurism may also at length burst, and produce a fatal hæmorrhage, unless speedy assistance can be procured. The part where it bursts previously grows thin, soft, and bluish, or of a gangrenous aspect.

Notwithstanding the great resemblance which exists between the phenomena of the true and those of the false aneurism, they may however in general be easily distinguished from each other, especially after the first period of their existence. The true aneurism yields to the pressure of the finger very quickly, and re-appears as quickly, when the pressure is removed; the false aneurism, on the contrary, yields only in a gradual manner, and appears again in the same manner, as the blood contained in the sac cannot be wholly pressed through the orifice of the artery, nor again be effused, except by slow degrees. Sometimes a whizzing sort of noise may be distinctly heard, when the blood is pressed into the orifice, and again poured through it. The pulsation in the false aneurism is always weaker; and, as the tumour increases in size, diminishes much more rapidly than in the true aneurism, in which, even though it have attained a very considerable size, a strong pulsation can always be felt. The false aneurism becomes sooner hard than the true one, and cannot then be made entirely to disappear by pressure, as coagulated blood is very readily accumulated within it. Moreover, any mistake that may be occasioned by the difficulty of the diagnosis between the two species, cannot often be attended by any bad consequences, as they both require pretty much the same method of treatment. The internal false aneurisms are, on account of the pulsation being much weaker and imperceptible, and vanishing much sooner, than in the true aneurisms, as difficult, nay more difficult to be distinguished than these, though in other respects they excite similar symptoms.

When, in letting blood at the arm, the surgeon discovers, by the signs which we have already mentioned, that an artery has been wounded, he must immediately apply a **TOURNIQUET** to the upper part of the arm, in order first to stop the hæmorrhage, and obtain time for applying his bandages with the requisite care and accuracy. The hæmorrhage from the vein is to be stopped with the common bandage. But, in order permanently to arrest the hæmorrhage and close the wound of the artery, he must apply a compress with great exactness, which must be sufficiently tight entirely to prevent the hæmorrhage, and not easily to be removed from its situation; it ought also to close merely the artery itself, without affecting the lateral branches and the veins, lest a swelling and mortification might ensue from want of circulation. A pledget, or firm compress, is to be applied, the inner surface of which must be somewhat broader than the opening in the vessel, immediately upon the external wound, otherwise the pledget might easily miss the orifice of the artery. All now depends upon this compress being sufficient to stop the wound, its being applied with an uniform pressure, and in such a manner as not to prevent the motion of the blood through the lateral branches and veins. The common bandage used in blood-letting does not answer these purposes so conveniently as by means of Plenks' apparatus, which, however, must be applied with great exactness. (Jof. Jac. Plenks Sammlung von Beobachtungen ueber einige Gegenstände der Wundarzneiwissenschaft. Vienna, 1775. 8. p. 195. Also: Richters Anfangsgruende der Wundarz-

neyk. B. i. § 531. tab. iv. f. 7.) Should a small tumour arise close to the point of the pledget, the apparatus should first be screwed somewhat tighter, as the pressure was possibly not sufficiently strong. If nevertheless the tumour should grow still larger, we may be certain that the compress does not lie upon the wound of the artery; the tourniquet must therefore be immediately applied, and the dressings removed; after which they must be again applied with as great exactness as possible; but first the extravasated blood must be pressed back into the artery, by gently rubbing and squeezing the tumour. If at any subsequent time it should become necessary to remove the apparatus from the limb, the tourniquet must be employed in the same manner.

The apparatus being properly applied, the arm should be suspended, moderately bent, in a sling, and kept as much as possible at rest during the whole course of the cure. Should any swelling appear in the fore-arm, we ought to endeavour to disperse it by diligent friction with spirituous and aromatic remedies. Moreover, the surgeon should daily examine whether the bandages remain firm and unmoved in their situations, and as soon as he discovers any tumour, he should proceed as above recommended. The length of time during which the compress ought to remain in its situation, in order to preclude the possibility of a future hæmorrhage, cannot be accurately determined: if, therefore, we wish to examine whether it may be safely removed, we ought first to apply the tourniquet, and then take off the apparatus: this being done, we should gradually loosen the tourniquet, and carefully observe whether any tumour is produced at the place of the wound. Should no such tumour appear, we need not use these bandages any longer; it will, however, be proper, for security's sake, (as in some instances the wound of the artery has been known to burst open afresh) to apply gentle pressure, by means of a compress, to the artery, immediately after the bandages have been entirely removed, in order to diminish the flow of blood through it, and prevent its bursting. Every other motion of the limb should be avoided for some time after.

When a circumscribed false aneurism has already been produced, we may also in that case employ compression, provided the tumour be still soft, and can be made entirely to disappear by pressure. For, as experience has proved, that the efforts of nature alone may, in such circumstances, sometimes effect a perfect cure of the aneurism, (Repertorium Medicin. u. Chirurg. Abhand. &c. b. i. Leipzig. 1792. 8vo. p. 107.) we have the greater reason to expect a favourable event from the employment of compression. The surgeon ought, therefore, after having applied a tourniquet to the arm, as in the former case, to return the blood into the artery, by means of repeated pressing and stroking of the part, and then apply the compress. But when there is already coagulated blood in the sac, and the tumour can no longer be made to disappear under pressure, compression can be of no use. Should there, however, be but a small quantity of coagulated blood, we may still attempt compression; for it may sometimes succeed, and when it does not, it produces the advantage of compelling the blood to flow with greater force into the lateral branches, by the distention of which a favourable issue of the operation is secured.

Mr. Theden (in Neue Bemerkungen u. Erfahrungen zur Berinherung der Wundarzneik. u. Arzneygelehrsamh. th. i. Berlin. 1792. p. 20. & th. ii. p. 52.) recommends another method for curing aneurisms, which is applicable even where there is already a very considerable quantity of extravasated and coagulated blood. When, in performing the

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the operation of blood-letting, we have wounded an artery, we are to suffer more than the proper quantity of blood, may even so much as to induce syncope, to be discharged, and in the mean time prepare whatever is requisite for bandaging the limb. Three or four compresses, into the lower-molt of which we may introduce a small piece of money, are then to be applied in such a manner as to fill up the cavities in the angle of the elbow, which, till the rest of the bandages are ready, is to be pressed by an assistant so tight upon the orifice of the artery, that no blood can be discharged from it. The bandaging must then be performed spirally, a *linguette* of the thickness of a finger's breadth must be laid upon the trunk of the artery, and inclosed in the bandage. When the hæmorrhage has been stopped in this manner, a quantity of Theden's *aqua traumatica* is to be poured upon the whole of the bandages, so as to wet them through and through. The bandages should not be applied too tight at first, if we intend to soak them with the liquid, as it is well known that moisture causes them to contract and compress the limb with greater force, by which means obstruction, tumour, and pain might be produced. Should we, however, have applied them tight, on account of the hæmorrhage, we must not wet them till after they have become somewhat loose. As our success depends upon the bandage lying equally close in every part, each turn of the bandage ought to cover half of the former, so that no part of the limb remain uncovered, or not inclosed within the bandage; neither ought any one turn of the bandage to be drawn tighter than the rest.

The first bandages may be suffered to remain on the limb for the space of three or four days, unless they should grow loose at an earlier period, as generally happens when there is a large quantity of extravasated blood, and this soon begins to be separated and re-absorbed. In applying the bandages the second time, we proceed in the following manner. The roller is taken off from the fingers, hand, and fore-arm, and these parts are bandaged anew before the bandages and compresses are removed from the joint and humerus. The roller is then applied over the elbow, and upwards to the axilla. The end of the fillet is carried round the neck, in order to prevent the bandages from sliding downwards, and, as an additional security against this accident, the turns of the roller are sewed to each other from the elbow to the arm-pit; the whole is soaked with Theden's vulnerary, and kept continually wet. These dressings may remain in this condition for three or more days, provided the bandage becomes neither too tight nor too loose, and applies to the limb in an uniform manner. If, says Mr. Theden, all these measures are adopted immediately after the accident, the cure may certainly be effected in the space of eight days, only we must examine very attentively whether, at the place where the artery has been wounded, a new tumour or effusion takes place. Should this happen, we must still continue to apply the bandages for some time; but if the blood has been effused from the beginning into the cellular substance, as sometimes happens, the bandages must be worn till the whole has been re-absorbed, and the wound properly cicatrised. The utility of this method of Theden's has been confirmed by several practitioners, especially by the successful cure of a remarkable case, related by Mr. Schmalz. (*Seltene Chirurg. u. Medicinische Vorfälle. Leipzig. 1784. 8vo. p. 59.*)

But when there is a great deal of extravasated blood in the sac, when the tumour is very large, so as not to admit of compression or bandaging, and there is reason to apprehend that the tumour may burst open, an operation must be performed without delay. The tourniquet being applied

to the humerus, the skin which covers the tumour is laid open by an incision, made according to the direction of the artery, and carried across the middle of the tumour, so as to extend from one of its extremities to the other. The sac, which is generally situated immediately under the skin, is opened in the same manner. The whole of the extravasated blood contained in the sac is then taken out, upon which the wounded artery becomes distinctly visible at the bottom, and should be tied. But in order completely to stop the hæmorrhage and prevent its recurrence, the artery must be tied not only above, but also below the orifice. Sometimes the surgeon is obliged to apply even three or more ligatures; for when, in the vicinity of the wound of the artery, between the two principal ligatures, any lateral branches proceed from the trunk of the artery, these must be tied close to the trunk.

Since, after the operation has been performed, every thing depends upon the restoration of the circulation in the limb, by means of the distension of the lateral branches in consequence of the increased impetus of the blood in them; the surgeon must be particularly attentive in performing the operation, not to injure these branches. For this purpose the two ligatures must be applied as near the wound of the artery as can be done with safety, lest any lateral branch should happen to be included between them, whereby it would necessarily be rendered useless. On this account also we must not use a very broad two-edged needle for applying the ligatures. Mr. Desfault used an elastic needle of his own invention. It is needless, after having tied the vessels, to apply another tourniquet or other bandage to the humerus, with a view to prevent the recurrence of the hæmorrhage; for if the ligatures have been skillfully applied this precaution will be superfluous. In cases where the ligatures become loose, and successive hæmorrhages are produced, the method of Mr. Desfault has been recommended. At the third hæmorrhage, which took place on the eleventh day after the operation had been performed on the femoral artery, he first applied new ligatures above and below, secured them properly, and renewed the bandages. But in order to prevent a recurrence of the hæmorrhages, which might have supervened in consequence of the collapse of the artery and the ligatures growing loose, he applied, four days afterwards, over the ligatures, and at the sides of the artery, small flat pieces of soft wood, fifteen lines long and three broad, which were secured by winding them round with several turns of waxed thread, and were made to compress the artery at the sides with more or less force, by introducing under their upper extremity small wedges of the same wood. By this means the impetus of the blood was restrained, and a new effusion prevented. Suppuration took place in the wound, and on the 35th day after the operation, the small pieces of wood fell off, the ligatures having come away some days earlier.

If it can be avoided the surgeon must take care not to include the nerve in the ligature. Sometimes the extravasated blood, which frequently penetrates behind the artery, separates the nerve from the artery; and in this case we may, in order to avoid inclosing it in the ligature, bend the patient's arm, before applying it, and by means of a somewhat crooked probe, introduced into the open space, raise up the artery, and remove it from the bone, and then introduce the needle, to which the thread is attached, close under the artery. We must, however, not raise up the artery with too much force, lest we should tear some of the lateral branches. Moreover, it is always advisable not to draw the ligature tighter than is necessary for stopping the hæmorrhage, lest we should cut through the coats of the vessel,

or cut or press the nerve too forcibly, in case it should happen to be included. Frequently the artery is so much detached from all the neighbouring parts, that the thread may easily be drawn through below it, by means of a common needle with the eye foremost. But when the artery is not detached from the subjacent parts, we must make use of a pointed needle having an eye near its point, taking care always not to puncture the nerve, or any tendinous parts, or to include them in the ligature. The ligature should be secured with a double knot, and the ends of the threads suffered to hang out about two inches long. The tourniquet may then be immediately loosened, in order that we may see whether the ligature be sufficiently tight; after which the wound is to be dressed lightly with lint, and the proper bandages applied; and the patient should be directed to carry his arm in a sling.

The wound is treated after the usual manner till the ligatures have come away. In order to restore the natural heat in the fore-arm, and to disperse the tumour in it, it may frequently be rubbed with spirituous, stimulant, and aromatic applications. M. Pouteau assures us, that no remedy has succeeded so well with him, in restoring the natural warmth and sensibility of the fore-arm, as dry heat applied by means of hot ashes or sand. The remaining debility may, in general, be speedily removed by using the shower-bath, and external tonic applications.

When in consequence of an aneurism in a limb, the neighbouring parts are destroyed, when suppuration or caries have taken place in a high degree, or when the limb remains lifeless after the operation, so as to threaten the production of gangrene, amputation becomes necessary. We ought, however, not to be too hasty in proceeding to this operation, since even in cases where gangrene has seemed to be unavoidable, the limb has still sometimes been preserved; frequently after the lapse of several weeks the pulse has again become perceptible. We shall here subjoin an account of the method employed with success by Dr. Adams. (Med. and Phys. Jour. vol. vi. p. 555.)

On the 4th of February, 1797, a young baronet was bled in the *vena mediana basilica*, and from his having worn a tight flannel sleeve, it was not immediately observed that the blood came also from an artery. The orifice having been closed in the usual manner, bled again in the evening, but was stopped before Dr. Adams could see the patient. On the following morning a considerable extravasation of blood took place. In a few days, however, the gentleman was not thought in need of further attendance, although the arm did not recover its ordinary size. Six weeks afterwards a small circumscribed tumour had arisen in the arm, below the original cicatrix; and, on pressure, a very obscure pulsation might be felt; it was firmly bound by the fascia, and not at all discoloured or painful. The tumour increased suddenly towards the end of March, with the same circumscribed appearance and an evident surrounding extravasation. Strong pressure was now applied by means of a roller to the upper part of the fore-arm, exactly upon the trunk of the artery, so as to lessen its pulsation; but the bandage was kept hollow, except over the artery, by several pieces of cane applied along different parts of the limb. Although this degree of pressure was had recourse to with the view of obliterating the large trunk of the artery, an increase of the swelling took place in about ten days, accompanied with slight pain.

The mechanical pressure on the vessel itself was then augmented, until but little pulsation could be felt in the radial artery. Painful sensations near the wrist, along the lower arm, and under the aneurism, were now complained of as intolerable. The fingers were without sensation, the whole

arm was enlarged, the veins became turgid, and the pulse remained very feeble. This process being persevered in, Dr. Adams had at length the satisfaction to obliterate the main trunk of the brachial artery, and to effect a complete cure. The mass of coagulated blood, however, was discharged by a gangrenous sore at the bend of the arm, about two inches in diameter, which was cicatrized before the end of July, 1797; and in January, 1798, every unpleasant symptom had disappeared. This plan of treatment, by *compression*, was adopted by the author without his having known that it had been several times practised with success, in different parts of the continent, for other cases of aneurism.

The treatment of the true external aneurism is in most respects the same as that of the false. If it be small in size, and not of long standing, external astringent applications, as also ice, have been used with very good effect. In trying such an experiment we may, at the same time, apply a tourniquet to the artery, above the swelling, in order to diminish the quantity and momentum of blood flowing into the sac. Compression has likewise been recommended in this species of aneurism, but only at the commencement. Mr. Bruckner, however, (D. Jull. Chr. Loder Journal fuer die Chirurgie, &c. b. v. ll. 2. Jena 1797. p. 248.) has used it in a case of a very large and old aneurism in the hollow of the knee, in combination with the remedies before mentioned, together with Theden's bandage applied from the toes upwards, and the concurrence of other favourable circumstances, with complete success. When compression is applied, it ought to be to every part of the surface of the tumour, as well as in the course of the artery; and it will act with greater safety and efficacy, if we combine it with Theden's manner of bandaging, as was done by Mr. Bruckner.

When none of these remedies are applicable, we must proceed to the operation, which (if we follow the old mode) is in no essential circumstance different from that performed in cases of false aneurism. It is, however, to be observed, that it is not advisable to cut through the posterior part of the sac, as in that case the ends of the artery easily contract themselves under the flesh; and if the first ligature should grow loose, they cannot easily be tied again. It appears from experience, that the operation has been far more rarely attended with a successful event in the true than in the false aneurism; it being frequently followed by violent pain, fever, swelling, gangrene, and death. Only in those true aneurisms which are small, and originate from external causes, the surgeon is able to operate with expectations of a successful event. Sometimes, however, these aneurisms require amputation to be performed, and that, under the same circumstances by which the operation is indicated in the false aneurism. But as this operation, as well as the application of the ligatures, very frequently miscarries, all the precautions with respect to the application of the ligatures, that have just been mentioned, are here also to be recommended.

Internal aneurisms, both true and false, are incurable: all that we can do is to retard the progress of the disease, by frequent blood-letting, spare diet, and the careful avoiding of every thing by which the blood may be heated, or its motion accelerated. Moreover, it is very advisable to cover the tumour well, as soon as it appears externally, and to defend it against all external violence, by friction, blows, &c. whereby its bursting might be hastened.

To the cure of the diffused false aneurism two things are requisite; namely, to close the wound of the artery, in order to stop the hæmorrhage, and to disperse the extravasated blood. The first is performed by compression with a pledget, and the second by applying bandages to the whole limb, according to Theden's method, and keeping them constantly

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stantly wet, either with Theden's vulnerary, or a solution of sal ammoniac in vinegar and water. But if the extravasation spreads farther, and the hæmorrhage continues, the operation must be performed without delay.

The mixed aneurism, produced by a laceration of the outer and a distension of the inner coat of the artery, is rare, and exhibits no external symptoms by which it can be distinguished from the true aneurism. This, however, makes no difference; for we endeavour to remove it, like a true aneurism, by compression; and when this either does not succeed, or 'cannot be applied, the operation is performed in the same manner as in the true aneurism. The second species of the mixed aneurism is more frequent. This consists at first of a true aneurism, in which the sac, by occasion of violent motion, concussion, a bruise, or even spontaneously, in consequence merely of too great distension, has burst, and produced an effusion of blood, which surrounds the true aneurism. The change of a true into a mixed aneurism may in general be easily discovered. The swelling, which before was circumscribed, suddenly spreads; the strong pulsation, which before was distinctly perceptible in the tumour, suddenly grows weak and indistinct, or even becomes altogether imperceptible; and the tumour, which formerly was soft, suddenly becomes hard to the touch. The mixed aneurism, on account of the continual effusion of blood, and the increase of the false aneurism, generally requires that the operation should be speedily performed. The most common mode of doing this (perhaps not the most eligible) we have already described; but it is a fact worthy of notice, that the Greeks were acquainted with the practice lately recommended, of tying and dividing the trunk of the artery high above the tumour, as will appear from the following extract (*Ætii Tetr. iv. Serm. iv. cap. 10.*) "At vero quod in cubiti cavitate fit aneurisma, hoc modo per chirurgiam agredimur: Primum arteria supernè ab ala ad cubitum per internam brachii parte simplicem sectionem, tribus aut quatuor digitis infra alam, per longitudinem facimus, ubi maxime ad tactum arteria occurrit; atque ea paulatim denudata, deinceps incumbentia corpulentia sensim exoriamus ac separamus, et ipsam arteriam cæco uncino attractam duobus sili vinculis probe adstringimus, medianque inter duo vincula difficamus; et sectionem polline thuris explemus, ac linamentis inditis congruis deligationibus adhibemus." Afterwards we are directed to open the aneurismal tumour at the bend of the elbow, and when the blood has been evacuated, to tie the artery twice, and divide it again. If the ancients had only omitted the latter part of their operation, they would absolutely have left nothing to be discovered by the moderns. What a striking example of the bold manner in which our forefathers have acted without being guided by the lights of anatomy and physiology! But there are two or three passages in Galen, Celsus, and Hippocrates, from which we may suspect that even *Ætius* himself was not the inventor of this operation of tying the trunk of an artery, &c. See also *Paul. Ægin. lib. vi. cap. 37.*

The operation of tying the large trunk of an artery, above the aneurism, seems to have been regarded by *Dr. Wm. Hunter* as "a proposal which a modern surgeon would think of with horror" (*Med. Obs. & Inq. vol. i. p. 335.*); and *Mr. Bromfield* calls it a "most extravagant proposition." (*Chir. Obser. vol. i. p. 306.*) But we are now fully convinced, by the evidence of incontrovertible facts, that this operation "may be done with a fair prospect of preserving the limb." *Mr. Bromfield* relates, that he "once saw an attempt of this kind in a true aneurism, situated in the ham;" on which, however, he makes "no further remark, than that the patient died," and that he believes

"the embarrassments which occurred, as well as accidents in the operation, will deter the operator from making a second attempt." We have reason to suppose that most of the cases of aneurism on record, in which patients recovered, after long enduring compression upon the artery, have in reality been cases where the vessel was totally obliterated by the pressure; although the opinion of surgeons has usually been, that the orifice of the artery had previously coalesced and healed like a common wound, still allowing the blood to circulate as before. Cases are likewise recorded in which a spontaneous cure of aneurism has been effected; and in these we may also conclude, that the vessels were obliterated as completely as they would have been by a ligature in the modern operation.

In the former part of this article we said, that a popliteal aneurism was one of those which occurred the most frequently. And its situation being such as to afford a full command of the vessel affected, this species of the disease has obtained a considerable degree of attention among surgeons, in hopes of their saving the limb as well as the life of the patient. After having made various trials, it is ascertained that the collateral branches of the femoral artery, of those of the profunda femoris, inosculating with the arteries of the leg, are generally sufficient to keep up the circulation in the lower extremity; and that the inosculating blood vessels of the arm, in like manner, will dilate and nourish the limb when the humeral artery has been tied; so that in most aneurisms of the extremities, we have a very considerable chance of preserving both the member and the life of the patient.

Paulus Ægineta, and after him the Arabian physicians, used to make two ligatures, one above and the other below the aneurism; after which they let out the coagulated blood found within the tumour, and healed up the wound according to the common principles of surgery. But *Guillemeau*, one of the disciples of *Ambrose Paré*, pointed out a more simple operation in the case of an aneurism at the bend of the arm: he laid bare the tumour, passed one ligature under the artery above the diseased part, then emptied the sac, and closed the wound. He directs the same plan to be adopted in other cases of aneurism: "Si en quelque autre partie extérieure, il se presente au chirurgien pareil aneurisme, il peut seurement decouvrir le corps de l'artere vers sa racine et partie supérieure, et la lier de même façon, sans autre cérémonie." (*Les Oper. de Chir. liv. x. c. vi.*)

In the year 1714, *M. Anel*, of Paris, published an improvement on *Guillemeau's* method; which consisted in making a longitudinal incision over the aneurism, without wounding it, then making a single ligature upon the vessel, close above the tumour, and leaving the rest to nature. It is almost needless to mention, that in all these operations the surgeon applied a tourniquet upon the affected limb, so as to obtain an entire command of the artery. By little and little *Anel* found the tumour disappear, until the whole was absorbed. This practice did not meet the approbation of surgeons in general, although it was often followed by *Heister* and some few later operators. Indeed that author thinks it doubtful "whether or no this method will succeed so as to save the limb in wounds of the large crural artery;" (*System of Surgery, part ii. sect. 1. chap. xiii. § 22.*) and it has therefore been reserved for our contemporaries, to determine the point by actual experiment. We do not wonder, however, at the doubt expressed by *Heister*, as he frankly confesses, that "he cannot conceive in what manner the blood is circulated through the lower parts of a limb, after this operation." How would he then have been surprised to learn, that it is even possible for a patient to recover of his limb,

limb, when the inguinal, or the subclavian artery, has been surrounded by a ligature!

During the month of June, 1785, M. Dessault, of Paris, performed the following operation for a popliteal aneurism (See Journ. de Médecine, tome lxx. p. 45—471. Encycl. Methodique, l'Article Aneurism, p. 137. and Sabatier de la Méd. Opératoire, tome iii. p. 7.): he made an incision about two inches above the aneurismal tumour in the patient's ham; and, when he had exposed the artery, he separated it from the adjacent nerve, and passed a ligature around it, leaving the aneurism uncutted. The wound was dressed in a simple manner, with a loose ligature cast around the former one, as an additional security against future bleeding. The symptoms for the first six days were mild, and promised a favourable event; but M. Dessault thought it prudent to tie the second ligature, &c., on the sixth day after the operation. The swelling diminished rapidly; the ligatures fell off on the eighteenth day, and there was a plentiful discharge of bloody matter on the day following, which caused nearly the entire disappearance of the aneurism. In short, the external opening was soon healed, and the cure seemed complete; when, unfortunately, the patient died of another complaint.

During the month of December, in the same year, an operation, somewhat similar to that of Dessault, was performed by Mr. John Hunter. (See Lond. Med. Journal, vol. vii. p. 391. and Transact. of a Society for the Improv. of Med. and Chir. Know. vol. i. p. 138.) Mr. Hunter's patient was a coachman, 45 years of age; he was admitted into St. George's hospital with a popliteal aneurism, which he had first perceived three years previously to his admission, and had observed it gradually increase during the whole of that period. It was so large as to distend the two ham-strings laterally, and make a very considerable rising between them; the pulsation was very distinct, and to be felt on every side of the tumour. The leg and foot of that side were so swelled as to be much thicker than the other, and were of a mottled brown colour; the swelling was not of the œdematous kind, but felt firm and brawny, probably from the extravasation of coagulable lymph; the leg retained its natural shape, excepting that it was larger. Previously to performing the operation, a tourniquet was applied upon the upper part of the thigh, but not tightened, that the parts might be left as much in their natural situation as possible.

The operation was begun by making an incision on the anterior and inner part of the thigh, rather below its middle, which incision was continued obliquely across the inner edge of the sartorius muscle, and made large, to give room for the better performing of whatever might be thought necessary in the course of the operation. The fascia which covers the artery was then laid bare about three inches in length, after which the artery itself was plainly felt. A slight incision, about an inch long, was then made through this fascia, along the side of the vessel, and the fascia dissected off; by this means the artery was exposed. Having disengaged the artery from its lateral connections by the knife, and from the other adhering parts by the help of a thin spatula, a double ligature was passed behind it, by means of an eyed probe. The doubling of the ligature brought through by the probe, was cut so as to form two separate ligatures. The artery was now tied by both these ligatures, but so slightly, as only to compress the sides together. A similar application of ligature was made a little lower. The reason for having four ligatures, was to compress such a length of artery as might make up for the want of tightness, it being wished to avoid great pressure on the vessel at any one part. The ends of the ligature were carried directly out

at the wound, the sides of which were now brought together, and supported by a sticking plaster and a linen roller, that they might unite by the first intention.

The limb was found, some hours after the operation, not only to retain its natural heat, but even to be warmer than the other leg. The second day after the operation, the brawny firmness of the leg was considerably diminished, and it was become soft, loose, and a good deal smaller, and the aneurismal tumour had lost more than one third of its size.

Nothing could shew more plainly the action of the absorbents, than the change the leg had undergone in so short a time; the diminution of the tumour probably arising from the fluid blood which it contained having passed into collateral branches, or into the tibial artery.

The fourth day, on the removal of the dressings, the edges of the wound were found united through its whole length, excepting where prevented by the ligatures; there was neither pain nor tumefaction in the part; but the aneurismal tumour was the same as on the second day.

On the ninth day after the operation there was a considerable discharge of blood from the part where the ligatures passed out; a tourniquet was therefore applied on the artery above, which stopped the bleeding; and, although the tourniquet was taken off a few hours after, no blood followed. The head of a roller was then placed upon the wound, in the direction of the artery, and over that the tourniquet, which was not, however, tightened more than was thought sufficient to take off the impetus of the blood in that portion of the artery.

On the tenth day appearances were much the same, only that between the compress and the knee there appeared a little fullness, like beginning inflammation. On the eleventh day this was gone off, and on the fifteenth some of the ligatures came away, followed by a small discharge of matter, the tumour in the ham being lessened. On the seventeenth day the parts surrounding the aneurismal tumour were more reduced and pliable, so that it was distinctly to be felt.

About the latter end of January, 1786, six weeks after the operation, the patient went out of the hospital, the tumour at that time being somewhat lessened, and rather firmer to the feel. He was ordered to come to the hospital once every week, and, in the mean time, to make some degree of pressure, by application of a compress and bandage, with a view to excite the absorbents to action, which in most cases has a good effect.

About the middle of February the tumour had decreased, and was become still firmer. March the 8th, the wound, which had cicatrized, broke out again, and the patient was taken into the hospital. About the 8th of April, some of the remaining thread of the ligature came away, and an inflammation appeared upon the upper part of the thigh. In the middle of May, a small abscess broke at some distance from the old cicatrix, at which opening some matter was discharged, but no pieces of ligature were observed. Several small threads were, at different times, discharged from the old sore, and the swelling subsided; but the thigh soon swelled again to a greater size than before, attended with considerable pain. In the beginning of July, a piece of ligature, about one inch in length, came away, after which the swelling went off entirely, and he left the hospital the 8th of July, at which time there remained no appearance of tumour in the ham, he being in every respect well.

After leaving the hospital, the man returned to his usual occupation of driving a hackney-coach; and being, from the nature of his employment, much exposed to cold, in March, 1787, he was seized with a fever of the remittent kind, which carried him off. He had not made any complaint

plaint of the limb on which the operation had been performed, from the time of his leaving the hospital.

He died on the 1st of April 1787, fifteen months after the operation; and leave was procured, with some trouble and considerable expence, to examine the limb, seven days after death, at which time it was entirely free from putrefaction.

The cicatrix on the anterior part of the thigh was scarcely discernible, but the parts under it felt hard. The ham had no appearance of tumour, and was to the eye exactly like that of the other limb; there was, however, a solid tumour perceptible to the touch, filling up the hollow between the two angles of the thigh bone.

The femoral artery and vein were taken out above the giving off the branch called profunda, and a little below the division into the arteriæ tibiales and interossee. The arteries and veins that were pervious being injected, the whole was carefully dissected.

The femoral artery was impervious from its giving off the arteria profunda as low as the part included in the ligature, and at that part there was an ossification for about an inch and an half along the course of the artery, of an oval form, the rim of which was solid, becoming thinner towards the centre, and not bony, but ligamentous. Below this part the femoral artery was pervious down to the aneurismal sac, and contained blood, but did not communicate with the sac itself, having become impervious just at the entrance.

What remained of the aneurismal sac was somewhat larger than an hen's egg, but more oblong, and a little flattened, extending along the artery below for some way; the blood pressing with greater force in that direction, and distending that part so as, in some measure, to give the appearance of a separate bag. The sac was perfectly circumscribed, not having the smallest remains of the lower orifice into the popliteal artery: whether this arose from the artery being pressed upon by the inferior portion of the sac, as appears to be the case in common, or was in consequence of the sac contracting after the operation, I will not pretend to determine; but it contained a solid coagulum of blood, which adhered to its internal surface. A section made of this coagulum, appeared to be composed of concentric lamellæ, uniform in colour and consistence.

The popliteal artery, a little way below the aneurismal sac, was joined by a small branch, very much contracted, which must have arisen either from the profunda, or the trunk of the femoral artery. About two inches below the sac, the popliteal gave off, or divided into, the tibiales.

The profunda was of the usual size, but a good deal ossified, for some length after leaving the femoral artery; the two tibials, where they go off from the popliteal, were in the same state.

The trunk of the femoral vein, where it passed along the side of the tumour, must have been obliterated; for at this part it appeared to send off three equal-sized branches, passing over different parts of the aneurismal sac: these must have been dilated branches, none of them having the course which the trunk of the vein should have pursued.

These appearances throw some light upon the changes which took place in the limb after the operation. The ligature upon the femoral artery impeded the passage of the blood into the sac so much, as to allow its contents to coagulate, and render the opening into it from the artery impervious. By this a stop was only put to the increase of the tumour, its reduction to the size met with in the dead body, must have been the effect of absorption.

The conclusion to be drawn from the above account, appears a very important one, viz. that simply taking off the

force of the circulation from the aneurismal artery, is sufficient to effect a cure of the disease, or at least to put a stop to its progress, and leave the parts in a situation from which the actions of the animal œconomy are capable of restoring them to a natural state.

We have given the history of this case at full length, because the method adopted by Mr. Hunter has been since followed, with some slight variations, in almost every part of Europe. There is no reason, we believe, for suspecting that Mr. Hunter took the hint of this operation from any of his predecessors: but, as Mr. Home has stated, this practice was the result of an opinion entertained by Mr. Hunter that the artery in aneurismal cases is generally diseased some way above the sac, and therefore that the common cause of failure arose from tying an unsound artery, not disposed to coalesce before the separation of the ligature.

The femoral and popliteal arteries are portions of the same trunk, presenting themselves on different sides of the thigh, and are readily come at in either situation; but where the artery is passing from the one side to the other, it is more buried in the surrounding parts, and cannot be exposed without some difficulty. In performing the operation for the popliteal aneurism, especially when the tumour is large, the ligature was commonly applied on the artery at that part where it emerges from the muscles. This mode of performing the operation will be found inadequate, if the disease of the artery extends above the sac; for if the artery should afterwards give way, there will not be a sufficient length of vessel remaining, to allow of its being again secured in the ham. To follow the artery up through the insertion of the triceps muscle, to get at a portion of it where it is found, becomes a very disagreeable part of the operation: and to make an incision upon the fore-part of the thigh, to get at and secure the femoral artery would be breaking new ground; a thing to be avoided, if possible, in all operations.

Mr. Hunter, from having made these observations, was led to propose, that in this operation the artery should be taken up in the anterior part of the thigh, at some distance from the diseased part, so as to diminish the risk of hæmorrhage, and to admit of the artery being more readily secured, should any such accident happen. The force of the circulation being thus taken off from the aneurismal sac, the progress of the disease would be stopped: and he thought it probable, that if the parts were left to themselves, the sac, with its contents, might be absorbed, and the whole of the tumour removed; which would render any opening into the sac unnecessary.

Numerous trials have lately been made in the different public hospitals which confirm the truth of Mr. Hunter's reasoning. He had several opportunities of performing this operation before he died, and generally with perfect success: but reiterated experience has shewn that it is best to secure the artery with only one strong ligature, without separating the vessel from its attachments. Some attempts have been made, both in London and Paris, to improve on this method, by giving a greater latitude for pressure on the artery, (either by the interposition of extraneous substances between the ligature and the vessel, or by employing a broad piece of tape;) but such attempts have been always attended with manifest disadvantages. The only considerable deviation from Mr. Hunter's mode, which we think deserves particular attention, is that of making two firm ligatures, about an inch distant from each other, and then dividing the artery between them; after the manner recommended by *Ætius*, thirteen centuries ago, for brachial aneurisms.

In comparing this procedure with that which has formerly been had recourse to in popliteal aneurisms, every

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person must be struck with its decided superiority. The operation is in itself simple; it requires but a short time in the performance, and produces little, if any, affect on of the constitution; but its advantages are more clearly seen by contralling it with the common mode of operating for the popliteal aneurism. This is, by exposing the sac in the ham through its whole extent, laying it open, scooping out the blood, searching for the two offices leading into it, and taking up the artery with a ligature both above and below the sac. When this operation is over, there remains a large deep seated sore, composed of parts not perfectly in a natural state, and in a most disadvantageous situation; which sore is to suppurate, granulate, and heal; a process that is not soon performed, and which must leave a stiff knee for some time afterwards. Yet this is considering the operation in the most favourable view, since there is always a risk, from the artery being diseased so close to the sac, of the patient dying from a secondary bleeding; and when that does not happen, there is still some danger of not being able to support the constitution during the healing of a large sore, under circumstances so very unfavourable.

It must not be dissimbled, however, that there are sometimes very embarrassing circumstances attending the new operation, and that patients are not always free from the danger of hæmorrhage, even so late as the third or fourth week after the ligature of the artery. 1st. We can never be certain, in cases of spontaneous aneurism, that the vessel is not diseased along its course, above the part on which the ligature was made. 2dly. We have no positive security against the occurrence of an ulceration just under the ligature, from which a fatal bleeding may at any time ensue. 3dly. We cannot always effect an adhesion of the sides of the artery, so as to produce a perfect obliteration of its cavity, by any means within our power. Besides which, the first surgeons may possibly fail in their endeavours to include the naked vessel within a ligature; and at length may be compelled to make a fresh incision, or to amputate the patient's limb, in order to save his life. But, with all these disadvantages, some of which indeed must apply to any kind of operation for aneurism, we are fully persuaded that Mr. Hunter's plan is, on the whole, the most eligible and successful. It therefore cannot but strike us with surprize to find Mr. Benjamin Bell, in the last edition of his surgery (vol. iii. 1801.), declaring it to be doubtful "whether this operation, or that of amputating the limb *at the upper part of the thigh* will fall to be preferred." It only remains for us now to point out some of the principal rules to be observed, in cases where this operation is indicated.

No skill or precaution can avert the ill consequences which may ensue from a disposition in the trunk of an artery to form aneurisms: the objection, therefore, against tying the artery in this case, is not greater than it would be against amputating the limb "at its upper part." If an aneurism have formed spontaneously, the chance of recovery is not equal to that in which the disease arose from an accidental cause; but still, we conceive, the spontaneity of the complaint is not alone a sufficient objection against the method we are recommending. Suppose, then, we have determined on performing the operation; it is first necessary to reduce the quantum of blood in the vascular system, if the patient be plethoric and young. He should also be prepared, by giving him a few doses of laxative medicine, and by a previous course of abstemiousness, especially if there be any tendency to an inflammatory diathesis. All things being in readiness for the operation, let a tourniquet be placed on the limb; or let an assistant compress the artery in the best possible manner, where a tourniquet cannot be applied with ad-

vantage. Make your first incision through the skin and adipose substance; dissect steadily and cautiously down to the trunk of the vessel you are seeking for; clear away with the scalpel, or with your finger, all the cellular membrane which lies loosely in your way; open the fascial covering peculiar to the artery; then separate the vein and nerve accompanying it, without unnecessarily tearing the vessels from their surrounding attachments; and pass a moderate sized common ligature around the artery, with a sufficient degree of tightness to stop the circulation entirely.

These are the ordinary steps of this operation. But it is probably the safest way to make a second ligature, about an inch below the former, and then to cut between them, as was practised by the ancients, so that the divided extremities of the artery may retire into the adjacent muscular substance. This method has been approved by some of our best surgeons, and seemed to lessen the danger of a secondary hæmorrhage. In addition, however, to this security, a new mode of fastening the ligatures has been proposed and practised at Guy's hospital (see Med. & Phys. Journal for July, 1802.) "An eyed probe, armed with a double ligature, having a curved needle at each end, was conveyed under the femoral artery, and the probe cut away. The ligature nearest the groin was first tied; the other was separated an inch from the first, and tied also; then the needles were passed through the coats of the artery close to each ligature, and between them; the thread they carried was tied into the knot of the ligature which had been already secured around the vessel; and thus a barrier was formed in the artery, beyond which the ligature could not pass. The wound was united by the first intention, except where the ligature projected: one of the threads separated on the 14th, the other on the 15th day." This mode of securing the ligatures was found to be so effectual, that Mr. Astley Cooper was unable, in an experiment made on a dead subject, to remove the thread from its situation, even by injecting water into the artery with all his force. The suggestion was originally given to him by Mr. Cline, jun. and was put in practice in consequence of two cases having occurred, one to Mr. Cline (the father), and one to Mr. Cooper, in which the ligature slipped off the divided extremity of the blood vessel, after an operation for aneurism.

We have directed the artery to be tied alone; and not to be wantonly *detached* from the circumjacent cellular membrane, which gives support to the *vasa vasorum* nourishing the artery. For the same reason, we highly disapprove of all compresses, pads or instruments proposed to be laid in contact with the vessel; as these, we are of opinion, contribute to produce inflammation and ulceration of the artery, with all their dreadful consequences. The wound should be closed with adhesive plasters as accurately as possible, the ligatures hanging out, and a soft roller then passed over the limb for its further support. By this simple method, we have found the operation extremely successful; and there is but little comparative hazard of a secondary bleeding. Nay, it is even certain that ligatures may be made with complete success upon the great artery of the thigh, above Poupart's ligament; and of the arm above the axilla. (See the cases published by Mr. Keate, Mr. John Bell, and Mr. Abernethy.)

Other methods have been recommended by ingenious men in cases of aneurism; such as that of Mr. Lambert (Med. Obs. and Inq. vol. ii. p. 360.) who proposes to stitch the artery by means of the hare-lip suture, a plan which has been once imitated, without success, by Mr. John Bell; and likewise a contrivance of Mr. Deschamps (La Médecine éclairée, tome iii. p. 67.), for compressing the arterial tube,

tube, without surrounding it with a ligature. But, in our opinion, these methods promise to be less useful than they seem to be ingenious, and have not been generally approved by medical practitioners.

We have mentioned the *mixed* aneurism as a distinct species of this disease, because it is noticed as such by respectable authors. Dr. Monro, senior, we believe, was the first who described it (Edinb. Med. Essays and Observ. vol. ii. xvi.), and afterwards Dr. Wm. Hunter (Med. Obs. and Inquiries, vol. i. xxvi.); but the distinction is not well established, and is of very little practical importance. A much more valuable distinction has been introduced by Dr. Hunter, between common aneurisms and those which sometimes arise from bleeding: the latter has been denominated *VARICOSE aneurism*, or with more propriety the *aneurismal VARIX*; and it arises from an artery having been wounded through a vein, so that a communication or anastomosis is afterwards kept up between these two vessels, which closely unite by a lateral adhesion. This varicose tumour is not near so dangerous as the true or the spurious aneurism; for the veins alone become much dilated, and it can scarcely ever be necessary to have recourse to the ligature. Since Dr. Hunter published his account of this disorder, its true nature has been ascertained by the observations of various practitioners.

The aneurismal varix was first described by that anatomist with some degree of diffidence; but in a subsequent memoir, Dr. Hunter communicated to the world a further history of this curious disease, in the following terms:

"If ever this case happens, we are to suppose, that in the operation of bleeding the lancet is plunged into the artery through both sides of the vein, and that there will be three wounds made in these vessels, *viz.* two in the vein and one in the artery; and these will be nearly opposite to one another, and to the wound in the skin. This is what all surgeons know has often happened in bleeding; and the injury done the artery is commonly known by the jerking impetuosity of the stream whilst it flows from the vein, and by the difficulty of stopping it when a sufficient quantity of it is drawn.

"In the next place we must suppose, that the wound of the skin, and of the adjacent or upper side of the vein, heal up as usual; but that the wound of the artery, and of the adjacent or underside of the vein, remain open (as the wound of the artery does in a spurious aneurism), and by that means the blood is thrown from the trunk of the artery directly into the trunk of the vein. Extraordinary as this supposition may appear, in reality it differs from the common spurious aneurism in one circumstance only, *viz.* the wound remaining open in the side of the vein as well as in the side of the artery. But this one circumstance will occasion a great deal of difference in the symptoms, in the tendency of the complaint, and in the proper method of treating it; upon which account the knowledge of such a case will be of importance in surgery.

"It will differ in its symptoms from the common spurious aneurism principally thus. The vein will be dilated or become varicose, and it will have a pulsatile jarring motion, on account of the stream from the artery. It will make a hissing noise, which will be found to correspond with the pulse, for the same reason. The blood of the tumour will be altogether, or almost entirely fluid, because kept in constant motion. The artery, I apprehend, will become larger in the arm, and smaller at the wrist, than it was in the natural state; which will be found out by comparing the size and the pulse of the artery in both arms at these different places: the reason of which I shall speak of hereafter. And the effects of ligatures and of pressure upon the vessels, above the elbow and below it, will be what every person may rea-

dily conceive, who understands any thing of the nature of arteries and veins in the living body.

"The natural tendency of such a complaint will be very different from that of the spurious aneurism. The one is growing worse every hour, because of the resistance to the arterial blood; and if not remedied by surgery must at last burst. The other in a short time comes to a nearly permanent state, and, if not disturbed, produces no mischief, because there is no considerable resistance to the blood that is forced out of the artery.

"The proper treatment must therefore be very different in these two cases; the spurious aneurism requiring surgical assistance as much perhaps as any disease whatever; whereas, in the other case, I presume it will be best to do nothing.

"If such cases do happen, they will, no doubt, be found to differ among themselves in many little circumstances, and particularly in the shape, &c. of the tumefied parts. Thus the dilatation of the veins may be in one only, or in several, and may extend lower or higher in one case than in another, &c. according to the manner of branching, and to the state of the *valves* in different arms: and the dilatation of the veins may also vary on account of the size of the artery that is wounded, and of the size of the orifice in the artery, and in the vein.

"Another difference in such cases will arise from the different manner in which the orifice of the artery may be united or continued with the orifice of the vein. In one case, the trunk of the vein may keep close to the trunk of the artery, and the very thin *stratum* of cellular membrane between them, may, by means of a little inflammation, and coagulation of the blood among its filaments, as it were, solder the two orifices of these vessels together, so that there shall be nothing like a canal going from one to the other; and then the whole tumefaction will be more regular and more evidently a dilatation of the veins only. In other instances the blood that rushes from the wounded artery, meeting with some difficulty of admission and passage through the vein, may dilate the cellular membrane between the artery and vein, into a bag, as in a common spurious aneurism, and so make a sort of canal between these two vessels. The trunk of the vein will then be removed to some distance from the trunk of the artery, and the bag will be situated chiefly upon the underside of the vein. The bag may put on an irregular form, from the cellular membrane being more loose and yielding at one place than at another, and from being unequally bound down by the *fascia* of the *biceps* muscle. And if the bag be very large, especially if it be of an irregular figure, no doubt coagulations of blood may be formed, as in the common spurious aneurism."

As no surgical operation is required in this case, or but very rarely indeed, we need not dwell further on the subject of aneurismal *VARIX*. The disease has, in different instances, continued during the space of twenty or thirty years without getting worse, or demanding especial attention. See *VARIX* and *VARICOCELE*.

ANEWOLONDANE, in *Geography*, a small island of the Indian sea, near the coast of Ceylon.

ANFANT, a town of Persia, 30 miles north-west of Zareng.

ANFELDTHYDE, or *ANFALTHYLE*, in *Law*, a simple accusation; for the Saxons had two sorts of accusation, *viz.* *simplex* and *triplex*. That was called *single*, when the oath of the criminal, and of two more, were sufficient to discharge him: but his own oath, and the oaths of five more, were required to free him a *triplice accusatione*.

ANFOSSI, *Pasquale*, of Naples, in *Biography*. See *PASQUALE ANFOSSI*.

ANGADD, a barren desert of Africa, in the kingdom of Algiers, 28 leagues long, and 18 wide, formerly the west part of the province of Tlemcen, in the road to Fez: it contains a few villages inhabited by Arabs, the chief of which were Guagida, Tenzegzet, and Zecil.

ANGALA-DIAN, in *Natural History*, a name given by Buffon to a species of certhia, called lotenia by Gmelin. See CERTHIA LOTENIA.

ANGAMALA, a town of the East Indies, in Malabar, on the river Aicota.

ANGARA, a river of Russia, which rises in the lake Baikal, and runs into the Enussey, not far from Enusfeilk.

ANGARAEZ, a province of South America, in the empire of Peru, subject to the archbishop of Lima, 20 leagues north-west by west of the city of Guamanga. It abounds in all kinds of grain and fruits, besides vast droves of cattle both for labour and sustenance.

ANGARI, or ANGARI, in *Antiquity*, denote public couriers, appointed for the carrying of messages.

Αγγαρι is derived from a word, which, in the Persian language, signifies a service rendered by compulsion. Hence the Greeks borrowed their verb αγγαριων, *compellere*, or *co-gere*, and the Latins *angariare*.

The ancient Persians, Budæus observes, had their αγγαριωνδρομηται, which was a set of couriers on horseback, posted at certain stages or distances, always in readiness to receive the dispatches from one, and forward them to another with wonderful celerity, answering to what the moderns call posts, q. d. *postii*, as being posted at certain places or stages. This invention of couriers is ascribed to Cyrus. As the Persian empire, after its last conquests, was of a vast extent, and Cyrus required that all his governors of provinces, and the chief commanders of his troops should write to him, and give an exact account of every thing that passed in their several districts or armies: in order to render that correspondence the more sure and expeditious, and to put himself into a condition of receiving speedy intelligence of all occurrences and affairs, and of sending his orders with expedition, he caused post-houses to be built, and messengers to be appointed in every province. Having computed how far a good horse, with an active rider, could go in a day, without injury, he had stables built at equal distances from each other, and furnished them with horses, and grooms to take care of them. At each of these places he appointed likewise a post-master to receive the packets from the couriers as they arrived, and to give them to others, and to take the horses that performed their respective stages, and to find fresh ones. Thus the courier went continually night and day with extraordinary speed; nor did either rain or snow, heat or cold, or any inclemency of the season interrupt his progress. Herodotus (lib. viii. c. 18.) speaks of the same sort of couriers in the reign of Xerxes. The superintendency of the posts became a considerable employment; Darius, the last king of the ancient Persians, enjoyed it before he came to the crown. Xenophon takes notice, that this establishment subsisted in his time; and this perfectly agrees with what is related in the book of Esther concerning the edict published by Ahasuerus in favour of the Jews; which edict was carried through that vast empire with a rapidity that would have been impossible without these posts erected by Cyrus. See POST.

The *angari* were also called by the Persians *astande*; by the Greeks *παιροδρομοι*, on account of the long journies they made in one day, which, according to Suidas, amounted not to less than 1500 stadia.

ANGARI is also applied figuratively to porters, and others employed in laborious offices, as bearing burdens.

ANGARI, in *Geography*, a small river of Abyssinia, which gives name to a district in the province of Siri, not far from HAUZA. It rises in a plain near Montefegla, and joins the Bowiba.

ANGARIA is used, in a general sense, for any burden, or incumbrance, forcibly imposed on persons.

Some define *angaria* by personal services, which a party is compelled to discharge in his own person, or to serve at his own expence; or such services imposed on lands whereby a person is obliged to work for another, either with his horse, his ass, or the like.

ANGARIA, in the *Civil Law*, denotes a duty required of the subjects to furnish out horses and carriages for conveying of corn for the soldiers, and such things as belonged to the *fiscus*.

This duty goes by the name of *curfus publicus*, *angaria*, *parangaria*, *translatio*, and *avectio*. The horses used in this service are particularly called *paraveredi*, and *equi cursuales*.

Angariae are generally understood as exclusive of ships; though, on some occasions, these were pressed into the service for transporting provisions and the like.

Angariae differ from *parangariae*, in this, that the former are confined to public or main roads, the latter to oblique or cross roads.

In the Book of Feuds, the performance of *angariae* and *parangariae* are ranked in the number of royal services. Lib. ii. tit. 56.

The clergy were exempted from this service by two laws of Constantius; but he revoked this privilege in 360. The privilege was restored in 382, and confirmed by Honorius in 412; but was taken away again in 440. Bingham. Orig. Ecclesiae, lib. vi. c. 3. § 10.

ANGARIA, is also used, in *Ancient Military Writers*, for a guard of soldiers posted in any place for the security of it. Veget. lib. i. c. 3. lib. ii. c. 19. lib. iii. c. 8.

ANGARKA, in *Geography*, a river of Siberia, in the country of the Tschuktikes, which falls into the great river of Anuy.

ANGARO PORTO lies on the coast of Brasil, and is one of those good harbours and bays for which the coast between Point Negro, near Rio Grande, and Point Lucena, near Dou or Dulu, otherwise called Trieste-watering river, is famous.

ANGAXOS *Island*, or ANGOXAS, lies on the eastern coast of Africa, in S. lat. 16° 30', E. long. 38° 35'.

ANGAZYA, or ANGAZIZA, one of the Comorro islands, lying between the north end of Madagascar and the coast of Zanzibar. It is inhabited by Moors, who trade with various parts of the continent, and all the islands to the eastward, in cattle, fruits, and the other commodities of the island, exchanging them for calicoes, and other cotton cloths, for their own wear. Their bread is chiefly made of the kernel of the cocoa-nut, boiled or broiled, and spread over with honey; their drink is palm wine, or a juice extracted from the sugar-cane, and suffered to ferment, or the milk of the cocoa-nut. They never allow their women to be seen by strangers without permission from the sultan. Their houses are built of stone and lime, made of calcined oyster-shells, with which the walls and roofs are elegantly plastered, and the roofs and windows are covered with palm leaves, serving as a defence against the rain and the sun. The island is under the government of ten lords, the constitution being an aristocracy. S. lat. 17°. E. long. 58° 10'.

ANGE, ST. or ANGELO *Cape*, lies in the Morea, and has its south-east point projecting considerably into the sea. N. lat. 36° 27'. E. long. 33° 33'.

ANGE,

ANGE, DE ST. JOSEPH, his true name was La Brosse, in *Biography*, a Carmelite monk, born at Toulouse, was sent to Ispahan as a missionary. After residing several years in Persia, he returned to Europe, and was made provincial of his order in Languedoc. Having acquired a knowledge of the Persian language, he published, in 1681, *Pharmacopœia Persica, ea idiomatica Persica in Latinum translata*, 8vo. and, in 1684, *Gazophylacium Linguae Persarum, a Treasury of the Persian Language*, fol. at Amsterdam. This work is in great esteem, containing, besides an explanation of Persian words and terms, many entertaining historical anecdotes and observations.

ANGLIOGRAPHIA, compounded of *αγγειον*, *vessel*, and *γραφω*, *scribo*, *I describe*; the knowledge or description of all kinds of ancient instruments, vessels, and utensils, both domestic, military, and nautical.

Angiography also includes the consideration of the WEIGHTS, MEASURES, &c. used by the several nations.

ANGIOLOGY, in *Anatomy*, derived from *αγγειον*, *a vessel*, and *λογος*, *a discourse*, the history or description of the vessels of the body, which are those concerned in the circulation of the blood, and in absorption. See ARTERIES, VEINS, and ABSORBING VESSELS. The essential structure of vessels is the same in all. They are composed of thin skins or membranes, the inner part of which has a highly polished and secreting surface, allowing the contained fluids to glide along it without impediment, whilst the outer surface is rough and cellular, by which the vessel is connected to the surrounding parts. This essential part of the vessel is strong and unyielding, preventing it from rupture, and preserving it of an unvarying circular figure.

ANGIOTOMY, formed of *αγγειον*, *vessel*, and *τεμνω*, *feco*, *I cut*, in *Surgery*, is used by some to denote an artificial section of the vessels, as in bleeding.

In this sense angiotomy may be divided into PHLEBOTOMY and ARTERIOTOMY.

ANGEL, a spiritual intelligent substance, the first in rank and dignity among created beings.

The word *angel*, *αγγελος*, is not properly a denomination of nature but of office; denoting as much as *nuncius*, *messenger*, a person employed to carry one's orders, or declare his will. Thus it is St. Paul represents angels, Heb. i. 14. where he calls them *ministering spirits*; and yet custom has prevailed so much, that angel is now commonly taken for the denomination of a particular order of spiritual beings, of great understanding and power; superior to the souls or spirits of men. Some of these are spoken of in Scripture in such a manner, as plainly to signify that they are real beings, of a spiritual nature, of high power, perfection, dignity, and happiness. Others of them are distinguished as not having kept their first station (Jude vi.). These are represented as evil spirits, enemies of God, and intent on mischief. The devil as the head of them, and those as his angels, are represented as the rulers of the darkness of this world, or spiritual wickednesses or wicked spirits, *τα πνευματικα της πονηριας εν τοις επαιθετοις*, (Ephes. vi. 12. Locke's Paraphr.) which may not be unfitly rendered, the spiritual managers of opposition to the kingdom of God.

The existence of angels is supposed in all religions, though it is incapable of being proved *a priori*. Indeed, the ancient Sadducees are represented as denying all spirits; and yet the Samaritans and Caraites, who are reputed Sadducees, openly allow them: witness Abufaid, the author of an Arabic version of the Pentateuch; and Aaron, a Caraitic Jew, in his comment on the Pentateuch; both extant in manuscript in the king of France's library.

In the Alcoran we find frequent mention of angels. The

Mussulmen believe them of different orders or degrees, and to be destined for different employments both in heaven and on earth. They attribute exceedingly great power to the angel Gabriel, as to be able to descend in the space of an hour from heaven to earth; to overturn a mountain with a single feather of his wing, &c. The angel Arael, they suppose, is appointed to take the souls of such as die; and another angel, named Esraphil, they say, stands with a trumpet ready in his mouth to proclaim the day of judgment.

The heathen philosophers and poets were also agreed as to the existence of intelligent beings, superior to man; as is shewn by St. Cyprian in his treatise of the vanity of idols, from the testimonies of Plato, Socrates, Trismegistus, &c. They were acknowledged under different appellations; the Greeks calling them *dæmons*, and the Romans *genii*, or *lares*; and Epicurus seems to have been the only one among the old philosophers who absolutely rejected them.

Authors are not so unanimous about the nature as about the existence of angels. Clemens Alexandrinus believed they had bodies; which was also the opinion of Origen, Cæsarius, Tertullian, and several others. Athanasius, St. Basil, St. Gregory Nicene, St. Cyril, St. Chrysostom, &c. hold them to be mere spirits. It has been the more current opinion, especially in later times, that they are substances entirely spiritual, that can, at any time, assume bodies, and appear in human or other shapes.

Ecclesiastical writers make an HIERARCHY of nine orders of angels. Others have distributed angels into nine orders, according to the names by which they are called in Scripture, and reduced these orders into three hierarchies; to the first of which belong seraphim, cherubim, and thrones; to the second, dominions, virtues, and powers; and to the third, principalities, archangels, and angels. The Jews reckon four orders or companies of angels, each headed by an archangel; the first order being that of Michael, the second of Gabriel, the third of Uriel, and the fourth of Raphael. But though the Jews believe them to be but four, yet it seems, from some intimation in Scripture, that there were seven. Rev. iv. v. viii. 2.

By the ancient councils men are forbidden to frame or give particular names to angels; the only names owned by the church are Michael, Gabriel, and Raphael, to which is sometimes added Uriel. Du-Cange.

Before the Babylonish captivity, the Jews did not know the name of any angel; at least we find none mentioned in the books written before this event. Calmet. *Dist. Bib.* Authors are divided as to the time of the creation of angels; some will have it to have been before the creation of our world, or even before all ages, that is from eternity; this is Origen's opinion, who, according to Leontius, held that all spirits, angels, devils, and even human souls, were from eternity.

Others hold angels to have been created before the world, yet not from eternity; of which opinion are Nazianzen, and others. Others again maintain that they were created at the same time with our world, but on what day is disputed. Theodoret and Epiphanius fix their date from the first day.

Good angels are called *angels of light*, and *guardian angels*; and those on the contrary, who are the *devil's* ministers, *angels of darkness*, and *fallen angels*.

That angels are divine messengers employed on particular occasions for executing the divine will, has been a very prevalent opinion; but what is their sphere of action, and how far it extends, it is not easy to determine. Amongst the Jews it seems to have been a firm belief and tradition, that every man had a tutelary or guardian angel from his

birth; and our Saviour seems to refer to this opinion in Mat. h. xv. 10. The heathens were also of the same persuasion, and thought it a crime to neglect the admonitions of so divine a guide. Socrates publicly confessed himself to be under the direction of *Sufes*, an angel or demon, as did also Plotinus and others; on the tutelar genius of each person, they believed his happiness and good fortune depended. The ancient Persians so firmly believed the ministry of angels, and their superintendance over human affairs, that they gave their names to their months, and the day of their months, and assigned them distinct offices and provinces; and it is from them the Jews acknowledge that they have received the names of the months and angels, which they brought with them when they returned from the Babylonish captivity; after which we find they also assigned charges to the angels, and, in particular, the patronage of empires and nations; Michael being the prince of the Jews, as Raphael is supposed to have been of the Persians. Hyde *Reb. V. l. Part. c. 19 and 20.*

As to the fallen angels, it is not known at what time and for what offence they incurred the displeasure of the Almighty, and plunged themselves into an abyss of wickedness and misery. The time in which this event took place is generally imagined to have preceded the creation of the world; and some have accounted for it by the supposition, that the angels, being informed of God's purpose to create man after his own image, and to dignify his nature by Christ assuming it, and thinking their glory to be thus eclipsed, envied the happiness of man, and so revolted; and with this opinion that of the Mahometans has some affinity, who are taught that the devil, who was once one of those angels who are nearest to God's presence, and named Azazel, forfeited Paradise for refusing to worship or pay homage to Adam at the command of God. But whatever was the occasion, or the mode by which it was manifested, pride seems to have been the leading sin of the angels, and it ultimately terminated in rebellion and apostacy. Of these fallen angels there is supposed to have been a great number; and it is apprehended that there was some kind of gradation or subordination among them; one being considered as their prince, and called by several names, Belzebub, Satan, or Sannach, by the Jews; Ahariman by the Persians; and Eblis by the Mahometans.

The Scripture uses the term angel to denote other beings, or agents, besides those spirits that occupy a rank and dignity superior to man. Accordingly it has been a concurrent opinion of the Hebrew and Samaritan schools, that the word angel does not only mean a spirit, but sometimes also all sorts of powers or instruments which God is pleased to use, and by means of which he acts. So that the elements of the world, fire, air, winds, and storms, in particular vision, and in the language of Scripture, are called "angels of the Lord, which do his will." In this sense it is to be understood the expression of the Psalmist (Ps. civ. 4.), who maketh his angels spirits, his ministers a flame of fire," *i. e.* who maketh winds his angels, and lightnings his messengers. Moreover the Scriptures call a dream, a vision, a voice from heaven, a plague, a burning wind, "Angels of God;" and whatsoever God is pleased to do by them is said to be done by an "Angel of the Lord." For whatever declares God's will, or performs his pleasure, is "his angel." In the New Testament we find mention of an angel, by which God punished the blasphemous pride of Herod. Acts, xii. 23. We find another mention of an angel moving at certain seasons the pool of Bethesda. John, v. 4. In the Old Testament we have also mention of an angel destroying the numerous army of Sennacherib. 2 Kings, xix. 35. The punishment

inflicted on David for his sin in numbering the people, is described (1 Chron. xxi. 15.), by God's sending an angel to Jerusalem to destroy it, &c. Daniel also ascribes his deliverance in the lion's den to an angel. Dan. vi. 22. By the angel, in Acts, xii. 23. interpreters have understood the extraordinary distemper which proved fatal to him. In the case of David the persilience insisted upon Israel was the angel of God. See 2 Sam. xxiv. 15, 16. Thus the descent of the angel at the pool of Bethesda (John, v. 4.) may signify the extraordinary motion of the waters, which was the sign of the miraculous virtue that attended them; although some interpreters conceive that the angel, in this case, was an officer or messenger deputed from the temple to stir the pool, and that the warm entrails cast into it communicated the healing virtue to the waters. The angel of the Lord which went out and smote the camp of the Assyrians, seems to be explained by the promise of the prophet Isaiah. 2 Kings, xii. 6, 7. In the account of Daniel's preservation, "God sent his angel," seems immediately explained in this sense; "and hath shut the lions' mouths, that they have not hurt me." Dan. vi. 22. The effect was stopping the mouths of the lions; and in what way soever this was produced, under God's special direction and influence it may be said to be done by his angel, though a separate spirit had no concern at all in it. Thus also the Schechinah, or material symbol of glory, and the oracle from thence, may in this sense be called the angel of the Lord, and it is so called in Scripture; and though the true God himself was the only spirit, or intelligent agent, who acted and manifested himself on the occasion.

According to the opinion of those who maintain the fall of angels, they are represented as being cast out of heaven, abandoned to iniquity, and making it their business to seduce mankind, and taking pleasure in doing them all kinds of injury. Others, however, among whom we may reckon Dr. Pricketley, consider the fall of angels as very problematical; and though it cannot be said that the thing is absolutely impossible, yet they conceive that it seems, upon the face of it, to be very improbable. Besides, if such exalted beings as these are supposed to have sinned, and to have thereby become obnoxious to the divine displeasure, what end, they ask, could it answer to them to be so assiduous in seducing mankind? Indeed, upon the supposition that their existence and torments were to be everlasting, it may be conceived to give them a kind of gloomy satisfaction to have "brethren in iniquity," for their companions in their sufferings. Pricketley's Institutes, vol. ii. p. 433. Bekker, of Amsterdam, maintains, that the word translated "angels" in Jude, v. 6. and also 2 Pet. ii. 4. should be "messengers;" adding, that here is no reference to fallen angels, but to the history of the persons sent out by Moses to spy out, and make report of the land of Canaan; and to their false and wicked account, so as to discourage their countrymen from obeying the divine command.

ANGEL is more particularly applied to a person who sustained any particular character or commission. Accordingly there was an officer of the Synagogue, among the Jews, says Prideaux (Conn. vol. ii. 513.), who officiated in offering up the public prayers to God for the whole congregation, and who, as the mouth of the congregation, delegated as its representative, messenger, or angel, speaks to God in prayer for them, was therefore in the Hebrew language called "Sheliach Zibbor;" that is, "the angel of the church." He was also, according to Dr. Lightfoot, called קהן, or *episcopus*, because he overlooked the reader of the law.

In the Apocalypse, the denomination *angel* is also given to

to the pastors of several churches: who are called the *angel* of the church of Ephesus, the *angel* of the church of Smyrna, &c. This name, according to Prideaux (*ubi supra*), was borrowed from the Synagogue. For as the Shebachi Zibbor, in the Jewish Synagogue, was the prime minister to offer up the prayers of the people to God, he was also the bishop who presided over the church, the prime minister to offer up the prayers of the people to God in the church of Christ. Du-Cange adds, that the same name was anciently given to certain popes and bishops, by reason of their singular sanctity, &c.

ANGEL is also used, in *Commerce*, for an ancient gold coin struck in England; so called, from the figure of an angel impressed upon it. It weighed 4 pennyweights, and was $23\frac{1}{2}$ carats fine.

Its value in 3 Hen. VI. was 6s. 8d., in 1 Hen. VIII. 7s. 6d., in 34 Hen. VIII. 8s. in 6 Edw. VI. it was 10s., in 2 Eliz. it was 10s. and in 23 Eliz. the same. And the *half angel*, or, as it was sometimes called, the *angelot*, was the moiety of this; and the *quarter angelot* proportionable.

The angel now subsists no otherwise than as a money of account, denoting 10s.

The French have also had their *angels*, *demi-angels*, and *angelots*; but they are now disused.

ANGEL-fish, in *Ichthyology*, the English name of the Squallus Squatina of Linnæus; the French call it *ange*. See SQUATINA.

ANGEL, or ANGLÉS Road, in *Geography*, lies on the starboard side of Milford Haven, within the rocks, in the mid-channel of the haven to the east.

ANGELA, or ONGUELA, a town of Africa, in the kingdom of Barca, situate towards Egypt. Its territory, though mostly desert, hath good water, and produces dates.

ANGELIC, or ANGELICAL, something belonging to, or that partakes of the nature of, *angels*.

We have an *angelical* life, &c. St. Thomas is styled the *Angelical Doctor*. The *angelical* salutation is called by the Romanists *Ave Maria*; sometimes simply *angelus*.

ANGELIC garment, ANGELICA vestis, among our *Ancestors*, was a monkish garment which laymen put on a little before their death, that they might have the benefit of the prayers of the monks.

It was from them called *angelical*, because they were called *angeli*, who by these prayers *anime salutis succurrebant*. Hence, where we read the phrase *monachus ad succurrendum* in our old books, it must be understood of one who had put on the habit when he was at the point of death.

ANGELICA, in *Botany*, a genus of the *pentandria digynia* class and order, and of the natural order of *umbellata*, or *umbellifera*. Its characters are, that the *calyx* has an universal umbel, manifold, and roundish, and partial, when flowering, exactly globular; the universal involucre three or five-leaved, small; partial, eight-leaved, and small; proper, perianth five-toothed, scarcely observable; the *corolla* universal uniform, floscules all fertile; partial, petals five-equal, lanceolate, flattish, incurved, and caducous; the *stamina* have simple filaments, larger than the corolla, and simple anthers: the pistilium has a germ, inferior styles reflex, and stigmas obtuse, no *pericarpium*; fruit roundish, angular, solid, and bipartite; *seeds* two, ovate, flat on one side, and margined; convex on the other, scored with three lines. Martyn enumerates six, and Gmelin seven species. 1. *A. archangelica*, ang. sativa of Miller, garden angelica, with the odd leaflet of the leaves lobed. The root is thick, fleshy, and resinous; the stalk is erect, about the height of five feet, ramous,

hollow, round, smooth, and furrowed; the leaves are ternate and pinnated, leaflets are ovate-lanceolate, acute, gashed, and acutely serrated, smooth, subdecurent, with the odd one tripartite; the petiole at the base is membranaceous, nervous, very much dilated and ventricose; the umbels globose and multiradiate; the umbellules dense and hemispherical; the involucre consisting of a few linear deciduous leaflets; the involucrella suboctophyllous, linear-lanceolate and short; the calyx small, the petals ovate, inflex, and whitish-green; the fruit elliptic-roundish, compressed, and acutely ribbed. It is a native of the northern parts of Europe, and was cultivated here in 1568. With us it is found at Broadmoore, about seven miles north-west from Birmingham, is biennial, and flowers in September. In a cultivated state, says Withering, this is supposed to be the garden angelica, which is used in some distilled waters, and candied by the confectioners.

Mr. Miller makes a distinct species of the angelica, which grows naturally in Hungary, and some parts of Germany; about twice the size of the common sort, with much larger leaves, more deeply sawed on the edges, with the umbels much larger, and the flowers yellow. 2. *A. sylvestris*, water A. or wild A. with leaflets equal, ovate-lanceolate and serrate; the stem erect, about four feet high, round, smooth, and sosohe; the leaves bipinnate, and subglabrous, with leaflets ovate, distinct, acutely serrated, and serratures mucronate; the umbels hemispheric and multiradiate; the umbellules dense; the involucre subdiphyllous, and very narrow, and sometimes none; the involucre polyphyllous and setaceous; the calyx scarce visible; the petals ovate, inflex, and fleshy, and the fruit small: it is perennial, found in moist woods and hedges, and by the sides of rivers, and flowers in July. 3. *A. verticillaris*, with leaves very much divaricate, leaflets ovate and serrate, and stem verticilled, with peduncles; a native of Italy and Silesia, introduced in 1774 by M. Richard. 4. *A. atropurpurea*, purple A. with the outermost pair of leaves coadjoined, and the terminal leaf petioled; a native of North America, and cultivated by Mr. Miller in 1759. 5. *A. lucida*, shining A. with leaflets equal, ovate, and gash-serrate; a native of Canada, flowers in June, and the seeds ripen in August. 6. *A. Razulii*, panax alpina, &c. of Boec. with leaves bipinnate, leaflets lanceolate, serrate, and decurrent; a native of the Apennines and Piedmontese mountains, found on the former by M. Raoul, an apothecary at Perpignan, whence its trivial name. 7. *A. lobata*, with the inferior leaves biterminate; the leaflets petioled, ovate, and serrate; the superior ternate. 8. *A. integrifolia*, with the leaflets entire and petioled. Martyn's Miller. Gmelin. Willdenow. Smith. Flor. Brit.

Culture. All the sorts may be increased by seeds. The common angelica delights in a moist soil, in which the seeds should be sown soon after they are ripe; and when the plants are about six inches high, they should be transplanted at a large distance, about three feet asunder, on the sides of ditches or pools of water. In the second year they will flower, and their stems may be cut down in May, and heads will be put out from the sides of the roots, and thus they may be continued for three or four years; but if they had been permitted to seed, their roots would perish soon after. If they are permitted to seed, they last but two years.

Dietetic and medical uses. The stalks of garden angelica were formerly blanched, and eaten as celery. The young shoots are in great esteem among the Laplanders. In Norway bread is sometimes made of the roots. The gardeners near London, who have ditches of water in their gardens, propagate great quantities of this plant, which they sell to the confectioners, who make a sweet-meat with the tender

stalks cut in May. Bohemia and Spain are supposed to produce the best: the college of London formerly directed the roots brought from Spain only to be kept in the shops. Linnæus, however, assures us, that the plant proves most vigorous on its native northern mountains, and gives a decided preference to the root dug here either early in the Spring, or late in the Autumn. The roots of angelica are one of the principal aromatics of European growth, though not much regarded in the present practice. They have a fragrant agreeable smell, and a bitterish pungent taste; on being chewed they are first sweetish, afterwards acrid, and leave a glowing heat in the mouth and fauces, which continues for some time. The stalk, leaves, and seeds appear to possess the same qualities, though in an inferior degree. Dr. Lewis says, that on wounding the fresh root early in the Spring, it yields, from the inner part of the bark, an unctuous, yellowish, odorous juice, which, gently exsiccated, retains its fragrance, and proves an elegant, aromatic, gummy resin. Rectified spirit extracts the whole of the virtues of the root; water but very little; and, in distillation with the latter, a small portion of very pungent essential oil may be obtained. The Laplanders extol the utility of angelica, not only as food but as medicine. For coughs, hoarseness, and other disorders of the breast, they eat the stalks roasted in hot ashes; they also boil the tender flowers in dairy milk till it attains the consistency of an extract; and they use this to promote perspiration in catarrhal fevers, and to strengthen the stomach in diarrhœa, &c. According to the explanations of Sir John Pringle, the herb is antiseptic, but the efficacy of the leaves is soon lost by drying them. The seeds also, which come nearest to the roots, can scarce be kept till the Spring after they are gathered, without the loss of their vegetative power, as well as a diminution of their medicinal virtue. These are the only part of the plant which is ordered by the London College, and that only in compound spirit of aniseed. The aromatic quality of the root is more considerable than that of any other part; but as many other simples surpass angelica in aromatic and carminative powers, it is seldom employed in the present practice. All the parts of the wild angelica are similar in quality to those of the former species, but rather weaker, and the former may be more easily procured. Cows, goats, and swine eat it, but horses refuse it. Lewis. Murray. Woodville.

ANGELICA. See ÆGOPodium, CHÆROPHYLLUM, CICTUTA, LASERPITULUM, SELINUM, and SMYRNIUM.

ANGELICA *rue*. See ARABIA.

ANGELICA *water* is one of the compound waters of the shops; thus called from the *angelica* root, which is the chief ingredient in the composition, and the most active part of that plant. Neumann.

ANGELICA *grana*, a technical name given to Anderson's Scots pills.

ANGELICA was also a celebrated dance among the ancient Greeks, performed at their feasts.

It was thus called, from *αγγελος*, *nuncius*, *messenger*, because, as Pollux assures us, the dancers were dressed in the habit of messengers.

ANGELICI, an ancient order of knights, instituted in 1191, by Isaacus Angelus Flavius Comnenus, emperor of Constantinople.

They were divided into three classes, but all under the direction of one grand master. The first were called *torquati*, from a collar which they wore, and these were fifty in number. The second were called the *knights of justice*, and were ecclesiastics. And the third were called *knights fervitors*.

Justiniani will have this order to have been instituted in

the year 313, by Constantine; and supposes the occasion thereof to have been the appearance of an angel to that emperor, with the sign of a cross, and these words, *In hoc signo vinces*; but that there was such a thing as any military order in those days, is a mere fable.

ANGELICI, in *Ecclesiastical History*, were also a sect of ancient Christians. St. Augustin supposes them thus called from their yielding an extravagant worship to angels, and such as tended to IDOLATRY; though Epiphanius derives the name from their holding, that the world was created by angels.

ANGELINA *zanoni acosta*, in *Botany*. This is a tree of vast size, sometimes above sixteen feet thick, growing on rocky and sandy places in Malabar, in the East Indies. It bears ripe fruit in December, and continues bearing for a whole century.

The dried leaves heated, are said to alleviate pains and stiffness in the joints, and disperse an intumescence of the *testes* occasioned by a contusion, or any external violence; as also an *hydrocele*, or *pneumatocœle*. It is efficacious likewise in some venereal complaints, and hæmorrhoidal fluxes.

ANGELIO, PETER, in *Biography*, a modern Latin poet, was born in 1517, at Barga, a castle of Tuscany, and hence usually called Bargæus. Having made a great proficiency in Latin and Greek at the early age of ten years, he was prevented from pursuing his studies by the loss of his parent, and obliged to enter into the army. Afterwards, however, he renewed his application to literature, and studied law under Alciatus, at Bologna. But he was obliged to leave this place on account of some satirical verses which he wrote, and to go to Venice, where he was employed by William Pellicier, the French ambassador, in correcting the Greek MSS. which were copied for his sovereign Francis I. In 1542 he removed to Constantinople, where his life was brought into danger by his zeal for the honour of his own nation, which urged him to kill a Frenchman who spoke disrespectfully of it. From hence he escaped first to Genoa, and then to Milan; and from Milan he removed to Reggio, in Lombardy, and accepted an invitation to become public preceptor of Greek in that place. After a residence here of three years, he was invited by Cosmo I. duke of Florence, to a professorship, first of belles lettres, and afterwards of the ethics and politics of Aristotle, in the university of Pisa, where he continued 17 years. During his abode in this place, he defended it, with the aid of the scholars of the university, against an attack of Peter Strozzi, in the war of Sienna. In 1575 he was invited to Rome by the Cardinal Ferdinand de Medici, who entertained him liberally at his court, and recompensed him for the dedication of his poems, with a donation of 2000 gold florins. His latter days he spent at Pisa, living at ease on the munificence of his sovereign; and he died there in 1596. His works in Italian and Latin, both prose and verse, are numerous; but to his Latin performances he chiefly owes his reputation. In five books of miscellaneous Latin poems, he has happily imitated the style of Catullus. His "Cynegeticon," or Chase, in six books, first printed in 1568, and said to be the labour of 20 years, is reckoned one of the best specimens of modern Latinity, and highly commended by Lombin, De Thou, and Possevin. His "Syrias," an epic poem in 12 books, on the expedition of Godfrey of Bouillon to the Holy Land, was composed in his old age, and though it possesses elegance, it wants the majesty required for such a theme.

ANGELITÆ, *Angelites*, in *Ecclesiastical History*, certain Christians, thus denominated from *Angelium*, the name of a place in Alexandria, where their first assemblies were held.

The *Angelites* appear to have been the same with what are otherwise called *Severites*, sometimes *Theodosiani* and *Damianisti*, from the names of their leaders: sometimes also *Tabellionisæ*.

They made their first appearance in the time of the emperor Anathafius, and pope Symmachus, about the year of Christ 494.

The distinguishing tenets of the angelitæ were, that the several persons of the Trinity had no distinct essence, substance, or deity, but only a subsistence or deity in common, or indivisible among them.

ANGELL, in *Geography*, a river of North Wales, which runs into the DOVCY.

ANGELN. See ANGLEN.

ANGELLO, *Port of*, is an harbour on the South Sea coast, in the middle between St. Pedro and Capolita; a broad open bay with good anchorage, but bad landing; and the Spaniards reckon it as good a harbour as Guatulis.

ANGELO, *St.* a small but strong town of Italy, in the Capitanata. There are several other towns and castles of the same name in Italy, particularly the castle of St. Angelo at Rome. N. lat. 41° 43'. E. long. 15° 56'.

ANGELO *Monte*, *St.* a small port in N. lat. 41° 42', and E. long. 15° 13', within Cape Vettice on the west side of the gulf of Venice, is so called from a high mountain within the cape, and the first land made after entering the gulf.

ANGELO *Rio*, *St.* lies on the coast of Brasil, to the north-west from Cape St. Angustine, and is a large opening, without depth of water, blocked up with shoals, and rendered useless for navigation.

ANGELO BUONAROTI, MICHAEL, a celebrated painter, was born in the territory of Arezzo, in Tuscany, in 1474, and educated at Florence, where, pursuing the bent of his natural genius for sculpture and painting, in opposition to the remonstrance of his parents, he became, at the age of 14, the disciple of Dominico Ghirlandaio, who has gained great reputation by the artists which his school produced. Michael Angelo soon became superior to his instructor; and such was his uncommon merit, that Lorenzo de Medici took him into his service, and employed him in founding an academy at Florence for painting and sculpture; and also in executing several noble works, particularly in statuary, which gained him universal applause. By the death of his patron, and the disturbances which happened at Florence, he was obliged to quit the city; but he soon returned, and finished that incomparable figure of David with his sling, out of a large block of marble, which is deemed his master piece, and worthy of the hand of an antique artist. The distinguishing excellence of this great master was sculpture; and he was the first painter who communicated to the artists of Italy a taste for what is grand and elevated, and enabled them to abandon the dry, stiff manner of Perugino and others. Although he cannot be commended for his colouring, yet the grandeur, elevation, and sublimity of his ideas, the exquisite taste of his design, and the justness of some of his expressions, established his fame, notwithstanding many imperfections which have been imputed to him as a painter. He wanted elegance in the contours of his figures, and purity of outline; his attitudes are not always beautiful or pleasing; and he was, as Fresnoy observes, bold even to rashness, in which he often succeeded.

His acquaintance with anatomy qualified him for shewing every limb and joint of the human body, and the insertion, as well as the power of every muscle, with great precision; but in consequence of his anatomical skill, he was apt to give too great a strength and swell to the muscular parts. *How-*

ever, it is said, that Raphael himself derived improvement from observing the grand ideas of Buonaroti, though he far excelled him in elegant simplicity, grace, and nature.

The most capital performances of this extraordinary genius are "The Crucifixion," and "The Last Judgment," which is the ornament of the chapel of Sixtus V. in the Vatican. This picture employed him eight years; and as every muscle and limb are distinctly and curiously marked, the figures are entirely naked. This circumstance induced Biagio of Cesenna, the pope's master of ceremonies, to observe, that such an exhibition of naked figures was more suitable to a brothel than a chapel. But Michael Angelo revenged himself for this sarcasm, by painting the portrait of Biagio exceedingly like, representing him as a demon, with ass's ears, encircled with a large serpent, and placing him in hell. The pope frequently intreated Buonaroti to deliver his master of the ceremonies from this place of torment; but he made this excuse, that he might have been released if he had only been in purgatory, but as he was in hell there was no redemption for him.

A late judicious traveller, having viewed that famous composition with a most critical attention, and proportionable admiration, says, that while he stood before it his blood was chilled, and he felt as if all he saw was real; and the very sound of the painted trumpet seemed to pierce his ears. The composition, however, though grand, is not without perceptible faults. The faces express passions of the strongest kind, and communicate them to the beholders; but the bodies are of too gross an appearance. Indeed the face of our Saviour possesses a dignity, which language cannot describe; it has an astonishing mixture of divine sweetness and severity, which could only be happily expressed by the pencil of Angelo. M. Angelo discontinued painting in the 75th year of his age; and as he died at Rome in the 90th year of his age, A. D. 1563, he was splendidly interred in that city at the expence of Cosmo, duke of Tuscany; but by order of this prince, his remains were secretly conveyed to Florence, and deposited, with great funeral pomp, in a magnificent monument, enriched with three marble statues, representing Painting, Sculpture, and Architecture. Pilkington's Dict. Keyser's Travels, vol. ii. p. 150.

Sir Joshua Reynolds, in the spirited and masterly sketch which he has given of the character of M. Angelo in his "Discourse delivered to the Students of the Royal Academy," Dec. 10, 1795, describes him "as the exalted founder and father of modern art, of which he was not only the inventor, but which he, by the divine energy of his own mind, carried at once to its highest point of possible perfection." "M. Angelo (says this excellent artist and judge of merit,) possessed the poetical part of the art to a most eminent degree; and his mechanical excellence invigorated and emboldened his mind to carry painting into the regions of poetry, and to emulate that art in its most adventurous flights. M. Angelo equally possessed both the mechanical and poetical qualifications; yet of the former there were certainly great examples to be found in ancient sculpture, and particularly in the fragment known by the name of the Torso of Michael Angelo; but of that grandeur of character, air, and attitude, which he threw into all his figures, and which so well corresponds with the grandeur of his outline, there was no example; they could therefore proceed only from the most poetical and sublime imagination." "Were I now to begin the world again," says the ingenious president of the Royal Academy, "however unequal I feel myself to that attempt, I would tread in the steps of that great master: to kiss the hem of his garment, to catch the slightest of his perfections, would be glory and distinction enough

enough for an ambitious man. I feel a self-congratulation in knowing myself capable of such sensations as he intended to excite. I reflect, not without vanity, that these discourses bear testimony of my admiration of that truly divine man; and I should desire that the last words which I shou'd pronounce in this academy, and from this place, might be the name of Michael Angelo."

ANGELO AMERIGI DA CARAVAGGIO, MICHAEL, was born at the village of Caravaggio, in the Milanese, in 1599, and became the author of that style in which he painted, which was strong, and had a powerful effect, by the bold opposition of his lights and shadows. His style of painting was so new, and so surprising, that most of his contemporaries, such as Domenichino, Guido, and Guercino, studied to imitate it. His chief excellence consisted in colouring, but his attitudes are ill chosen, his figures inelegantly disposed, and his compositions manifest no fixed idea of grace or grandeur; nevertheless, some of his pictures are truly fine, and admirably finished with great mellowness of pencil. At first he painted fruit and flowers; but he afterwards devoted his whole attention to historical compositions and portraits. In the church of St. Martin, at Naples, there is a capital picture by Caravaggio, representing "Peter's denial of his Master," with figures at half length, and large as life. The master-piece of all his works, viz. "The Intombing of Christ," is now in the Louvre at Paris. He died in 1609, aged 40. Pilkington.

ANGELO, MICHAEL, called DE CAMPIDOGGIO, was born at Rome in 1610, and distinguished by the appellation Campidoglio, from an office which he held in the capitol at Rome. He was the disciple of Fioravanti, and peculiarly excelled in painting fruit and flowers. He died at the age of 60.

ANGELO CERQUOZZI, MICHAEL, called DI BATTAGLIA, was born in 1600, and denominated Di Battaglia from the excellence of his style in painting battles. He also painted fruit with such taste as rendered his performances, in this way, famous through Europe. He possessed so lively an imagination, and so ready a pencil, that he never sketched his designs, but merely marked them on the canvas as his fancy directed, and gradually retouched them, till he gave them their utmost perfection. He lived to the age of 60 years.

ANGELO COLONNA, MICHAEL, was born at Ravenna in 1600, and studied architectural painting under Girolamo Carti, called Dentone, in which branch of his profession he arrived at a considerable degree of eminence. In concurrence with Curti he enriched a great number of chapels and convents with various works. Philip IV. invited him to the court of Spain, where he was respected and encouraged; and he was also highly esteemed at the courts of Modena, Florence, Paris, and Parma. His principal works are grand compositions in the churches and convents of Italy, and in the palaces of the nobility. Pilkington.

ANGELOLATRIA, from *αγγελος*, *angel*, and *λατρευω*, *I worship*, the superstitious worship or adoration of angels.

ANGELOLOGIA, from *αγγελος* and *λογος*, *discourse*, the doctrine or science of angels, their nature, office, &c. Gerhard has published a sacred Angelologia, Musæus an apologetical Angelologia.

Some use the term Angelosophia in a sense much the same. A. Vareninus has given an Angelosophia.

ANGELOGRAPHIA, from *αγγελος* and *γραφω*, *I describe*, a description of angels, their orders, names, discipline, &c. This amounts to much the same with what others call angelologia. Casmannus and Manitius have published Angelographies.

ANGELONI, FRANCIS, in *Biography*, an historian and antiquary of the 17th century, illustrated the Roman history by medals, in a work published at Rome, in folio, in 1685, and entitled "Histoire Angulle par les Medailles depuis Julius Cesar jusq'a Constantin le Grand." He also wrote a "History of Terni," his native country, printed in 4to. at Rome, in 1646; where he died in 1652. Nouv. Dict. Hist.

ANGELOS, LOS, in *Geography*. See TLASCALA.

ANGELOS, PUEBLA DE LOS, or the *city of angels*, a town of Mexico, and new capital of the province of Los Angeles or Tlascala, supplies the place of the ancient city of Tlascala, which is now dwindled to a poor inconsiderable village, and situated not far from it. It lies in N. lat. 19° 30', and W. long. 99° 10', on the river Ziateua, in a fine valley, about 25 leagues to the eastward of Mexico. In the middle is a beautiful spacious square, from whence run the principal streets in a direct line, which are crossed by others at right angles. One side is almost entirely occupied by the magnificent front of the cathedral, and the other three consist of arcades, under which are the shops of tradesmen. The city is the see of a bishop, suffragan to the archbishop of Mexico. The number of inhabitants is computed at 60,000. In the town there are a mint, and glass-house, and a manufacture of excellent salt; and the adjacent valley produces vines and all sorts of European fruits. In the neighbourhood are several kinds of mineral waters.

ANGELOT, an ancient English gold coin, struck at Paris while under subjection to the English. It was thus called from the figure of an angel supporting the scutcheon of the arms of England and France. There was another coin of the same denomination struck under Philip de Valois.

ANGELOT is also used, in *Commerce*, to denote a small, fat, rich sort of cheese, brought from Normandy.

Skinner supposes it to have been thus called, from the name of the person who first made it up in that form, and perhaps stamped it with his own name. Menage takes it to have been denominated from the resemblance it bears to the English coin called *angelot*. It is made chiefly in the Pays de Bray, whence it is also denominated *angelot de Bray*. It is commonly made in vats, either square or shaped like a heart.

ANGELUS, in the *Church History* of France, denotes a prayer to the Holy Virgin, beginning with this word, instituted by John XXII. in the year 1326, and to be recited every day, morning, noon, and night. Lewis XI. established in France the practice of repeating it at noon; and he obtained from the pope an indulgence of 300 days for all the faithful who, at three o'clock, should rehearse three times on their knees an Ave Maria for the preservation of the king and kingdom. They began, toward the close of the year 1330, to use the angelus in an evening before they put out their fires; this prayer they entitled the pardon, on account of the indulgences attached to it.

ANGELY (L'), in *Geography*, a town of Germany, in the circle of Westphalia and bishopric of Liege, four miles south-west of Charleroy.

ANGEN, a small town of Lower Austria, belonging to the count of Peltzburg.

ANGER. Hutcheson defines anger, a propensity to occasion evil to another, arising upon an apprehension of an injury done by him; or, as archdeacon Paley defines it, anger is the pain we suffer upon the receipt of an injury or affront, with the usual effects of that pain upon ourselves.

Anger is either deliberative or instinctive; and the latter kind is rash and ungovernable, because it operates blindly without affording time for deliberation or fore-sight. Bishop Butler (sermon viii.) very justly observes, that anger is far

from being a selfish passion, since it is naturally excited by injuries offered to others, as well as to ourselves; and was designed by the Author of Nature not only to excite us to act vigorously in defending ourselves from evil, but to interest us in the defence or rescue of the injured and helpless, and to raise us above the fear of the proud and mighty oppressor. "Be ye angry, and sin not," is a scripture caution; and this supposes that all anger is not sinful, because some degree of it, and, upon some occasions, is inevitable. It becomes sinful, however, when it is conceived upon slight and inadequate provocations, and when it continues long. The cautions and precepts relating to anger evidently suppose, that this passion is within our power; and this power consists in so mollifying our minds by habits of just reflection, as to be less irritated by impressions of injury, and to be sooner pacified. Such reflections as the following, as they conduce to this purpose, may be considered as the sedatives of anger, *viz.* the possibility of mistaking the motives from which the conduct that offends us proceeded; how often *our* offences have been the effect of inadvertency, when they are construed into indications of malice; the inducement which prompted our adversary to act as he did, and how powerfully the same inducement has, at one time or other, operated upon ourselves; that he is suffering perhaps under a contrition, which he is ashamed, or wants opportunity, to confess; and how ungenerous it is to triumph by coldness or insult over a spirit already humbled in secret; that the returns of kindness are sweet, and that there is neither honour, nor virtue, nor use, in resisting them—for some persons think themselves bound to cherish and keep alive their indignation, when they find it dying away of itself. We may remember that others have their passions, their prejudices, their favourite aims, their fears, their cautions, their interests, their sudden impulses, their varieties of apprehension, as well as we: we may recollect what hath sometimes passed in our own minds, when we have got on the wrong side of a quarrel, and imagine the same to be passing in our adversary's mind now; when we became sensible of our misbehaviour, what palliations we perceived in it, and expected others to perceive; how we were affected by the kindness, and felt the superiority of a generous reception and ready forgiveness; how persecution revived our spirits with our enmity, and seemed to justify the conduct in ourselves, which we before blamed. Add to this, the indecency of extravagant anger; how it renders us, whilst it lasts, the scorn and sport of all about us, of which it leaves us, when it ceases, sensible and ashamed; the inconveniences and irretrievable misconduct into which our irascibility has sometimes betrayed us; the friendships it has lost us; the distresses and embarrassments in which we have been involved by it; and the sore repentance which on one account or other it always costs us.

But the reflection calculated above all others to allay that haughtiness of temper which is ever finding out provocations, and which renders anger so impetuous, is that which the Gospel proposes, namely, that we ourselves are, or shortly shall be, suppliants for mercy and pardon at the judgment-seat of God. Imagine our secret sins disclosed and brought to light; imagine us thus humbled and exposed; trembling under the hand of God; casting ourselves on his compassion; crying out for mercy—imagine such a creature to talk of satisfaction and revenge; refusing to be intreated, disdainful to forgive; extreme to mark and to resent what is done amiss; imagine this, and you can hardly bring to yourself an instance of more impious and unnatural arrogance. Paley's *Philos.* vol. ii. chap. vii. p. 261, &c.

Physicians and naturalists relate some very extraordinary

effects of this passion. Borrichius cured a woman of an inveterate tertian ague, by putting the patient into a violent fit of anger. The same passion has been excited with salutary influence in paralytic gout, and even dumb persons; and these last have, in some cases, recovered the use of speech. Etmuller, among other instances of singular cures wrought by anger, mentions a person, who, being afflicted with the gout, was provoked by his physician to a great degree, and thus cured. In some cases this passion, unduly excited, has proved mortal. Valentinian the First, Wenceslaus, Matthias Corvinus king of Hungary, and others, have fallen sacrifices to it. Instances might also be mentioned in which it has produced the epilepsy, jaundice, cholera morbus, diarrhoea, &c.

Anger, indeed, is of such a nature, that it quickly throws the whole nervous system into preternatural commotions by a violent stricture of the nervous and muscular parts: and surprisingly augments not only the *syctole* of the heart, and of its contiguous vessels, but also the tone of the fibrous parts in the whole body. It is also certain, that this passion, by the spasmodic stricture it produces in the parts, exerts its power principally on the stomach and intestines, which are highly nervous and membranous parts; whence the symptoms are more dangerous, in proportion to the greater consent of the stomach and intestines with the other nervous parts, and almost with the whole body.

The unhappy influence of anger likewise, on the biliary and hepatic ducts, is very surprising; since by an intense constriction of these, the liver is not only rendered scirrhus, but stones also are often generated in the gall-bladder, and biliary ducts; these accidents have scarcely any other origin than an obstruction of the free motion and efflux of the bile, by means of this violent stricture. From such a stricture of these ducts likewise proceeds the jaundice, which in process of time lays a foundation for calculus concretions in the gall-bladder. Lastly, by increasing the motion of the fluid, or the spasms of the fibrous parts by means of anger, a larger quantity of blood is propelled with an *impetus*, to certain parts; whence it happens, that they are too much distended, and the orifices of the veins distributed there, opened. It is evident from experience that anger has a great tendency to excite enormous hæmorrhages, either from the nose, the aperture of the pulmonary artery, the veins of the arms; or in women from the uterus; especially in those previously accustomed and disposed to such evacuations.

For the influence of this passion on the perspiration and urine of human bodies, see PERSPIRATION, &c.

ANGER, in *Geography*, a town of Germany, in the duchy of Stiria, 12 miles north-north-east of Graz.

ANGER is also a town of Germany, in the archduchy of Austria, eight miles south of St. Polten.

ANGERAP, a river of Prussia, which runs into the Pregel, near Georgenburg.

ANGERBACH, a river of Germany, which runs into the Havel, near Potsdam.

ANGERBURG, a modern, well-built, and flourishing town of Prussia, in a government of the same name. It is defended by a strong castle built in 1335 upon the bank of a lake, which is the source of the river Angerap. This lake, seven German miles long, and one and a half broad, is of great service to the town, and abounds with eels. In 1725 an arch-prefbytery was founded here, which has 12 churches under its jurisdiction. The best Prussian manna is produced in the environs of Angerburg.

ANGERMANLAND, or ANGERMANNIA, a province of Sweden, bounded on the north by Bothnia and Lapland,

on the east by the gulf of Bothnia, on the south by Medelpad, and on the west by Jämtland and Hälsjedalen. Its extent is about 14 Swedish miles in length, and 16 in breadth. It abounds with forests and mountains; amongst the latter of which the high mountain called Skoln is the most remarkable. The soil, however, is fruitful, and in four parts produces excellent corn. The district on the south side of Ångermanland river yields rye, pease, linseed, flax, and good barley; and the marlow lands afford good pasture for cattle. Here are also several fisheries, and lakes abounding with fish. This province maintains soldiers for the royal navy, and consists of a land-district jurisdiction, and two vogteys. It is the residence of the superintendent of this diocese, which is the chief magistracy, and divided into two provostships. The superintendency or bishoprick consists of the provinces of Ångermanland, Medelpad, Jämtland, Hälsjedalen, and the whole government of West Bothnia, Krimlapmark excepted, which belongs to the diocese of Abo. The province is divided into the north and south parts.

ÅNGERMANSKANAL, is one of the largest rivers in the whole kingdom of Sweden, being about a league in breadth at its mouth in the gulf of Bothnia, and navigable for small vessels several Swedish miles into the continent. The salmon-fishery in this river affords extraordinary profits to the country.

ÅNGERMUND, a town of the duchy of Courland, in the district of Piltina, 16 miles north-east of Piltina.

ÅNGERMUND is also a town and prefecture of Berg, in Westphalia, situate on the rivulet of Anger.

ÅNGERMUND, NEW, a town of Germany, in the circle of Upper Saxony, and neck-mark of Brandenburg; 36 miles north-east from Berlin. N. lat. 53° 1'. E. long. 14° 1'.

ÅNGERN, a small place, with a church and iron-works, in the prefecture of Tuckum, and duchy of Courland.

ÅNGERO, a town of Italy, in the kingdom of Naples, and Principato Citra; 11 miles west north-west from Salerno.

ÅNGERONA, in *Mythology*, a pagan deity of the Romans, similar to the Harpocrates of the Egyptians, and the Sigilon of the Greeks, supplicated by them for relief under the quinzey or argina. This deity is denominated by Praxiphanes the "Goddess of Silence and Calmness of Mind," because she banished all unreason and melancholy. She is represented with her mouth closed, and a finger applied to it, to denote patience, and the suppression of complaint. Her statue was set up in the temple of the goddess Voluptas, and thus furnished a moral allegory, intimating that patience under affliction led to subsequent and certain pleasure.

ÅNGERONALIA, in *Antiquity*, solemn feasts held by the Romans, the 21st of December, in honour of Angerona, or Angerona, the goddess of patience and silence.

Festus and Julius Modestus, quoted by Macrobius, Saturn. lib. 1. cap. 10. derive the name from *angina, squintancy*; and suppose the goddess to have been thus denominated, because she presided over that disease. Others suppose it formed from *anger, grief, pain*; to intimate that she gave relief to those afflicted therewith. Others deduce it from *angio, I press, I close*; as being reputed the goddess of silence, &c.

ÅNGEROT, in *Geography*, a small town of Westphalia, in the duchy of Berg, situated near the fall of the Anger into the Rhine, nine miles north from Duffeldorp.

ÅNGERS, anciently *Juliomagus* and *Andegarium*, a city of France, and capital of the department of the Mayne and Loire, situate on the Mayne, and divided by it into two parts, communicating with each other by two bridges. Before the revolution it was the capital of Anjou and the see

of a bishop, suffragan to the archbishop of Tours: its university was founded by St. Lewis in 1246, by whom also its castle, seated on a steep rock, was built; and its academy of the belles lettres in 1685. The first walls of this city were built by John, king of England, who was count of Anjou in 1214, but destroyed by Louis VIII. and rebuilt by his son, in their present form, in 1232; the city has 16 parishes, and several religious houses; the cathedral is venerable for its age, and beautiful with regard to its structure; the houses are covered with the black slate procured from the quarries of Angers, and hence Angers is called "The Black City." The manufacture of Angers before the revolution consisted of camblets, serges, and mixed stuffs, and it carried on a considerable trade in other commodities. Its population is estimated at 300,000 inhabitants. It is distant 23 leagues west from Tours, 18 north-east from Nantes, and 67 south-west from Paris. N. lat. 47° 28' 8". W. long. 0° 33' 5".

ANGERVILLE, a small town of France, in the department of the Seine and Oise, and chief place of a canton, in the district of Estampes, and four leagues distant from it.

ANGERVILLE is also a town of France, in the department of the Lower Seine, and chief place of a canton, in the district of Montivilliers, and two and a half leagues north-east from it.

ANGETENAR, in the *Arabian Astronomy*, denotes a fixed star, of the fourth magnitude, in the body of Cetus, or the whale.

ANGHIERA, in Latin *ANGLIERA*, in *Geography*, a town of Italy, in the duchy of Milan, and capital of a county of the same name, established by the emperor Wenceslaus in 1397, and situate at the foot of the Alps. It is well peopled, and has a good trade, and the adjacent country is fertile. It is directly opposite to Aroua, and separated from it by the lake called Lago Maggiore. N. lat. 45° 18'. E. long. 8° 19'.

ANGIGLOSSII, from *αγγιστος, confringo*, and *γλωσσα, lingua*, denote those who speak with difficulty, hesitation, or even stammering.

ANGILDUM, in our *Old Writers*, denotes a simple gold, that is, the simple value of the man, or other thing.

The word is compounded of the Saxon, *an, one*, and *gild, payment, price, or compensation*.

In this sense, *angildum* stands contradistinguished from *twigildum, a double compensation*; *trigildum, a triple compensation*.

ANGINA, in *Medicine*, an inflammation about the muscles of the *larynx* or *pharynx*, attended with an acute fever, difficulty of swallowing, and danger of suffocation.

The word is derived immediately from the Latin *ango, I vex*, formed of *αγγω, suffoco, strangulo*. See *CYNANCHE*.

ANGINA lini, in *Botany*, a name used by some of the later Greek writers, to express what the more ancient writers of this nation called *linozostis*, and the Latins *epilinum*; this was the *cuscuta* or *codder* growing on the flax, as that on the thyme was called *epithimum*. It was called *angina lini*, the quinzey of flax, from its choaking that plant.

ANGINA pectoris, in *Medicine*, a name given to a disease, dangerous and not extremely rare, first described by Dr. W. Heberden, and so called from the feat of the disorder, and the sense of strangling and anxiety with which it is attended. The doctor's account of it is in the second volume of the London Medic. Transf. p. 59. &c. See also Medic. and Phil. Comment. vol. ii. p. 95. The patient, while walking, especially if soon after eating, is affected with a painful sensation in his breast; at first, it is removed by his standing still, but afterwards it does not go off so suddenly: it comes

on in bed, obliges the patient to get up, and continues for an hour and more; sometimes, though rarely, it attacks the patient standing or sitting still. It is brought on by trivial accidents, coughing, &c. or any slight disturbance. In some it is worse in Winter, in others in Summer. The pulse, sometimes at least, is not disturbed. People affected with it often die suddenly, but some continue subject to it for upwards of 20 years. The patient commonly refers the seat of his complaint to the sternum, or to a line running across the middle of the sternum; and a pain in the middle of the left arm sometimes accompanies it.

The cause of this distressing malady was not understood till lately, it being often supposed a spasmodic affection, or a curies of the sternum; but it is now believed to be an ossification of the coronary arteries which supply the muscular substance of the heart with blood. This change of structure renders the heart unequal to the task of circulating the unusual quantity of blood thrown upon it by bodily exertions or passions of the mind; and hence it is that these are the exciting causes of the distress, in the early stages of the disease.

The prognosis must generally be unfavourable; but several means may be employed to diminish the sufferings of the patient, or to postpone the fatal issue of the disease. These are temperance in eating and drinking, and abstinence from violent exercise and passions. As angina pectoris commonly attacks persons disposed to obesity and plethora, these states should be avoided by a suitable regimen, and occasional bleeding and purging. The circulation should also be kept as equable as possible in every part of the system, by warm clothing, and avoiding the causes of local congestion. Wine, or other cordials, taken at bed-time, prevent or weaken night-fits, but opium is the most effectual relief; ten, fifteen, or twenty drops of the Thebaic tincture, taken at bed-time, may be safely continued as long as requisite.

This disease has been accurately described, and suitable preventives or remedies proposed, by Dr. Fothergill. Med. Obs. and Inq. vol. v. p. 233, 252.; and Dr. C. H. Parry, of Bath, has published an "Inquiry into the Symptoms and Causes of the Syncope Anginosa, commonly called Angina pectoris," 8vo. 1799. This work contains every thing then known on the subject.

ANGIOLELLO, JOHN MARIA, in *Biography*, an historian, of the 16th century, was a native of Vicenza, and followed the young sultan Mustapha, to whom he was a slave, in 1573, into Persia, in the dreadful war carried on by Mahomet II. at the head of nearly 200,000 men. As an eye-witness of the events of this war, he wrote "A History of Mahomet II." in the Italian and Turkish languages, dedicated to the sultan, freely written, and yet well received and liberally rewarded. A work, "Of the Life and Actions of the King of Persia," was printed at Venice, under the name of this writer in 1553; and he also wrote, in Italian, "A Relation of the Life and Actions of Uffun Cassan." Gen. Dict.

ANGIOPTERIS, in *Botany*. See ONOCLEA.

ANGIOSPERMIA, a term used by Linnæus, to express the second order of the *didynamia* plants, which have their seeds not lodged naked within the cup as in the *gymnospermia*, but inclosed in a capsule, and adhering to a receptacle in the middle of a pericarp. The class of *didynamia* contains the labiated and perfonated plants. The angiospermia are the perfonated, the others the labiated kind. In this order many of the corollas are perfonate, or labiate, with the lips closed; some, however, have bell-shaped, wheel-shaped, or triangular corollas.

To have seeds inclosed in a pericarp is common to all, and

hence the name of the order *angiospermia*. In most of the genera the calyxes are quinquefid; in some, however, they are bifid; one trifid, in many quadrifid, and in two multifid. This order, in Gmelin's edition of Linnæus, contains 87 genera. See DIDYNAMIA.

ANGITAS, in *Ancient Geography*, a river of Thrace, which runs from the north-east, and discharges itself into the Strymon, above Amphipolis.

ANGITIÆ LUCUS, or NEMUS, a forest of Italy, situate near the Lacus Fucinus. Pliny calls the inhabitants Lucenses. Angitia was the sister of Medea and Circe, and was regarded as a goddess, because she prescribed antidotes against poison and the bites of serpents. The name was probably derived from anguis, a serpent, a species of animals which abounded in this place. This forest is mentioned by Virgil (*Æn.* viii. v. 659.), and by Silius Italicus (*lib.* viii. v. 498.), and was situated in the country of the Marsi.

ANGITULA, a small river of Italy in Brutium, which discharged itself into the Thermaic gulf, near Nepita.

ANGLE, ANGULUS, in *Geometry*, the aperture or mutual inclination of two lines, meeting in a point.

Such is the angle BAC (*Plate II. Geometry, fig. 15.*) formed by the lines AB and AC, meeting in the point A.—The lines AB, and AC, are called the legs or the sides of the angle; and the point of intersection, the vertex or angular point.

Angles are sometimes denoted by a single letter affixed to the vertex, or angular point, as A; and sometimes, when several angles have the same vertex, by three letters, that of the vertex being in the middle, as BAC.

The measure of an angle, by which its quantity or magnitude is expressed, is an arc, DE, described from its vertex A, with any radius at pleasure between its legs, AC and AB; and the measure of the angle depends merely on the inclination of the lines by which it is formed, and not on the length of the radius, or the extent of the arc that bounds it.

Hence angles are distinguished by the ratio of the arcs which they thus subtend to the circumference of the whole circle.—And thus an angle is said to be of so many degrees, as are the degrees of the arc DE, by which it is measured.

Hence also, since similar arcs AB and DE, (*fig. 16.*) have the same ratio to their respective circumferences; and the circumferences contain each the same number of degrees; the arcs AB and DE, which are the measures of the two angles ACB, and DCE, are equal; and therefore the angles themselves must be likewise equal. Hence, again, as the quantity of an angle is estimated by the ratio of the arc subtended by it to the periphery, it is of no importance what radius that arc is described with; but the measures of equal angles are always either equal arcs, or similar ones; and contrarily.

It follows, therefore, that the quantity of the angles remains still the same, though the legs be either produced or diminished.—And thus in similar triangles, and in similar figures, the homologous or corresponding angles are also equal.

The taking or measuring of angles is an operation of great use and extent in surveying, navigation, geography, astronomy, &c. The instruments chiefly used for this purpose are quadrants, sextants, octants, theodolites, circumferentors, &c.

Mr. Hadley has invented a new and excellent instrument for taking angles, useful where the motion of the object, or any circumstance causing unsteadiness in the common instruments, renders the observations difficult or uncertain. Phil. Trans. N° 420, and N° 425. Mr. Dollond has likewise contrived

conve'd an instrument for measuring small angles. Phil. Trans. vol. xlviii. N. 73. See HADLEY'S QUADRANT and MICROMETER.

ANGLE, *to measure the quantity of an.*—1. On paper. Apply the centre of a protractor to the vertex of the angle C (*Plate I. Surveying, fig. 1.*), so that the radius CB may coincide with one of the legs: the degree shewn in the arc, by the other leg of the angle, will give the angle required. To do the same with a line of chords, see SECTOR. See GONIOMETRY.

2. On the ground.—Place a surveying instrument, *e. gr.* a semi-circle (*fig. 2.*), in such a manner as that a radius thereof CG may lie over one leg of the angle, and the centre C over the vertex. The first is obtained by looking through the sights F and G, towards a mark fixed at the end of the leg; and the latter, by letting fall a plummet from the centre of the instrument. Then, the movable index HI being turned this way and that, till through its sights you discover a mark placed at the extreme of the other leg of the angle; the degree it cuts in the limb of the instrument shews the quantity of the angle.

To take the angle with a QUADRANT, THEODOLITE, PLAIN TABLE, CIRCUMFERENTOR, COMPASS, &c. See the several articles.

To plot or lay down any given angle, *i. e.* the quantity of the angle being given, to describe it on paper. See FLOTTING and PROTRACTOR.

To bisect a given angle, as HIK (*Plate I. Geometry, fig. 17.*), from the centre I, with any radius at pleasure, describe an arc LM. From L and M, with an aperture greater than half LM, strike two arcs mutually intersecting each other in N. Then drawing the right line IN, we have HIN = NIK.

To trisect an angle, see TRISECTION.

Pappus, in his Mathematical Collections, lib. iv. treats of angular sections, and more particularly of trisections.

ANGLES are of various kinds and denominations.

With regard to the form of their legs, they are divided into *rectilinear, curvilinear, and mixed.*

ANGLE, *rectilinear, or right lined,* is that whose legs are both right lines: as BAC (*Plate I. Geometry, fig. 15.*).

ANGLE, *curvilinear,* is that whose legs are both of them curves.

ANGLE, *mixt, or mixtilinear,* is that, one of whose sides is a right line, and the other a curve.

With regard to their magnitude, *angles* are again divided into *right, acute, obtuse, and oblique.*

ANGLE, *right,* is that formed by a line falling perpendicularly on another; or that which subtends an arc of 90 degrees. Such is the angle KLM (*fig. 18.*)

The measure of a right angle, therefore, is a quadrant of a circle; and consequently all right angles are equal to each other.

ANGLE, *acute,* is that which is less than a right angle, or than 90°—as AEC (*fig. 19.*).

ANGLE, *obtuse,* is that greater than a right angle, or whose measure exceeds 90°—as AED.

ANGLE, *oblique,* is a common name both for acute and obtuse angles.

With regard to their situation in respect of each other, *angles* are divided into *contiguous, adjacent, vertical, alternate and opposite.*

ANGLES, *contiguous,* are such as have the same vertex, and one leg common to both.—Such are FGH and HGI (*fig. 20.*).

ANGLE, *adjacent,* is that made by producing one of the

legs of another angle. Such is the angle AEC (*fig. 19.*), made by producing a leg, ED, of the angle AED, to C. Two adjacent angles, *x* and *y*, or any other number of angles made at the same point E, over the same right line CD, are together equal to two right ones; and consequently to 180°. And hence one of two adjacent angles being given, the other is likewise given; as being the supplement of the former to 180°.

Hence also, to measure an inaccessible angle in a field, take an adjacent accessible angle, and subtract that from 180°, the remainder is the angle required.

Again, all the angles *x, y, o, E,* &c. made round a given point E, are equal to four right ones; and therefore all make 360°.

ANGLES, *vertical, or opposite,* are those whose legs are continuations of each other. Such are the angles *o* and *x*, (*fig. 19.*).

If a right line AB, cut another, CD, in E, the vertical angles, *x* and *o*, as also *y* and *E*, are equal. And hence, if it be required to measure, in a field, or any other place, an inaccessible angle, *x*; and the other vertical angle, *o*, be accessible; this latter may be taken in lieu of the former.

ANGLE, *alternate* See ALTERNATE.

ANGLES, *external,* are the angles of any right-lined figure made without it, by producing all the sides.

All the external angles of any figure, taken together, are equal to four right angles; and the external angle of a triangle is equal to both the internal and opposite ones.

ANGLES, *internal,* are the angles made by the sides of any right-lined figure within the said figure.

The sum of all the internal angles of any right-lined figure is equal to twice as many right angles as the figure hath sides, excepting four. This is easily demonstrated from Euclid, prop. 32. lib. i.

The external angle of a trapezium inscribed in a circle is equal to the internal opposite one; and the two internal opposite angles are equal to two right ones.

ANGLES, *homologous, or like,* are such angles in two figures, as retain the same order from the first, in both figures.

ANGLE *at the periphery,* is an angle whose vertex and legs do all terminate in the periphery of a circle. Such is the angle EFD (*Plate I. Geom. fig. 21.*)

ANGLE *in the segment,* is the same with that at the periphery.

It is demonstrated by Euclid, that all the angles in the same segment are equal to one another; that is, any angle EHD, is equal to any angle EFD in the same segment EFD.

The angle at the periphery, or in the segment, is comprehended between two chords EF and FD, and stands on the arc ED, and is measured by half that arc.

The measure of an angle without the periphery X (*fig. 22.*) is the difference between half the concave arc LM whereon it stands, and half the convex arc NO intercepted between its legs.

ANGLE *in a semicircle,* is an angle in a segment of a circle, whose base is the diameter of the circle.

It is demonstrated by Euclid, that the angle in a semicircle is a right one; in a segment greater than a semicircle, it is less than a right one; and in a segment less than a semicircle, it is greater than a right one.

Since an angle in a semicircle stands on a semicircle, its measure is a quadrant of a circle; and therefore is a right angle.

ANGLE *of a semicircle,* is the angle which the diameter of

of a circle makes with the circumference. The chief property of this angle is, that it is less than a right angle, and greater than any acute right-lined angle.

ANGLE *at the centre*, is an angle whose vertex is in the centre of a circle, and its legs terminated in the periphery thereof. Such is the angle CAB (*fig. 21.*).

The angle at the centre is comprehended between two radii, and its measure is the arc BC.

Euclid demonstrates, that the angle at the centre BAC is double of the angle BDC, standing on the same arc BC. And hence, half of the arc BC is the measure of the angle at the periphery.

Hence, also, two or more angles III, I, and HMI (*fig. 23.*) standing on the same, or equal arcs, are always equal. All angles at the centre are proportional to the arcs upon which they stand, and so are likewise all angles at the circumference.

ANGLE *without the centre*, HKI, is that whose vertex K is not in the centre, but its legs HK and IK are terminated in the periphery.

The measure of an angle without the centre is half the sum of the arcs HI and LM, whereon it and its vertical K stand when it is within the circle, or half the difference when it is without.

ANGLE *of contact*, is that made by the arc of a circle, or of any curve, and a tangent in the point of CONTACT.—Such is the angle IHK, (*fig. 24.*)

The angle of contact, in a circle, is proved by Euclid to be less than any right-lined angle; but from hence it does not follow, that the angle of contact is of no quantity, as Peletarius, Wallis, and some others, have imagined. V. Wall. Algeb. p. 71, &c. Clavius, on the other hand, rightly maintained, that it is not absolutely nothing, but that it is of no magnitude compared with a right-lined angle, being a quantity of a very different nature: such as a line with respect to a surface, or a surface with respect to a solid, &c. And since his time it has been proved by Sir Isaac Newton, and others, that angles of contact may be compared with each other, though not with right-lined angles, and that the proportions which they bear to each other may be assigned. Thus, the circular angles of contact IHK, IHL, are to each other in the reciprocal subduplicate ratio of the diameters HM, HN; and the circular angle of contact may be divided by describing intermediate circles into any number of parts, and in any proportion. And if, instead of circles, the curves be parabolas, and the point of contact H the common vertex of their axes, the angles of contact would in this case be reciprocally in the subduplicate ratio of their parameters. But elliptical and hyperbolic angles of contact would be reciprocally in the subduplicate of the ratio, compounded of the ratios of the parameters and the transverse axes. Moreover, if TOQ (*fig. 25.*) be a common parabola to the axis OP and tangent VOW, whose equation is $x=y^2$, x being the absciss OP, and y the ordinate PQ, and the parameter being 1; and if OK, OS, &c. be other parabolas to the same axis, tangent and parameter, their ordinate y being PR, or PS, &c. and their equations $x=y^3$, $x=y^4$, $x=y^5$, &c.; then the series of the angles of contact would be in succession infinitely greater than each other; that is, the angle of contact WOQ would be infinitely greater than WOR, and this again infinitely greater than WOS, and so on infinitely. Besides, between the angles of contact of any two of this kind, other angles of contact may be found *ad infinitum*, which shall infinitely exceed each other, and yet the greatest of them be infinitely less than the smallest right-lined angle. Thus also $x^2=y^3$, $x^3=y^4$, $x^4=y^5$, &c. denote a series of curves, of which every suc-

ceeding one makes an angle with its tangent infinitely greater than the preceding one; and the least of these, *viz.* that whose equation is $x^2=y^3$, or the semicubical parabola, is infinitely greater than any circular angle of contact.

ANGLE *of a segment* is that made by a chord with a tangent, in the point of contact. Such are IHK (*fig. 26.*) the angle of the lesser segment IMH, and IHL the angle of the greater segment INH. And the measure of each of these angles is half the alternate or supplemental segment, or it is equal to the angle in it; that is, the angle IHK=INH, and IHL=IMH.

ANGLES, *for the effects, properties, relations, &c. of, when combined into triangles, quadrangles and polygonous figures*, see TRIANGLE, QUADRANGLE, SQUARE, PARALLELOGRAM, POLYGON, FIGURE, &c.

ANGLES are again divided into *plane, spherical, and solid.*

ANGLES, *plane*, are those above-mentioned; which are defined by the inclination of two lines in a plane, meeting in a point.

ANGLE, *spherical*, is an angle formed on the surface of a sphere by the intersection of two great circles, or the inclination of the planes of two great circles of the sphere.

For the properties of spherical angles, see SPHERICAL Angle.

ANGLE, *solid*, is the mutual inclination of more than two planes, or plane angles, meeting in a point, and not contained in the same plane. For the measure, properties, &c. of solid angles, see SOLID Angle.

We also meet with other less usual sorts of angles among some geometricians; as

ANGLE, *horned, angulus cornutus*, that made by a right line, whether a tangent or secant, with the periphery of a circle.

ANGLE, *lunular, angulus lunularis*, is that formed by the intersection of two curve lines; the one concave, and the other convex.

ANGLE, *cissoïd, angulus cissoïdes*, is the inner angle made by two spherical convex lines intersecting each other. See Cissoïd.

ANGLE, *sistroïd, angulus sistroïdes*, is that which has the form of a SISTRUM.

ANGLE, *pelecoïd, angulus pelecoïdes*, is that in figure of a hatchet. See PELECOIDES.

ANGLE, in *Trigonometry*. See TRIANGLE, and TRIGONOMETRY.

For the sines, tangents, and secants of angles, see SINE, TANGENT, and SECANT.

ANGLE, in *Geography*, a town of France, in the department of Vendée, and chief place of a canton, in the district of Sables d'Olonne, ten miles west-south-west from Luçon.

ANGLE is also a town of France, in the department of Vienne, and chief place of a canton, in the district of Mont Morillon, on the Creuse, 25 miles east from Poitiers.

ANGLE, in *Mechanics*. *Angle of direction*, is that comprehended between the lines of direction of two conspiring forces. See DIRECTION.

ANGLE *of elevation*, is that comprehended between the line of direction of a projectile, and any plane upon which the projection is made, whether horizontal or oblique. Such is the angle RAB (*Plate I. Mechanics, fig. 3.*) which is comprehended between the line of direction of the projectile AR, and the horizontal line AB.

ANGLE *of incidence*, is that made by the line of direction of an impinging body, in the point of contact. Such is the angle DCA (*fig. 4.*)

ANGLE *of reflection*, is that made by the line of direction of

of the reflected body, at the point of contact from which it rebounds. See *is the angle C*

ANGLE, in *Optics*. *Visual*, or *optic angle*, is the angle included between the two rays directed from the two extreme points of an object to the centre of the pupil.—Such is the angle ABC (*Plate 1. Opticæ, fig. 1.*) comprehended between the rays AB and BC. The apparent magnitude of objects is greater or less, according to the angle under which they appear. See *APPARENT MAGNITUDE*.

Objects seen under the same, or an equal angle, always appear equal.

The least *rifle angle*, or the least angle under which a body can be seen, according to Dr. Hook, is one minute; though Dr. Jurin shews, that at the time of his debate with Hevelius on this subject, the latter could probably discover a single star made to fill all an angle as 20". But bodies are visible under smaller angles, as they are more bright or luminous. Dr. Jurin states the grounds of this controversy, and discusses the question at large in his Essay upon distinct and indistinct Vision, published in Smith's Optics, p. 148, &c.

ANGLE of the interval of two places, is the angle subtended by two lines directed from the eye to those places.

ANGLE of incidence, in *Catoptrics*, is the lesser angle, made by an incident ray of light, with the plane of a speculum; or, if the speculum be concave or convex, with a tangent in the point of incidence. Such is the angle ABD (*fig. 3.*) Or, as some define it, it is the angle which a ray of light makes with a perpendicular to that point of the surface of any medium on which it falls.

Every incident ray, AB, makes two angles, the one acute, ABD, the other obtuse, ABE; though sometimes both right. The lesser of such angles is the angle of incidence. See *INCIDENCE*.

ANGLE of incidence, in *Dioptrics*, is the angle ABI (*fig. 4.*), made by an incident ray, AB, with a lens, or other refracting surface, HI.

ANGLE of inclination, is the angle ABD, contained between an incident ray, AB, and the axis of incidence, DB. See *AXIS*, &c.

ANGLE of reflexion, } in *Catoptrics*. See *REFLECTION*.

ANGLE of refraction, } in *Dioptrics*. See *REFRACTION*.

ANGLE, in *Astronomy*. *Angle of commutation*. See *COMMUTATION*.

ANGLE of elongation, or *Angle at the earth*. See *ELONGATION*.

ANGLE, parallactic. See *PARALLACTIC angle* and *PARALLAX*.

ANGLE at the sun, is the angle under which the distance of a planet from the ecliptic is seen from the sun.

ANGLE of the East. See *NONAGESIMAL*.

ANGLE of obliquity, of the ecliptic, or the angle of inclination of the axis of the earth, to the axis of the ecliptic, is now nearly 23° 28'. By means of this inclination, such inhabitants of the earth as live beyond 45° of latitude, have more of the sun's heat, taking all the year round; and those who live within 45° have less of his heat, than if the earth always moved in the equinoctial. See *OBLIQUITY*, and *ECLIPTIC*.

ANGLE of longitude, is the angle which the circle of a star's longitude makes with the meridian, at the pole of the ecliptic.

ANGLE of right ascension, is the angle which the circle of

a star's right ascension makes with the meridian at the pole of the equator. See *RIGHT ASCENSION*.

ANGLE of Position. See *POSITION*.

ANGLE, in *Navigation*. *Angle of the rhumb*, or *loxodromic Angle*. See *RHUMB*, and *LOXODROMY*.

ANGLES, in *Fortification*, are understood of those formed by the several lines used in fortifying, or making a place defensible.

These are of two sorts; *real*, and *imaginary*. *Real angles* are those which actually subsist and appear in the works. Such are the *flanking angle*, the *angle of the epaule*, *angle of the flank*, and the *re-entering angle of the counterescarp*. *Imaginary*, or *ocult angles*, are those which are only subsistent to the construction, and which subsist no more after the fortification is drawn. Such are the *angle of the centre*, *angle of the polygon*, *flanking angle*, *salient angle of the counterescarp*, &c.

ANGLE of or at the centre, is the angle formed at the centre of the polygon, by two semi-diameters drawn from the centre to two adjacent angles, and subtended by a side of it. Such is the angle CKF (*Plate Fortificat. fig. 1.*) This is found by dividing 360 degrees by the number of sides in the regular polygon.

ANGLE of the circumference, is the mixt angle made by the arc drawn from one gorge to the other.

ANGLE of the counterescarp, is that made by the two sides of the counterescarp, meeting before the middle of the CURTIN.

ANGLE of the curtain, or *of the flank*, is that made by, or contained between, the curtain and the flank; such is the angle BAE.

ANGLE of the complement of the line of defence, is the angle arising from the intersection of the two complements one with another.

ANGLE, diminished, is the angle which is made by the meeting of the exterior side of the polygon with the face of the BASTION. Such is the angle BCF.

ANGLE of the polygon, is the angle GHM, intercepted either between the two internal sides GH, and HM, or the two exterior sides. This is the supplement of the angle at the centre, and is found by subtracting CKF from 180 degrees.

ANGLE of the epaule, or *shoulder*, is that formed by the flank and the face of the bastion. Such is the angle ABC.

ANGLE of the interior figure, is the angle GHM, made in H, the centre of the bastion, by the meeting in the innermost sides of the figure GH and HM.

ANGLE of the tenaille, or *flanking angle outward*, is that made by the twoasant lines of defence, *i. e.* the two faces of the bastion when prolonged.

ANGLE flanking inward, is the angle CIH, made by the flanking line with the curtain.

ANGLE, flanked, by some called the *angle of the bastion*, is the angle BCS, made by the two faces of the bastion, BC, CS; being the outermost part of the bastion, and that most exposed to the enemy's batteries, and therefore by some called the *point of the bastion*.

ANGLE of the flank, is that formed by the flank, and the curtain.

ANGLE forming the flank, is that consisting of one flank, and one *DEMI-gorge*.

ANGLE forming the face, is that composed of one flank, and one face.

ANGLE of the triangle, is half the angle of the polygon; or half the supplement of the angle at the centre.

ANGLE of the moat, is that made before the curtain, where it is intersected.

ANGLE,

ANGLE, *re-entering*, or *re-entrant*, is that whose vertex is turned inwards, towards the place.

ANGLE, *saliant*, or *fortant*, is that which advances its point toward the field.

ANGLE of the *tenaille*, or the *outward flanking angle*, called also the *angle of the moat*, or the *dead angle*, is made by the two lines *flanking* in the faces of the two bastions, extended till they meet in an angle towards the curtain. This always turns its point in towards the work.

ANGLE, *dead*, is a re-entering angle, which is not flanked or defended.

ANGLE of a *wall*, in *Architecture*, is the point or corner where the two sides or faces of a wall meet.

ANGLE *Bar*, in *Carpentry*, is that which is perpendicular to the horizon, in the angle formed by any two faces of a bow-window, whose plan is a polygon.

ANGLE *Bracket* of a cove or cornice, is that which stands in a perpendicular plane, passing through the diagonal of the plan, ranging in every right line horizontally, directed along the edges of the common ribs that are fixed on either side of it.

ANGLE *Rib* of a groin, is that which stands in the perpendicular plane passing through the diagonal of the plan, and ranging in right lines in every horizontal direction with the common ribs that are fixed on either side of it. These two last are the same in principle, their difference being only in the application; for their description, see a **GROIN**.

ANGLLEN, or **ANGELEN**, in *Geography*, a small district of the duchy of Sleswick, in Denmark, from 16 to 20 miles in length, and about as much in breadth, situate between Flensburg and Sleswick. see **ANGLES**.

ANGLER, a fisherman, or other person who practises **ANGLING**.

Anglers are to be distinguished from poachers. Some make the same difference between them, that is between the fair trader and smuggler. Accordingly the legislature has made the latter penal, but laid no restraint on the former. Angling can do no prejudice to the fish of a river. Anglers fish for their recreation, not for lucre; whereas poachers make it their livelihood.

ANGLER, in *Ichthyology*, the English name of the batrachos of Aristotle and Oppian, and the rana piscatrix of Pliny and Ovid: a species of **LOPHIUS**.

ANGLERIA, **PADRE CAMILLO DI CREMONA**, in *Biography*, author of a musical tract entitled, "Regole di Contrappunto," published at Milan 1622.

ANGLES of a *battalion*, in the *Military Art*, are those soldiers that are placed where the ranks and files terminate. See **BATTALION**.

The angles of a battalion are said to be *blunted*, when the soldiers at the four corners are removed, so that the square battalion becomes octagonal; this was an evolution very common among the ancients, though now disused.

ANGLES, in *Anatomy*, are understood of the *canthi*, or corners of the eye, where the upper eye-lid meets with the under.

That next the nose is called the *great* or *internal*, and that towards the temples, the *less* or *external angle*, or **CANTHUS**.

ANGLES, in *Astrology*, denote certain houses of a figure, or scheme of the heavens. Thus the horoscope of the first house is termed the *angle of the east*.

ANGLES, *Instruments for measuring horizontal*, in *Astronomy*. See **HORIZONTAL**.

ANGLES, in *Geography*, a town of France, in the department of the Haut, and chief place of a canton, in the district of St. Pons, three leagues west-north-west from St. Pons.

ANGLES, in *History*, are said to have been a tribe of the Suevi, who, in the time of Cæsar (Bell. Gall. lib. iv.), were the greatest and bravest of all the German nations. This tribe, after various adventures and migrations, settled in that part of the Cimbric Chersonesus, which now forms the duchy of Sleswick, where some vestiges of their name still remain in the district of Anglen. The most probable etymology of the name deduces it from the Saxon "Angel or Engel," signifying "a fish-hook;" and intimating that the Angles were much addicted to piracy, and were so called by the neighbouring nations, because, like fish-hooks, they caught all that was in the sea. From these people the English are said to have originated; for when they were solicited by the British ambassador to succour their countrymen against the Scots and Picts, they embarked, with greater spirit and in greater numbers than any of the other German nations; and having expelled the Picts, and made themselves masters of the country, they had the honour of giving their name to England and its inhabitants. The reason, it is said, why the name of Angles was preferred to that of Saxons seems to have been, because it was more distinctive and more honourable: there being at that time a large nation of Saxons on the continent, who were in disrepute on account of their manners, and the defeats which they had suffered from Charlemagne. It may be added, that the Angles constituted the greatest part of Egbert's subjects: all the northern, eastern, and midland counties, being inhabited by them. Egbert published an edict, dated at Winchester in the year 827, abolishing the distinctions of Saxons, Jutes, and English, commanding all his subjects for the future to be called by the latter name only. Rapin's Hist. vol. i. p. 89.

ANGLESEA, or **ANGLESEY**, the Mona of Tacitus, in *Geography*, the English name for Môn, an island on the northern extremity of Wales, from which it is separated only by a narrow channel, called the Menai. It is about 20 miles in length, by 17 miles in breadth; or as others say, 25 long, and 18 broad; and is one of the six counties of North Wales; which is divided into three hundreds: that is to say, Aber Fraw, with its townships of Llivon and Malltreath; Rhosyr, with its townships of Tindaethwy and Menaï; and Cemaes, with its townships of Twrcelyn and Talybolion. According to a late estimate Anglesea contains about 200,000 acres of land, and 20,000 inhabitants; and is divided into seven hundreds, 74 parishes, and four market towns; situate within the diocese of Bangor. The chief town is Beaumaris. The air is in general good, except when the thick fogs arise from the Irish seas; but in autumn it is cold and aguish. The soil, which, on the first aspect, appears rocky and mountainous, is nevertheless fertile, and produces a number of cattle, and great quantities of corn, sent annually to England. However much of the land lies undrained, and full of turf bogs, or pointed rocks; and yet there are some rich farms in the interior and along the coast, particularly that which is opposite to Caernarvonshire. The general face of the country is low, flat, and unpleasant.

This island, which is known to the Welsh only by the name of Môn, obtained the appellation of Anglesey, among the English, from the following circumstance: in the year 819, Egbert invaded North Wales; and after ravaging several districts, he passed over into Mona; defeated the Welsh, in a bloody battle near Beaumaris; and, in consequence of his victory, he got possession of the whole island. He was able to maintain himself there only for a short time; being driven out by Mervyn, king of North Wales; nevertheless, the English ever after continued to call the place Anglesey, or the island of the Angles.

According to a curious historical document, contained in

the British Triads, this isle once formed a part of the main land. The passage is to the following purport: "The three original islands adjoining to Britain were Orkney, Man, and Wight; and afterwards the sea broke the land, so that Môn became an island; and in like manner Orkney was broken; so that there were formed a multitude of islands; and other places on the coasts of Scotland and Wales were broken by the sea, and became islands."

The book entitled *Mona Antiqua Restaurata*, was written by Rowlands, to prove that Anglesea was the metropolitan seat of druidism. An hypothesis formed from the recital of the destruction of the druids there by Suetonius Paulinus; or probably suggested by a partiality for his native place, and certainly without duly weighing its title to that pre-eminence, for if he had done so, he must have discovered such a position to be destitute of any solid foundation.

Nothing more ought to be inferred from the account of the Druids having been found by the Romans in Anglesey, than that they were overtaken in their retreat; for they always avoided the seat of war, agreeably to their principles; but here they did not expect the appearance of the enemy so suddenly, and very likely they had not the means time enough of retreating farther.

In the next place, that island does not abound with any monuments or remains, in sufficient numbers to induce a belief of its having been the permanent centre of druidism; and in truth there is not perhaps a country in all Wales, and which abounds more with such vestiges than Anglesey.

It is also to be naturally supposed that the principal place of meetings would have been fixed upon in the most convenient situation for the different states of Britain and of Gaul to attend; and free from the obstructions of large rivers, and other obstacles; whereas the isle of Anglesey was peculiarly the reverse of all this; and we must, therefore, seek elsewhere for the alma mater of the Bards, Druids, and Ovates.

The open grounds of Wiltshire then necessarily draw our attention: there we find Avebury, the grand national circle of the Britons; and there too is it said to be by the bardic Triads; and compared with this, no similar work in the country bears any comparison in grandeur and extent of design.

The glory of Mona must, therefore, be confined to its proper sphere; for it never had a more extended orbit than it has now: in druidical times it had its small provincial circles, as in the present day it has its parish churches.

The greatest curiosity which Anglesea can boast, and the chief source of its wealth, is the Paris mountain, the name of which is most probably derived from the old Welsh word "Praos," signifying "brass," which might easily be corrupted into Paris. The copper-mines in this part of the island are supposed to have been known and worked by the Romans; a pool on the top of the mountain having been distinguished, long before the present works were formed, by the name of the Mine-pool. The mine of this mountain is considerably more than a mile in circumference, and on an average 1300 men are constantly employed in it. It has the singular advantage of being worked in the open air; a circumstance which expedites the labour, and secures the health of those that are employed.

Abundance of vitriolic water is found in these works, which is so strong as instantaneously to turn whatever steel or iron is dipped into it, to the colour and appearance of copper. This water is exposed to the sun in large open troughs, and the copper quality is extracted from it by a curious process. Great quantities of sulphur are also produced, and its sublimation is carried on in various spots upon the mountain, till at last the whole is collected into some large boiling-houses, and formed into rolls of brimstone.

The copper ore is then carried down to some smelting-house, constructed in the valley below near the sea-side, where every remaining operation is performed with wonderful art and assiduity. Lead-ore, rich in silver, is also found in the same mountain; and in the north-westerly part of the island is a quarry of green marble intermixed with asbestos.

Anglesea sends two members to the imperial parliament; one for the county, and one for Beaumaris.

ANGLÉSQUEVILLE, a town of France, in the department of the Lower Seine, and chief place of a canton, in the district of Dieppe, 16 miles north from Rouen.

ANGLIA, EAST, in *History*, one of the kingdoms of the Heptarchy, founded by the Angles that landed on the eastern coasts of Britain, under 12 chiefs, the survivor of whom, Uffa, in 571, assumed the title of king of the East-Angles. This kingdom was bounded on the north by the Humber and the German Ocean, on the east by the same ocean, on the south by the kingdom of Essex, and on the west by Mercia. Its greatest length was 80, and its greatest breadth 55 miles. It contained the two counties of Norfolk and Suffolk, with part of Cambridgeshire. The chief towns were Norwich, Thetford, Ely, and Cambridge. Earpold, the fourth monarch of this kingdom, was converted to Christianity by the influence of Edwin, king of Northumberland; but his wife, who was an idolatress, soon brought him back to her religion. After his death, and the interregnum that followed, Sigebert, who had been educated in France, restored Christianity, and introduced learning among the East-Angles. Some pretend that he founded the University of Cambridge, or rather some schools in that place. Ethelbert, who was the last sovereign of this kingdom, and who received his crown from Etheldred in 790, was treacherously murdered by Offa, king of Mercia, in 792, who seized his kingdom; and from that time East-Anglia was united with Mercia.

ANGLICA, in *Entomology*, a species of *PIMELIA*, found in England very rarely. It is black, anterior part of the thorax roundish, wing-cases striated with dots, antennæ reddish at the apex. Gmelin. This is the description of Fabricius, which Gmelin adopts. It was described by Fabricius in the species *insectorum*, under the name *PIMELIA MORIO*; but in the last arrangement of insects by that author, it is placed in the genus *HELOPS*, under the specific name *Pimelia*. Gmelin makes a subdivision of the genus *pimelia*, under the name *Helops*, in which this species is included.—Also, a species of *CHRYSOMELA*, found in England. It is blue-black, wing-cases black, brassy and striated with dots; wings red. Forst. Nov. Inf.—Fabricius.

ANGLICANA, a species of *ALTIKA*, in the Fabrician arrangement, and found in England. It is in general black, except the wing-cases and shanks of the legs, which are pale. Fabricius.

ANGLICANÆ guttæ. See *GUTTÆ*.

ANGLICANUS sudor. See *SUDOR*.

ANGLICISM, a word, or phrase, in the English *IDIOM*; or a manner of speech peculiar to the English tongue.

ANGLICUS, in *Entomology*, a species of *CERAMBYX*, found in England and France. It has a spinous thorax, and two oblique yellow stripes on the wing-cases. Gmelin. This is the Fabrician description, and in that arrangement it belongs to the *RHAGIUM* genus. It is also the *leptura mordax* of Degeer, and *Stenocorus* of Geoffroy.

ANGLING is a branch of fishing; or the art of catching fish by means of a rod, to which is attached a line, a hook, and a bait. It is more generally practised for amusement than for profit, and is a sport of considerable antiquity, and followed with the greatest avidity by some persons in every rank in life. It has some eminent advan-

tages over many other rural sports; it is but little dangerous; incurs but little expence, and is productive of some profit. It is peculiarly fitted for the placid and thoughtful; nor need the gay and volatile despair of finding their attention engaged, while the more active mode of fly-fishing remains in use. Perhaps there are few pursuits that display more elegant attitudes than that of throwing the fly; nor are there but few in which the expectation is so much kept alive, with so little bodily or mental exertion, as in this delightful branch of the art. On the other hand, simple float angling has its advantages likewise; for in this the infirm and aged may partake, and the solitary or recluse may pursue the amusement, without fear of the interruptions of the busy or impertinent; here, likewise, the contemplative may combine relaxation with improvement, as few persons have a greater opportunity of studying nature in her varied garb than the angler.

The laws have ever been favourable to this pursuit, protecting the authorised fisher, and punishing the depredations of the poacher. As early as Edward I. we find, that imprisonment and triple damages, were awarded against any trespassers, if a-tainted at the suit of the party. 3 Ed. I. c. 20.

By Elizabeth it was enacted, that if any persons wrongfully take or kill fish, from any ponds, &c. kept for the purpose of angling, he or they shall be imprisoned, pay triple damages, and find security for his or their good behaviour for seven years. 5 Eliz. c. 21. The 22d and 23d Car. II. c. 29. recites, that the use of an angle, net, hair, noose, troll, or spear, or the taking of fish in any way, or the being aiding therein, without the consent of the owner, or lord of the manor, is forbidden; and that persons so offending shall, on discovery and conviction thereof, have triple damages awarded against them, to be levied by distress. And in the same statute it appears, that any justice of the peace is authorised to take and destroy every instrument used for these purposes. By the 4th and 5th W. III. c. 23. § 5, 6. no person was even to have or keep in his possession any net, angle, or other engine for the taking or destroying of fish, other than the makers and sellers thereof, and than the owners and occupiers of a river or fishery. And again, 5 Geo. III. c. 14. § 1, 2. not only persons who entered any park or other ground fenced in, wherein there was any water containing fish, and stole thereout; but those who receive and buy such fish, shall be subjected, equally with the offenders, to seven years transportation. By the same act, the taking fish unlawfully from any water, not situated in enclosed ground, is punishable by the forfeiture of 5*l.*; but by the black act, the breaking down of the head and mound of any fish-pond, was made felony without benefit of clergy.

There is no art, the practice of which appears more simple, at first view, than that of angling; yet there are few that require more nicety and precision, nor is there any for which it is more difficult to give precise rules. There is a species of acquired knowledge, amounting to a knack, that constitutes a successful angler, but which he can with difficulty impart to others.

The fish usually caught by angling are the salmon, salmon fry, salmon trout, bull trout or scurf, sewen or whiting, lattspring or shedder, mullet, smelt, barbel, flounder, eel; all which visit the salt water. Those which are likewise taken by this mode, and do not visit the salt water, are the trout, grayling, pike or jack, perch, tench, carp, chub, bream, rudd, roach, dace or darc, gudgeon, bleak or whiting, minnow, loach, &c. which several fish see under their proper heads.

These several fish require different tackle, baits of various

kinds, and some are taken in one season, while others are secured in another; of all which it is essentially necessary that the angler should be aware, as well as of the particular weather, favourable to the sport.

The tackle made use of must be carefully attended to, the principal of which is the rod. An angler intending to fish at a distance from home, should be furnished with two rods; if near home, he must still carry a spare top, or he may be much inconvenienced. When two rods are taken, it is prudent to let one be of the customary form; the other may be a strong cane, in the form of a walking-stick, which may prove useful in case of emergency. It should be so contrived as to fit the flock of the landing-net, and it will moreover be useful in fording rivers, &c. It is necessary to consider the size and nature of the fish in the choice of a rod. The larger kinds require one of considerable strength, with the addition of a reel and running line, passing through rings or eyes placed on the rod from one end to the other. A fishing-rod should be pliant, yet firm, with an easy play in the hand, and a regular bend, as though formed of one entire piece. Those which are jointed with ferrules are the best, and for large fish, as salmon, it is proper that within each ferrule there should be a male screw, to fit into a female screw, within the attached joint, by which means the rod is farther secured, and is certain of a regular play. In dry weather it is prudent to dip each joint in the water previously to introducing them to each other, and if any difficulty occurs in undoing them from the swelling of the wood, they should be held over a candle or before the fire. A rod should be kept neither too dry nor too moist; in the one case it becomes brittle, in the other it is rendered rotten. It should be hung up with a weight attached to the end, by which it is kept from warping, and it may be varnished to preserve it from worms. See *FISHING-rod*.

The angler should farther have a variety of lines of various strengths, and of colours adapted to the waters he sports in, which is a caution of the utmost moment, and not in general sufficiently attended to. Lines should be coiled or wound on a cylinder. When wound, as is usual, on a bit of split cane, or flat stick, forked at the two ends, or on long line machines, the sharp turns are apt to cut the gut or line. See *FISHING-lines*.

Hooks of various sizes are necessary, attached and unattached, with floats of cork, of quills and of porcupine spears. Spare caps, split shot, shoemaker's wax, bullets, plummets, are all likewise necessary; nor should the angler forget a clearing-ring, which is useful in disengaging the hook when entangled among weeds, or fastened to a stump. It is formed of a heavy brass or iron ring, of about two inches in diameter, with several yards of twine attached, and is made use of by passing it over the large end of the rod, and gently letting down the line to the obstruction; when by pulling the twine, the hook will be either disengaged, or it will be broken off without damage to the rest of the line, by straining it or the rod.

A disgorging is likewise among the requisites, as some fish by their eagerness swallow the hook with the bait; in which case, a piece of flat cane or wood, about six inches long, and half an inch wide, forked at the ends, and passed down the throat, removes the hook, by gently pulling the line. A landing-net will often be found necessary when a large fish is caught; those are the best whose hoops fold up, and the handle may be the walking-stick rod before mentioned. All these, with any other necessary articles, may be taken in a basket, first wrapped up in an oil skin case, when on the return, the fish in the basket will not injure them. For the articles necessary for fly fishing, see *FISHING-fly*.

It may in this place be remarked, that the prudent fisher will always be cloathed in grave colours, or at least in such as are not gaudy. For those who wade much, but which is not a prudent method, a short shooting-jacket is convenient. The experienced fisherman will always likewise provide himself with spirits, in case of falling into the water or other accidents. There are many other small articles also necessary, as twine, pliers, scissars, a penknife; and it will be found useful always to be furnished with some trimmers, to act, if the sport should not prove so good as expected.

The baits made use of must be particularly attended to by the angler, he should not only procure the best of every kind, but he must be careful to appropriate his bait to the fish he means to entrap, and likewise according to the various seasons. He must select such articles to allure most, that nature gives at that particular time in the greatest plenty. For the stomach of the fish is adapted to outward circumstances, preferring food at one time that at others it wholly rejects, and this is more particularly the case in fly fishing. An excellent mode of judging what bait is most likely to allure any particular kind of fish is, when one is caught to open it, and examine the stomach, and whatever is found there will surely be the proper bait for others. It is said, but with what truth we are not aware, that the eyes of other fish are a most excellent bait. Baits made use of in angling are of two kinds, the natural and artificial; the natural are whatever is eaten by the animal in a state of nature, as small fish, frogs, worms of most kinds, insects in great varieties, as beetles, butterflies, all the tribe of Summer flies, moths, wasps, hornets, grasshoppers, maggots of various kinds, and snails; vegetables are used with success, as wheat, barley, peas, beans, &c.: artificial baits are the forming of whatever imitates the natural food of the animal, as the making and painting small fish, and the imitating flies of various kinds, which latter forms a very considerable and intricate branch of the art. See *FLY-FISHING*. Artificial baits are likewise various compositions in the form of paste: pastes are made with dough, bread, all kinds of flour mixed with honey, suet, butter, oil, &c. and in mixing these, it is found useful to add a little cotton, tow, or lint, to make the paste more adhesive. The spawn of other fish is frequently used as a bait with success, and it is very commonly potted for this purpose.

Ground-bait is a previous method made use of by anglers to induce fish to frequent particular spots; some are in the habits of throwing this kind of bait into particular places every now and then, by which they are almost certain of finding sport among the fish who resort to this favoured place. Others only do it in the evening, or even an hour before they angle. Ground baits are of grains, barley, moistened bread, raspings, blood mixed with chopped liver, &c. In running streams a tin box is introduced, bored with holes, with a plummet to sink it, and a line to draw it back at pleasure, the worms, crawling through these holes gradually, are a great inducement to the fish to hover about the spot. All the recipes of fetid oils and other allurements are useless. See *FISHING-baits*.

The proper seasons for angling are from the Spring to the Autumn, but much depends on the kind of fish angled for; some may be caught at all times, others, as those of passage, are only to be met with at particular seasons, and others, though always confined to one piece of water, yet are nearly torpid during the Winter, and are found only in the deeps.

Weather influences fish much, and when the wind is in some points, few fish will bite. The most unfavourable is the eastern quarter; when the wind is easterly no sport is to be expected. A warm lowering day is the most favourable, with flying showers, and a slight ripple on the water. Water

slightly disturbed induces good sport; fish then do not easily distinguish the tackle, and are most voracious, having fasted while the stream was clear. Hence angling is always good when turbid water is clearing, or in the rise before it becomes too thick. Opening a mill-dam, raising a sluice, or the turning water from a meadow, induces the angler good sport, as it induces the fish to come to meet the food they expect. In waters affected by the tide, the flood is the best time for angling; but either ebbing or flowing is fit. Whirlpools, eddies, the mill-tails, sides of bridges, and under the arches, are places the anglers should not pass over.

All places not disturbed by wind or weather are proper; deep spots, covered with weeds, are much sought after by fish.

Sometimes when you are angling in any spot, and have had good sport, and the fish suddenly leave off biting; it is probable a pike or some fish of prey is at hand, in which case a minnow, placed on your hook alive, will probably take him; but the trimmers, before mentioned, are the best preventive. See *FISHING*.

ANGLING, Bladder, differs from trimmer angling, in this; instead of a cork, a bladder is made use of, by which means much diversion is occasioned; for as the bladder is drawn under the water by the force of the fish; it returns by its own want of specific gravity, which serves to strike him more forcibly and prevents his disgorging the hook.

ANGLING, Float, is made use of in contradistinction to ground angling, trimmer angling, and fly angling, &c. and consists in the use of a line longer than the rod by two or three feet, with shot not to sink the float, but to let it go under water on the slightest touch or bite of the fish. In the rivers a cork float is most proper, in standing water a quill is generally used. Perch, chud, carp, tench, barbel, and grayling, are caught in this manner.

ANGLING, Ground, is practised with a fine rod and line, without a float, and sometimes produces excellent sport. A bullet or plumb of lead is attached to the line, eight or nine inches from the baited hook, by boring a hole and passing the line through it; at the lower end placing a shot in the usual manner to prevent the plummet from slipping. This mode proves excellent for large deep-swimming wary fish; and in Winter when they confine themselves wholly to the deeps. A well-scoured worm is an excellent bait for this method, which is found very successful against the barbel. When one of these fish is observed to take the bait, as he bites strong, he should be instantly struck; the rod used for him likewise should be ringed, and furnished with a winch or reel, and twenty-five or thirty yards of line, which should have gimp to the bottom of it. But as a general rule for other fishes, the rod and line should be fine, and when the bait is observed to be taken, the angler should not strike immediately; but slacken his line, to give the fish an opportunity to swallow the hook. Trout are often taken in this manner, as well as chub; for the former, morning and evening prove the best, except in cloudy weather, or muddy water, when you may fish for him the whole day.

ANGLING, Night, is of two kinds; that wherein the angler attends in person to watch his sport; and that wherein he lays lines in different modes, as trimmers, bladders, &c. and returns in the morning to see his success. By the former method may be taken some of the finest and largest fish of most kinds; but among trout it has been found singularly successful; and it is observed, that the largest trout are caught by this means in the still clear deeps. The tackle used in this sport should be strong, and the bait striking; as the large garden-worm, snails, a minnow, &c.

Cast off at a distance, drawing your line gently against the stream, if any; not suffering it to sink, but keeping it near the surface. A float may be used or not at discretion. When the fish rises, the noise will alarm the angler, who is then to give both time and line enough to swallow the hook, when slightly striking secures him. When this method does not succeed, it will be prudent in the angler to apply a plummet, as in ground angling, and to sink his bait, for though there may be fish in that part, they may not probably be disposed to rise.

ANGLING, Sea. It is frequent for persons to go out in boats some way from shore, to angle for whiting, cod, &c. From pier heads, and the mouths of rivers likewise, it is often successfully practised: from the former are often taken haddock, cod, whiting, plaice, and small barbel, by means of a strong rod and line well leaded, with a cork float, and a large hook, baited with scoured red worms, shrimps, and gentles, a raw muscle, the inside of a small crab, whipt round the hook with a little white wool; or a bit of any other fish. If the water is very deep, the bait is permitted to pass to about mid water; if not, towards the bottom.

ANGLING, Snap, is a method made use of for those fish that easily part with the bait when taken; or for any fish, at those times when they are spawning, for being then sick, they will easily disgorge the bait before the hook has been struck, but by means of a double spring hook, which is struck with a forcible jerk the contrary way to that in which the fish runs, he is secured. The best hooks made use of for this purpose are purchased at fishing-tackle shops, being made with a double spring. The rod should be strong and the line strong likewise, and not so long as the rod, with a large cork float. The mode of baiting the snap hook is thus: make a hole with a sharp penknife in the side of the bait fish, then put the gimp that is fastened to your hook into it, and draw it out at the mouth, till the spring hook comes to the place where the incision was made; when this is done, put it into the belly of the fish, then have a piece of lead, about the size of a horse bean, though of an oval form, with a hole through it from end to end large enough for the gimp to go through, draw it down to the fish's mouth, then put it in it, and sew it up.

ANGLING, Trimmer, is an economical mode made use of either at night, or when you are fishing by other methods, by setting some trimmers at a distance, waiting the event, and continuing your angling in another part. It is particularly successful in meers, canals, large ponds, or any still water. It requires a round cork, six inches in diameter, with a groove on which to wind your line, except so much of it near the line hook, as will allow the bait to hang about mid-water; and so much of the other end as will reach to the bank or a stump; but if you have a boat, they need not be fastened at all. As soon as a fish takes the bait and runs away with it, the line unwinds itself off the trimmer without giving any check; but it will be prudent when you come to the line, to give a slight jerk to make your prey more secure.

ANGLING-fly. See **FISHING-fly.**

ANGLING-hook. See **FISHING-hook.**

ANGLING-line. See **FISHING-line.**

ANGLING-rod. See **FISHING-rod.**

ANGLO-CALVINISTS, a name given by some Ecclesiastical Historians to the members of the church of England, because their doctrinal articles are built on the system of Calvin; though some modern writers, without sufficient reason, pretend that the doctrinal system of the English church is Arminian.

The Anglo-Calvinists make one of the four branches or

divisions of Calvinism; and as such stand distinguished from the pure CALVINISTS, the PISCATORIANS, and the ARMINIANS.

ANGLOISE, in *Musie*, an English country-dance, is so called in France. tune and figure.

ANGLO-NORMANS, in *History.* See **NORMANS.**

ANGLO-SAXONS. See **SAXONS.**

ANGLO-SAXON language, that spoken by the ancient Angli, or Saxons, who settled in England.

It was thus called from the people, who were partly Angli, partly Saxon.

It is otherwise denominated simply, *Saxon.*

The Anglo-Saxon, or English-Saxon, is properly the original English; being the language which our Saxon ancestors first established in this island. It is now called Anglo-Saxon, to distinguish it from the modern or present English.

Many extravagant things have been advanced concerning the great antiquity and superior excellence of the Anglo-Saxon language, which was a dialect of the Gothic or Teutonic. According to some writers, it was the most ancient and most excellent language in the world; spoken by our first parents in Paradise, and from it they pretend to derive the names Adam, Eve, Cain, Abel, and those of all the antediluvian patriarchs. But it will be sufficient for us to say, that the Teutonic or Anglo-Saxon tongue is so ancient, that it is impossible to trace it to its origin; and that it was so excellent and copious, as to enable those who spoke it to express all their ideas with sufficient force and perspicuity. Some have said that this language consisted almost entirely of words of one syllable; but we do not find that the most ancient specimens of this language abound in any remarkable degree in monosyllables; but they contain a competent number of words, consisting of two, three, and four syllables. Some learned men have either discovered, or imagined, a very great affinity between the Greek and the Anglo-Saxon, both in their radical words, and in their general structure; and it must be acknowledged, that in some of the words which they have selected, the similarity is very observable, whilst in others it seems to be fanciful and far-fetched. With regard to their general formation and structure, a great analogy has been observed between these two languages, in the termination of the infinitive of their verbs, in the use of their articles and negatives, and in the manner of comparing their adjectives and compounding their words, and also in some other particulars. The affinity between these languages is supposed to have been occasioned by the vicinity, relationship, and commercial intercourse between the Goths and Greeks in very remote ages. The Anglo-Saxon language in this country underwent gradual changes, but from the specimens of different ages we may perceive the difference that subsisted between the Anglo-Saxon and modern English; and, at the same time, discover their great resemblance, and the gradual approaches of the former of these languages to the latter. The following is a specimen of the most ancient copy of the Lord's prayer in Saxon, with a very literal translation, said to have been written by Æadfrid, bishop of Lindisfarne, about A. D. 700.

Urin Fader thic arth in heofnas,
Our Father which art in heaven;

1. Sic gehalgad thin noma,
be hallowed thine name;

2. To eymeth thin ryc,
To come thine kingdom;

3. Sic thin willa sue is in neofnas and in eorthis,
Be thine will so is in heaven and in earth;

4. Urin

4. Urin hilef ofswiſſlie fel us to daig,
Our loaf ſuper-excellent give us to day ;
5. And forgeſe us ſeylda urna, ſue we forgeſan ſeyldgum
urum,
And forgive us debts ours, ſo we forgiven debts of
ours ;
6. And no inlead uſig in euſnung,
And not lead us into temptation ;
7. Ah gefrig uſich frum iſle,
But free us each from evil. Amen.

In this ſpecimen we ſee that there are not above three or four words altogether obſolete, and quite unintelligible to an Engliſh reader. The language ſpoken by our anceſſors above a thouſand years ago was copious, expreſſive, and muſical ; abounding very much in vowels, diphthongs, and polyſyllables, which are eſteemed the greateſt excellencies of language. The ſubſtance of it reſembles modern Engliſh, and moſt of the words are ſtill in uſe, though the ſpelling and meaning of many of them are changed. The Anglo-Saxon language was ſteadily retained by the Engliſh ; and it overcame all the efforts of the Conqueror and his ſucceſſors to ſubſtitute the Norman in its place. It forced its way at length into the courts of juſtice, from which it had been excluded almoſt 300 years ; and in 1362, an act of parliament was made, that all pleadings in all courts, both of the king and of inferior lords, ſhould be in the Engliſh tongue. The Anglo-Saxon that was ſpoken in England about 200 years after the conqueſt, was ſurpriſingly pure, and had very little mixture of Latin, French, or any other language. In the courſe of the 14th century, it gradually changed into what may be called Engliſh. This was owing to various cauſes. The animosity ſubſiſting between the poſterity of the Normans and Anglo-Saxons was extinguished, and they were conſolidated, in a great meaſure, by inter-marriages and other means, into one people. Many of the Normans, who were engaged in agriculture, trade, and manufactures, found it neceſſary to ſpeak the prevailing language of the multitude. Moreover, Chaucer, Gower, Wickliſſ, and others, compoſed voluminous works, both in proſe and verſe, in Engliſh ; and being men of learning, well acquainted with French and Latin, and ſome of them with Greek and Italian, they borrowed many words and idioms from thoſe languages, with which they adorned and enriched their own. Thus the Anglo-Saxon tongue was greatly changed, and the language of the beſt writers approached nearer to modern Engliſh than that of Robert of Glouceſter and others who flouriſhed in the 13th century. Nevertheleſs, the Engliſh of the 14th century was ſtill ſo different from that of the 18th and 19th, that a mere Engliſh reader cannot always underſtand it without a gloſſary. Beſides various dialects and different modes of pronouncing the Engliſh prevailed, at the time to which we now refer, in different diſtricts. Henry's Hiſt. vol. iv. p. 363—373, vol. viii. p. 391—395.

ANGLO-SAXON verſions of the New Teſtament are extant in manuſcript, and a copious account is given of ſeveral of them in Le Long's Bibliotheca Saera ; the beſt edition of which is that of Maſh, published at Halle, in ſix vols. 4to. 1778—1790. Some books of the Bible were tranſlated by Biſhop Eadfrid, and the goſpel of St. John by Bede ; but the tradition that King Alſred tranſlated the greateſt part of the New Teſtament is very uncertain. The whole verſion has never been printed, but the four goſpels have been published by Matthew Parker, William Liſle, and Thomas Maſh, in 1571, 1638, and 1665 ; and as they are evidently tranſlated from the old Latin, they may be of uſe in determining the readings of that verſion. Maſh's Michaelis, vol. i. p. 158.

ANGLURE, in *Geography*, a town of France, in the department of Marne, and chief place of a canton, in the diſtrict of Sezanne, three leagues ſouth-ſouth-eaſt from Sezanne.

ANGLUS, THOMAS, in *Biography*, an Engliſh Catholic prieſt, whole name was White ; was a profeſſed follower of the Ariſtotelian philoſophy in the ſeventeenth century. Being of a roving diſpoſition, he wandered through ſeveral parts of Europe. After reſiding for ſome time at Paris and at Rome, he was principal of a college at Liſbon, and ſub-principal at Douay. In England he adopted the opinions of Sir Kenelm Digby, with whom he lived, and reſiſted the efforts made by Deſ Cartes to profelyte him to his own ſyſtem. He was a man of a ſingular character, and combined ſome degree of acuteness with conſiderable obſcurity of underſtanding ; but his writings did not excite the notice and oppoſition which he expected. Some of them, however, were cenſured by the congregation of the Index Expurgatorius at Rome, in 1658 ; particularly a treatiſe entitled “*Inſtitutiones Peripateticæ ad mentem ſummi viri clariffimique Philoſophi Realmi Equites Anglæ,*” printed at Lyons in 1646. He wrote alſo “*Queſtio Theologica,*” with a view of reconciling, in the principles of Digby's peripateticism, free will with eſſential grace ; “*Inſtitutiones Theologicæ,*” and ſeveral other traſts. He is ſaid to have written, at the period of the commencement of the conteſts between Charles I. and his parliament, in favour of the doctrine of paſſive obedience ; and he ſurvived the reſtoration of Charles II. Gen. Diſt.

ANGOI, or ANGOV, in *Geography*, a province of Africa, ſituate upon the Loango coaſt, lying between Congo on the north, and Congo on the ſouth ; ſeparated from the former by the river Cabind, and from the latter by the Zaire. The inhabitants are extremely indolent, and the country little cultivated ; the coaſts abound with fiſh, and the foreſts with apes and other animals ; the chief town is Bomba-Cengoy. The chief port is Cabinda, at the mouth of a river of the ſame name, about five leagues north of Cape Palmerino, on the north ſide of the mouth of the Zaire. The bay lies commodiouſly for trade, wooding and watering on the ſea-ſhore.

ANGOKA, ANGOXA, or ANGADOXA, *iſlands* of, are iſlands of Africa in the Mozambique Gulf, and to the ſouth of Mozambique, ſituate in 16° 20' ſouth latitude. They are ſterile, but inhabited. The violent currents occaſioned by the river St. Eſprit, and which drive veſſels to the north-north-weſt againſt the ſhores of the continent, terminate near the northernmoſt of theſe iſlands.

ANGOL, or *Villa nueva de los Infantes*, a town of South America, in the province of Chili, ſituate on the arm of the river Biobia, and about 125 miles north north-eaſt of Baldivia. This is one of the moſt agreeable towns in Chili. S. lat. 37° 36'. W. long. 72° 59'.

ANGOLA, a country of Africa, anciently called Abonda, or Ambonda, and afterwards Dongo, and by the Portuguese Angola, may be divided into Angola proper, or that which was formerly a province of Congo, and the kingdom of Angola. In the firſt ſenſe, it is confined between two rivers of Danda, which parts it from that in the north, and that of Coanza on the ſouth. In the ſecond ſenſe, including its additional conqueſts, it extends along the Ethiopic coaſts from the mouth of the Danda, ſituate in S. lat. 8° 10', to that called St. Francis, in 13° 15', according to ſome ; but according to the moſt accurate geographers, quite to Cape Negro, in 16° 21'. According to this laſt extent, Angola forms a coaſt of 480 miles, but its greateſt depth eaſtwa d

eastward has not been ascertained. The whole of Angola proper abounds with mountains, interspersed with a few plains, on the sea side, and between the ridges of the mountains. The kingdom of Angola, in its most flourishing state, contained the following 17 provinces; *viz.* Chisama, under the 11th degree of south latitude, and near the mouth of the Coanza; which produces an excellent salt, and fine honey and wax; Sumbi, in the same climate with the former, admirably adapted for breeding cattle and sowing grain, if the inhabitants were not shamefully indolent; Benguela, retaining the title of a kingdom; Rimba, situate between Sumbi on the west, Lubolo on the north, Temba on the east, and Scetta on the south, and producing great quantities of grain and of fish; Scetta, south of the former, and north of Benguela, extremely mountainous, and having a rock that extends 30 miles, the top of which is cultivated and inhabited, and enjoys salubrious air and water, and in the lower parts feeding large herds of cattle: Bembea, extending on one side along the sea, and on the other dividing Angola from the other foreign states in the south, populous, and abounding with cattle; Teniba, a flat low province, full of rivers and small streams, and abounding with wild cattle and wholesome roots; Oacco, situate between the Coanza on the north-east, and Lubolo on the south-west, beautifully variegated with hills and plains, and furnished with springs and streams which render it fertile; Cabezzo, having Coanza on the north-east, and Rimba on the south-west, populous, and well stored with cattle and other provisions, and having also a mine of iron on a mountain called the Iron Mountain; the lord of Oacco was baptized in 1657, and the lord of this province in 1658, and they both induced many of their subjects to become Christians: Lubolo, situate along the southern banks of the Coanza, famed for its noble palm-trees, and yielding in great abundance oil, wine, and other produce: most of the inhabitants are Christians. The ten provinces above recounted lie on the south side of the Coanza; and within the Coanza is Loanda, an island on the coast of the kingdom of Bengo, chiefly remarkable for the capital of Angola, called San Paulo de Loanda, built upon it by the Portuguese in 1578, large and populous, and well defended: Bengo, commonly known by the name of Zenza, yielding maize and manioc root, of which the inhabitants, who are all Christians, make their bread; Danda, situate on a river of this name, dividing Angola from Congo; well watered, and fertile in grain and all kinds of fruits, but much infested with crocodiles and serpents; the inhabitants are Christians: Moseche, extending along the northern banks of the Coanza, very fertile in manioc, having mines of several metals, and possessing zimbis, or shell-money, of such exquisite beauty, that the Congoeze will give a slave for a collar of them, and so much valued as to be worn by persons of the highest rank, particularly the ladies, about their necks, arms, legs, and middle: Illamba, divided into the higher, between Bengo and Calacata; and the lower, between Danda to the north, and Bengo to the south, both fertile and tributary to the Portuguese, and the former having mines of excellent iron: Oarii, contiguous to Moseche, well watered, and distinguished by the libalto, or ancient royal residence of the kings of Angola; and Embacca, or Miembacca, situate on the north side of the river Lucala, wholly subject to the Portuguese.

The principal rivers of Angola are the Danda, Coanza, Rimba, Lutano or San Francisco, and Congo; the traffick of this country is slaves, of whom the number is very great, partly for sale and partly for domestic use. The traffick is said to have dwelled the people of their humanity, as parents

sell their children, and husbands their wives, at a very cheap rate. Polygamy is prevalent in this country; and so is also, amongst those people that are not converts to Christianity, the inhuman custom of butchering a great number of human victims at the funeral obsequies of their relations, and piling their carcases in heaps on their tombs.

Before the arrival of the Portuguese, this kingdom was subject to the kings of Congo, and governed by a deputy. One of these deputies, whose name is said to have been Ngola, or Angola, shook off the Congoeze yoke, and assumed the royal title. In this rebellion the ambition of Ngola was assisted by the Portuguese, who, discovered this coast in the year 1484. Ngola lived to a very advanced age, and was much respected; but having raised a favourite slave to the rank of lieutenant-general, he fell a sacrifice to the treachery and ambition of this viceroy, who, in order to effect his purpose and secure the succession, pretended great respect for Zunda Riangoia, one of the king's daughters. Upon his death, which happened suddenly, the princess was universally acknowledged and crowned queen of Angola. Such were the pride and jealousy of the queen, that she would not marry, because she would have no rival; and as she feared a competition on behalf of the two sons of her sister, she ordered them to court under a pretence of having them educated as her children and heirs to her crown; but upon the arrival of the eldest, she instantly caused him to be murdered. The incensed parent avenged herself by plunging a dagger in her breast; and for this act of retributive justice, the Angolans placed the crown on her head, but she immediately surrendered it to her surviving son. He was succeeded by one of his younger sons, Dambi Angola, who, upon ascending the throne, determined to put all his brethren to death. Two of them, however, escaped. Dambi was a monster of perfidy, cruelty, avarice, and lewdness; but happily for his subjects, his reign was not of long duration. Dambi was succeeded by Ngola Chilvagni, a warlike prince, who extended his conquests along the rivers Danda, Lucalla, Zanda, and Coanza, and literally tinged them with blood. Having carried his victories within eight leagues of Loanda San Paulo, he caused a tree to be planted, which he fixed as the limit of his ravages, near which the Portuguese afterwards erected a fortress, and they called the tree Isanda, or Isandaura. This ambitious and successful monarch could not forbear fancying himself to be one of the deities of the country, and exacting honours similar to those which were paid to them. It was not long, however, before he was observed to submit to the fate of other mortals. His successor, Ngingha Angola, was a cruel tyrant; but the country was soon delivered from his oppressions; and exchanged those of the father for the more severe and grievous ones of the son, Baudi Angola. The life of this oppressor was threatened by the rebellion of his aggrieved subjects; but the Portuguese defeated the rebels, and thus ensured the favour of the king, who took them into his service, and even into his council. The Portuguese general was the favourite at court, and more especially with the daughter of the sovereign. Her attachment was soon discovered by the father; and with a mind inflamed by resentment, and an apprehension that a connexion of this kind would be the means of depriving him of the crown, he formed a resolution to extirpate all the Portuguese, as a measure essential to his own security. They were, however, apprised of his designs by the young princess; and retreated into the kingdom of Congo, without interruption or molestation. The Portuguese general obtained permission of the king of Congo to sail for Lisbon, under a promise of returning with a powerful reinforcement, in order to avenge himself on the perfidious

dious sovereign of Angola. He soon obtained the desired ornament, and returned, at the head of his squadron, up the river Coanza: he landed his forces about two leagues from Massungano, a city on the banks of the Coanza, and erected a fortress for their security. The king of Angola prepared for his defence; but in an engagement between his forces and the Portuguese, he suffered a total defeat, and was merely able to escape with his life. His discontented subjects united with the victorious troops of the admiral, and after committing many dreadful ravages, executed their purpose of mauling their sovereign. Bandi Angola was succeeded by his son Ngola Bandi, who began his reign by wreaking his resentment upon all who had opposed his election. The next objects of his hatred and jealousy were the Portuguese; but they, though much inferior in number, obliged him to save his life by flying, first into the island of Chicenda, in the river Coanza, and from thence into one of the neighbouring deserts of Oaceo, where he was permitted to live among the wild beasts, without any other attendance than that which the deserts afforded him. Having been guilty of treachery in evading the fulfilment of a contract with the Portuguese governor, and dreading his resentment, he condescended to intreat his sister Zingha, whose son he had murdered, to undertake an embassy to the governor, and to procure peace with him upon any terms. In order to effect her purpose, he advised her even to embrace the Portuguese religion, if it should prove the means of facilitating her negotiations. Zingha accepted the office, and was received by the viceroy in a very respectful manner. During her stay at Loanda San Paulo, she consented to be instructed in the principles of Christianity; and professing her approbation of them, she was baptized with great solemnity in the year 1622, which was the 40th of her age. The articles, which were settled between Zingha and the governor, were ratified by her brother; and he requested a priest to be sent, in order to instruct him in the Christian religion. But he refused to be baptized, because the person who administered it was the son of one of his slaves. Ngoli Bandi delayed executing the stipulated articles, and determined to renew the war against the Portuguese. In executing this purpose, his troops were all cut off, and he was forced to swim into a little island in the Coanza, where he was pursued; and he escaped being murdered by terminating his life with a dose of poison administered to him by order of his sister Zingha. Zingha ascended the throne; and, in order to secure her power, she murdered her nephew with her own hand. The object to which her principal attention and anxiety were directed, was the deliverance of the realm from the Portuguese, who were now become numerous, wealthy, and powerful, and who were dreaded by all her subjects. With this view she commenced a war against them, and gained at first some temporary advantages. At length she was abandoned by her allies, and by her own forces, and obliged to abdicate her dominions, and to retire into some of the eastern deserts, where she remained unmolested. During her retirement, the Portuguese appointed Angola Oari, a descendant of the royal family, to be king; and before they crowned him obliged him to declare himself a Christian, and to be baptized under the name of John. His reign, however, was of short duration; death made way for his successor, Philio, the second Christian king, who prolonged his reign to the year 1660. Zingha, in the mean while, seeing herself stripped of eleven of her best provinces, and divested of her authority and tribute in the other five, renounced her religion, and devoted herself to all the idolatrous superstitious and inhuman rites of the Giagas; and she thus acquired such authority and influence, that they were ready, at the

first intimation of her will, to follow her through the most hazardous enterprises. By this influence she was able to harass the Portuguese, and to keep them in a state of perpetual terror. At length they sent two deputies to negotiate a peace with her; but their embassy was unsuccessful. Upon renewing the war before the fortress of Massungano, she lost a great number of her men, her two sisters were taken prisoners, and she herself escaped with great difficulty. Zingha had two councils, one for affairs of state and war, the other for religious concerns: the first consisted of four officers; the other of five singolos, or priests of the Giagas religion. Having convened these nine counsellors to deliberate, she proposed to them whether she should embrace the Christian faith, or continue in the religion of the Giagas. She had recourse to the usual mode of consulting the spirits of her ancestors, and the oracle's decree was such as she had foreseen. The demon declared against his own interest, and exhorted her to be reconciled to the faith from which she had apostatized. Whilst this scene was carried on, she had her troops collected, and in the speech, which she addressed to them, she confessed and bewailed her apostasy, and declared her purpose of conforming to the observance of the Christian precepts and rites. Her address was received with universal acclamation, and she considered this as a happy omen of their speedy conversion. The consequence was her reconciliation with the Portuguese, and singular zeal and activity in promoting the profession of Christianity among her subjects. She prohibited the practices of heathenism which then prevailed, under the severest penalties; and in order to encourage marriage, and thus to restrain the plurality of women, she took a husband, and published an edict against polygamy, which produced effect. She also reformed the tyranny of the lords in her dominions, who did not allow their vassals to marry without their licence, for which they paid a considerable sum. Nothing seemed to be now wanting to complete the progress of Christianity but a new supply of missionaries from Europe; in order to obtain these, she sent a letter to Rome in the year 1658, and received a favourable answer in 1662. The pope's letter was publicly announced in the new church which she had built, on the 15th of July, and she repaired to the place, with the letter suspended about her neck in a rich golden purse. After much solemn ceremony on this occasion, she gave a magnificent treat to the Portuguese resident, and to all her court, which was accompanied with the grant of largesses to her chief officers, and with a release of a number of her slaves; and terminated in her performing, at the head of her ladies of honour, who were dressed and armed in the Amazonian style, a kind of combat, in which this princess, though above 80 years of age, behaved with great vigour and activity. Whilst the queen was diligently employed in promoting the conversion of her subjects in her new capital, she was seized with a disorder which proved fatal. Father Antony attended her in her last moments, and received instructions concerning her interment; and she committed the whole conduct of her last obsequies to him; she likewise recommended, with her last breath, the propagation of Christianity, the protection and encouragement of the missionaries, and the enforcement of all the edicts against the impious rites of the Giagas. On the 17th of December, in the 82d year of her age, she closed her life and reign. The deceased queen was buried with great pomp; and, from respect to her memory, her sister Barbara, who succeeded her, was inaugurated a second and a third time, with joyful acclamations. She was a very zealous Christian, but her efforts to promote Christianity were restrained or discouraged by an ill-natured and cruel husband, whose name was

Mona Zingha, and who had been raised by the late queen from the condition of the son of a slave to the rank of her chief general. The queen's disorder and infirmities increased, and, after a short reign of about two years and a half, she closed her life A. D. 1666. Mona Zingha succeeded her, and exhibited sufficient evidence of his abhorrence of Christianity, and of his steady attachment to the abominable rites of the Giagan sect. To remove all doubt with regard to his sentiments, he caused five young ladies of the first rank to be buried alive in his wife's grave. By various methods to which he had recourse, he almost extirpated Christianity; but his career was soon stopped by Don John, the prince's Barbara's first husband, from whom she had been divorced on account of his having another wife. Upon his arrival, the usurper fled into an island in the Coanza; but he returned again, and having killed Don John, regained the throne without any further opposition. Don Francisco, however, the son of Don John, headed an army against the usurper, and Mona Zingha having been defeated and slain, Don Francisco became sole master of the empire. The following kings of Angola possessed only a shadow of royalty. The last of this description was Ngola Sedesio, who revolted, and was taken prisoner. His head was cut off, put in pickle, and sent from Loanda to Lisbon. After this it does not seem that the Portuguese government have thought it proper or perhaps safe to amuse their Angolic subjects with even a mock monarch of their own nation: but they have committed the sole command of the kingdom to the viceroy of Angola, and his council. This kingdom hath long since been erected into a bishopric, suffragan to that of St. Thomas. The manners, language, religion, dress, and ceremonies of the Angolese, are similar to those of the inhabitants of CONGO. Mod. Un. Hist. vol. xiii.

ANGOLENSIS, in *Ornithology*, a species of *FALCO*, found in Angola. It is white, cerc bluish, orbits flesh-coloured and naked, primary wing-coverts and base of the tail black. Gmelin. The size of this species is half as large again as the kite. The bill is whitish, long, and but little curved; irides straw colour; head and neck clothed with feathers, craw pendulous; head, neck, back, breast, belly, and lesser wing-coverts of a pure white; greater wing-coverts and primaries black; the last tipped with white; end of the tail white; legs dirty white and scaly. Latham, Gen. Syn. This species was first described by Mr. Pennant from specimens in the collection of R. P. Parry, Esq. He observes, that they were very restless and querulous, and more active than is usual with this sluggish race.

ANGOLENSIS, a species of *MEROPS*, of a shining golden-green colour, with a cinereous band through the eyes spotted with black; wings and wedge-shaped tail cinereous beneath; chin yellow, throat chestnut. Gmelin. This is *APIASTER ANGOLENSIS*, and *Le Guepier d'Angola* of Brisson, who figured and described it from a drawing sent to him by M. Le Poivre. It is *Le petit Guepier vert & bleu à queue étagée* of Buffon, and *Angola bee-eater* of Latham, Gen. Syn. This bird is five inches and a half in length. The bill is three quarters of an inch in length, and black; the irides red; upper part of the head, neck, body, and wings, are green glossed with gold; on each side of the head an ash-coloured stripe dotted with black, beginning at the base of the bill, and passing through the eyes; breast, belly, sides, and thighs, greenish blue, with a slight golden tinge; under-tail coverts greenish, intermixed with chestnut. The side feathers of the tail margined with cinereous; legs ash-coloured, claws black. Latham, &c.

ANGOLENSIS, a species of *LOXIA* that inhabits Angola. This is the black grosbeak of Edwards, and Angola gros-

beak of Latham. It is blue-black, belly ferruginous, and a white spot on the wing. Gmelin. Size of the common bulfinch, length five inches, bill dusky, eyes dark, ridge of the wing white, legs purplish flesh-coloured.

ANGOLENSIS, a species of *EMBERIZA*, about the size of a finch, that inhabits Angola. This is the gros-bec à poitrine couleur de feu of Salerne, whose description has been adopted by Latham and Gmelin. It is black, crown of the head and neck yellow, and tail long. It is the Angola bunting of the Gen. Syn. The bill is short like that of the bulfinch, and the breast is fire-coloured.

ANGOLENSIS, a species of *TRINGILLA*: above it is brownish ash colour, beneath orange, front of the head black, round the eyes, and on each side of the throat white, rump pale yellow, wings and tail brown. Gmelin. This kind inhabits Angola, where the male bears the name of uegral, or tobaque; the female benguelinha; or at least it is conjectured by Edwards and Latham, that these are the two sexes of the same species. It is the size of the common linnet. The supposed male has the bill brown, upper part of the head, neck, and body brownish ash-colour, each feather darkest on the middle; the greater wing-coverts and quills brown, edged with yellow; tail brown edged with grey; legs flesh-coloured. The female has the upper parts rufous brown, sides of the head pale rufous, near the base of the bill a brown mark, which passes towards the hind head; from the breast to the vent pale rufous, spotted with brown. This is the *Vengoline* of Buffon and the Hon. D. Barrington. Phil. Trans. *Linaria Angolensis* of Brisson, and *Angola finch* of Latham. The last author has given a new specific character to this bird in the Ind. Orn. It is ash-coloured brown, with brown spots; beneath chestnut; front of the head and chin black; cheeks and throat spotted with white; rump pale yellow.

ANGOLI, a name given by Buffon and others to the Madras gallinule, *FULICA MADERASPATANA* of Gmelin. See *MADERASPATANA*.

ANGON, in the *Ancient Writers on Mechanics*, denotes a military engine of the bow-kind. Others again speak of it as a kind of javelin used by the French, the iron head of which resembled a fleur de lys. It is the opinion of some writers, that the arms of France are not fleur de lys, but the iron points of the angon, or javelin of the ancient French.

ANGONÆUS, in *Anatomy*, a name given by Riolanus and others to a muscle called by the generality of other writers *anconeus*, and *cubitalis minor*.

ANGOR is used by some physicians to denote a shrinking inwards of the native heat of the body, or its retiring to the centre; upon which ensues a pain, and palpitation of the heart, attended with sadness and melancholy.

In this sense angor amounts to much the same with what the Greeks call *agonia*.

The angor is reputed a bad symptom, when it happens in the beginning of an acute fever.

ANGORA, ANGOURA, ANGOURI, and formerly ANCYRA, in *Geography*, a town of Natolia, in Asiatic Turkey. This is an agreeable city, in a lofty situation, and has many vestiges of its ancient magnificence and splendour. The castle has a triple inclosure, and the walls are formed of large pieces of white marble, and a stone resembling porphyry. The number of inhabitants is estimated at 80,000. The trade is chiefly in yarn, of which our shalloons are made, and in their own manufacture of Angora stuffs, made principally of the fine hair of a particular breed of goats, which, like that of the cats, occurs in no other country. The soil of the adjacent country is a fine red marl. The bashaw of Angora has about 30 purfes annually; and here are about 300 janizaries,

under the command of a sultan. The Armenians have seven churches, besides a monastery; and the Greeks two. N. lat. $39^{\circ} 30'$. E. long. $32^{\circ} 5'$.

Angora is famous for the battle between Tamerlane and Bajazet, A. D. 1402, which has immortalized the glory of the former, and the shame of the latter.

ANGOT, a province or kingdom of ABYSSINIA, formerly rich and fertile, but almost ruined by the Gallas, who are now in possession of it.

ANGOTE, a town of Africa, in the kingdom of Congo, and province of Pango.

ANGOULEME, a city of France, and capital of the department of Charente; before the revolution, the capital of Angoumois, and see of a bishop, suffragan of Bourdeaux. It is seated on a rock, at the foot of which runs the river Charente. The inhabitants are said to be about 8000, and their manufacture is paper. N. lat. $45^{\circ} 3' 3''$. E. long. $8^{\circ} 45'$.

ANGOUMOIS, a district of France, before the revolution a province, bounded on the north by Poitou, on the east by Limosin and Marche, on the south by Perigord, and on the west by Saintonge. It is between 15 and 18 French leagues in length, and about 16 in breadth. The principal rivers are the Charente and Touvre; there are many iron mines in this province, and the land produces wheat, rye, barley, oats, saffron, wine, and all kinds of fruits.

ANGOUSTRINA, a town of France, in the department of the Eastern Pyrenées, and chief place in the district of Prades, on the frontiers of Spain; four miles north-east of Puyarda, and eight west of Mont Louis.

ANGOY. See GOY and LOANGO.

ANGRA, a sea-port town of Terceira, one of the Azores, the capital of that island and of all the Azores, and the residence of the governor. It is situated in a bay between two mountains on the south side of the island, and it is equally secure against storms and the assault of an enemy. On these hills are two pillars, and a watchman who gives signals of ships approaching the island by means of flags. The town is said to have received its name from Angra, a creek, bay, or station for shipping; this bay being the only convenient harbour in all the Azores. It opens from the east to the south-west, is not above four cables length in breadth, and, according to Frezier, it has not above two cables of good bottom. In summer, ships may ride here with safety; but when the storms of winter come on, the approach of which is indicated by clouds hanging on the Pico, a high mountain in another of the Azores, and the fluttering and chirping of flocks of birds round the city, ships should put off with all expedition to sea. The town is well built and populous, and is an episcopal see, under the jurisdiction of the archbishop of Lisbon. It has five parishes, a cathedral, four monasteries, and as many nunneries, besides an inquisition and a bishop's court, which extends its jurisdiction over all the Azores, Flores, and Corvo. The town is surrounded by a wall and dry ditch, and defended by a strong castle, in which king Alphonso was imprisoned by his brother Peter, in 1668. The houses have a handsome external appearance, but they are indifferently furnished, for which the Portuguese allege, as a plea for their poverty, that warm furniture would be inconvenient in so hot a climate. N. lat. $38^{\circ} 39'$. W. long. $27^{\circ} 12' 15''$. At Angra are kept the royal magazines for anchors, cables, sails, and all sorts of stores, for the royal navy or for merchantmen in distress. All maritime affairs are under the inspection of an officer called "desfambargador," who hath subordinate officers and pilots for conducting ships into the harbour, and the proper watering places. The English, French, and Dutch, have each a consul here, though their commerce

with the Azores is not very considerable. Mod. Un. Hist. vol. xii. p. 55, &c.

ANGRA DE LOS REYES, a town of South America, in the captainship of Rio de Janeiro in Brazil, subject to the Portuguese, about 36 miles from Rio de Janeiro. It is situate upon the coast, in a small bay, whence it has its name: being, in English, King's Bay. It has two churches, a monastery, a small guard-house of about 20 soldiers. Its chief produce is fish. S. lat. $22^{\circ} 28'$. W. long. $17^{\circ} 41'$.

ANGRA Bay, or Great Bay, lies on the western coast of Africa, to the north of Cape Blanco, in N. lat. $20^{\circ} 55'$, and W. long. $17^{\circ} 10'$. This is the most westerly coast of Africa.

ANGRA River is also on the coast of Africa, in N. lat. 1° , and E. long. $9^{\circ} 35'$, having at its mouth the island of Korisco, about five leagues south of Cape St. John, which is its northerly extreme point, as Cape Etluras, seven leagues from Cape St. John, is the southerly point.

ANGRA River is also on the same coast, and on the south side of the equator, and of the river Gabon.

ANGRA *Island* lies in the Persian gulf, and has a spacious harbour at Burka; but it is uninhabited.

ANGRAB, a river of Abyssinia, formed by several streams in the provinces of Tcherkin and Sire, and which, by its confluence with the Gaangua, forms the Tacazze.

ANGRECUM, in *Botany*. See EPIDENDRUM.

ANGRIVARI, in *Ancient Geography*, a people of Germany, supposed by some to have been the same with the Angerii of the middle age; situate, according to Tacitus (Annal ii. c. 8.), between the Wefer and the Ems, and extending eastward beyond the Wefer as far as the Cheruffi, on which side they raised a rampart; with the Tubantes on the Ems to the south; to the west the Ems and the confines of the Brueteri, and to the north between the Chamave and Ansbarii. They are placed by Ptolemy between the Cauchi and Catti, or Suevi. Their territory is supposed now to contain a part of the country of Schaumburg, half of the bishopric or principality of Minden; and to the south, the greatest part of the bishopric of Osnaburg, the north part of the county of Techenburg, and a part of the county of Ravensberg. Some trace of the name is observable in a small town of Ravenberg, called Engern.

ANGROGNA, a parish of Piedmont, watered by a river of the same name, and producing excellent fruits, particularly chestnuts. This is a valley surrounded by high mountains, to which there is access only by two passes. At a village called La Tour, the valley preachers used to officiate, and qualify young men for the ministry, without disturbance, before the reformation.

ANGRUS, a river of Illyria, which, according to Herodotus, ran towards the north-east, passed along the plain of the Triballi, and discharged itself into the Brongus, which joined the Illyr.

ANGSANA, or ANGSANA, in *Botany*, names by which some authors have described the *draco arbor* or *dragon-tree*; one of the trees said to afford the sanguis draconis, or dragon's blood of the shops.

It is esteemed an astringent, and an excellent remedy in the apthæ.

ANGUADA Cape, in *Geography*, is the most westerly point of Porto Rico Island in the West Indies, and is distant from Cape Sumana, or the nearest land at the north-east of Hispaniola island, 22 leagues.

ANGUEAH, a considerable river of Abyssinia, not far from Kellah, in N. lat. $14^{\circ} 24' 34''$. Where Mr. Bruce crossed it, it was 50 feet broad and three deep, and the largest river which he had seen in Habesh. It was perfectly clear, and ran rapidly over a bed of pebbles. It was full of small fish,

fish, esteemed excellent. It has its name from a beautiful tree which covers both its banks, and which, by the colour of its bark and richness of its flowers, is a great ornament to it. Bruce's Trav. vol. iii. p. 113.

ANGUEG, in *Zoology*, a name given in Abyssinia to the water-lizard, or caudiverbera of the Italians.

ANGUILLA, in *Ichthyology*, a name by which some former naturalists distinguished the species of *ATHERINA HESPETUS* of LINNÆUS, a small fish that inhabits the shores of the Mediterranean sea. *Pisciculus anguilla Venetiis dictus; forte hespetus Rondeletii, vel atherina ejusdem.* Wil. Ich.

ANGUIENSIS, in *Ancient Geography*, a place of Africa, situate, according to Haradin, in Numidia.

ANGUIER, FRANCIS and MICHAEL, in *Biography*, sculptors, were born at Eu in Normandy. The elder, Francis, was born in 1604; and having been brought up under Guillin, a sculptor at Paris, was sent for to England, and there acquired a sufficiency to enable him to visit Italy for improvement. After having spent two years in Italy, he returned to France, and was made keeper of Antiques by Louis XIII., and had apartments in the Louvre. He was employed in several celebrated works, chiefly of the monumental kind, such as the tomb of James Souvre, at St. J. in de Lateran; and the mausoleum of the last duke de Montmorency, at Moulins. He died at Paris in 1669.

Michael was born in 1612, became an artist at 15, and employed his first savings under Guillin, at Paris, for visiting Italy, where he entered into the school of the famous Algardi at Rome. After 10 years he returned to France, and assisted his brother in executing the monument of Montmorency. His reputation was great, and he was employed, according to the taste of the times, in many works of decoration. He adorned the apartment of queen Anne of Austria, in the old Louvre, with many allegorical figures; he executed the altar-piece of the church of St. Denis de la Chartre, and the rich sculpture of the gate of St. Denis. His last work was a marble crucifix over the high altar of the church of Sorboane. He died in 1686. Gen. Biog.

ANGUILLARA, in *Geography*, a town of Italy, belonging to the Venetian States in the Paduan, 12 miles south of Padua.

ANGUILHAS, *Cape d'*, lies to the east of the Cape of Good Hope, on the African coast in the Indian Ocean, in S. lat. 34° 52', and E. long. 20° 6'.

ANGUILLA, or *Snake Island*, so called from its snake-like form, is the first of the smaller Antilles, and the most northerly of all the Carribee islands possessed by Britain in the West Indies. On the south side it has good anchorage and a gentle current, but on the east side it is inaccessible on account of flats, shoals, and small islands. It was discovered and settled by the English in 1650; but the first cultivators were molested by rapacious invaders, particularly French pirates; and, after the revolution, a party of wild Irish. New settlers from Barbadoes and other English Caribbees, knowing the value of the soil, removed to Anguilla, and carried on a lucrative trade, without any government, civil or ecclesiastical. In 1745, a small body of their militia resisted the attack of a considerable number of French, and obliged them to retire with great loss. The inhabitants subsist mostly by farming, planting India corn, and other kinds of husbandry. The climate is healthy, and the people strong and vigorous. The exports, in 1770, amounted, in sugar, rum, and cotton, to near 6000l. The island is 10 leagues in length, and three in breadth; and is situated 25 leagues north-west of Barbuda, and 15 from St. Christopher's. N. lat. 18° 15'. W. long. 62° 57'.

ANGUILLA is also a bank island, and east of the great Ba-

hama bank, and north of the island of Cuba. N. lat. 23° 22'. W. long. 78° 47'.

ANGUILLA, in *Ichthyology*, a species of *MURENA*. This is the common eel, having the lower jaw longest, and the body of one colour. Linn. & Gmel. The dorsal fin is said to contain 1000 rays, pectoral fin 19, and the anal fin 100. See EEL.

ANGUILLA INDICA, in *Natural History*, a name given by Willoughby to a species of *TRICHIURUS* in the Linnæan arrangement of fishes. See *TRICHIURUS INDICUS*.

ANGUILLÆ, a species of *TÆNIA* that inhabits the intestines of eels. The head is sessile, distinct, and thickest, joints oblong, with irregular protuberances, and two mouths on one side. The body consists of about 600 joints, and is sometimes four feet in length, front of the head truncated, the first eight joints longest. The upper joints of the body are nearly square, and twice as long as they are broad, the lower ones eight times as broad as they are long. Gmelin, Redi, &c. This is *tænia claviceps* of GOEZE.

ANGUILLARA, in *Geography*, a town of Italy, in the estates of the church and province of Patrimonio; situate on a small river near the lake of Bracciano, 12 miles north-west from Rome.

ANGUILLARA, GIOVANNANDRA DELL', in *Biography*, an eminent Italian poet, was born of a mean family at Sutri, in 1517. From Rome, where he was engaged with a printer, and whom he left on account of an intrigue with his wife, he went to Venice, and formed an intimate acquaintance with a bookseller, who bought his translation of Ovid's *Metamorphoses*, which contributed to his reputation. It was first published at Paris, and dedicated to Henry II.; and his fame, in consequence of this work, was probably the cause of the pomp with which his tragedy of *Cædipus* was acted at Vicenza, in 1565, where Palladio was employed in erecting a magnificent temporary theatre for the purpose. He undertook a translation of Virgil's *Æneid*, but never finished it. By various other poems, satirical and burlesque, he obtained a precarious subsistence. He died at Rome in indigent circumstances, and in consequence of his dissolute mode of living. Gen. Biog.

ANGUILLARA, LEWIS, an Italian botanist of the 16th century, travelled over the greater part of Greece, the islands of Cyprus and of Candia, over Switzerland, &c. Returning to Italy, he was made director of the botanical garden at Padua, in which post he continued to the time of his death, in 1550. He left behind him a work on the knowledge of simples, in Italian, which was published by Murinelli, at Venice, in 4to. in 1561. It was afterwards translated into Latin by C. Bauhine, and printed at Basle in 1593, in 8vo. Haller says (*Bib. Botan.*), Anguillara was the first Italian who had travelled to acquire a knowledge of plants, in which he attained so much perfection as to be able to correct the works of Dioscorides and of Matthioli. "Eximius auctor, si que recte viderat, paulo fusius docuisset." This deficiency is supplied by Bauhine, in his edition of his works.

ANGUILLARIA, in *Botany*. See *ARDISIA*. Anguillaria is made a distinct genus by Gmelin, though his *ang. bahamensis* and *ang. excelsa* are the same plant. Linn. *Transf.* vol. iii. p. 22.

ANGUILLARIS, in *Ichthyology*, a species of *SILURUS* that inhabits the Nile, and is described by Hasselq. and Russel. Aleppo. The dorsal fin is single, and consists of 70 rays, and it has eight beards. Gmelin. Body above the lateral line marbled with black and grey, beneath reddish grey. It has two beards on the upper lip, four on the lower lip, and one at each angle of the mouth. The rays of the gill membrane are nine, dorsal fins 70, and sometimes 72, pectoral fins eight, ventral fins seven, anal fin 50, and caudal fin 20.

ANGUILLARIS, a species of GONIUS, having a single dorsal fin and red tail. Gmelin. This kind inhabits China, is fat, and slippery like an eel. The teeth are exerted out of the mouth, the fins are all red, dorsal and anal fin unite with the tail, pectoral fins very small and roundish, and the skin somewhat transparent.

ANGUILLE, Bay and Cape, in Geography, lie on the west side of Newfoundland island in the gulf of St. Lawrence, about 10 leagues north from Cape Ray, the south-western extremity of the island. N. lat. $47^{\circ} 55'$. W. long. $59^{\circ} 11'$.

ANGUILLE is also a bay on the north-north-east side of the Island of St. John's, in the gulf of St. Lawrence, opposite to Magdalen isles, having St. Peter's harbour on the east, and Port Chimene on the north-west.

ANGUILLIFORM, ANGUILLIFORMIS, in Zoology, having the shape or appearance of an eel. The word is derived from *anguilla*, an eel, and *forma*, shape or appearance; and was formerly applied by naturalists to a number of different fishes that are soft, lubricous, and destitute of very apparent scales. Several of those, as the sea serpent, conger, &c. are now included with the eel (in the Linnaean arrangement), in the genus *muræna*, and the others are chiefly referred to that of *anmodytes*, *ophidium*, or *petromyzon*.

ANGUILLULA, in Natural History, a species of VIBRIO found in vegetable sediment, four parts, infusions of blighted wheat, and other grain, &c. and known generally by the name of paste-eel. It is of equal size throughout, and somewhat rigid. Gmelin. See EELS *microscopic*.

ANGUINA, in Botany. See CALLA and TRICOSANTHES.

ANGUINA, in Conchology, a species of SERPULA that inhabits the Indian Ocean. The shell is roundish and somewhat spiral, with a longitudinal articulated fissure. It varies considerably in form, being either round or angular, straight or waved, smooth or rough, and the articulations of the fissure often obsolete. The SERPULA MUZICATA of Born is a variety of this species. Gmelin.

ANGUINA, in Entomology, a species of phalæna, of the BOMBYX family, found in North America by Abbot, and described by Dr. Smith. The anterior wings are clouded, base and transverse streak pale; a whitish spot with a double black pupil near the apex.

ANGUINA, in Natural History, a species of SERTULARIA, called the snake coralline by Ellis. It is destitute of denticles, and the stem is simple, with clavated obtuse branches, each of which has a lateral aperture. Gmelin, Ellis, &c. This kind inhabits the Mediterranean Sea; it is white, soft, and flexible, and adheres to other marine substances.

ANGUINA, in Zoology, a species of LACERTA, having a verticillated tail which is stiff at the extremity, striated body, and subulated feet without toes. This is *vermis septentiformis ex Africa* of Seba, and *chalcides pinnata* of Laur. The head is rather depressed and small, ears transverse, body round and verticillated, the scales on each side longitudinally furrowed; tail twice as long as the body, sharply pointed at the end; legs six, anterior ones slender, body covered with subulate scales. Gmelin. The general description of this creature does not clearly correspond with those of the authors quoted by Linnæus and Gmelin. The figure in Seba is about 15 inches in length, of which the body is four inches: the whole is covered with ovate scales, is brown above, with dusky longitudinal stripes, yellowish beneath, and ash coloured on the sides. It is common in muddy places about the Cape of Good Hope.

ANGUINEAL *hyperbola*. See HYPERBOLA and CURVE.

ANGUINEI *versus*, in Poetry, those which may be read backwards.

These are otherwise called recurrent verses. Such, *e. g.* are,

“Optimum jus, lex amica, vox differta:
Differta vox, amica lex, jus optimum.”

ANGUINUM, ovum, among *Ancient Writers*, denotes an extraordinary sort of an egg, said to be produced by the joint *saliva* of a cluster of snakes interwoven and twined together; and when it was found, it was raised up in the air by the hissing of these serpents; and was to be caught in a clean white cloth before it fell to the ground. The person who caught it was obliged to mount a swift horse, and to ride away at full speed to escape from the serpents, who pursued him with great rage until they were stopped by some tree.

The opinions which the Druids, both of Gaul and Britain, entertained of their anguinum, or serpent's egg, both as a charm and a medicine, are in a very high degree romantic and extravagant. The method of ascertaining the genuineness of this was no less extraordinary. It was to be encased in gold, and thrown into a river; and if it was genuine, it would swim against the stream. “I have seen,” says Pliny (H. N. l. xxi. c. 3.), “that egg; it is about the bigness of a moderate apple; its shell is a cartilaginous incrustation, full of little cavities, such as are on the legs of the polypus; it is the insignia or badge of distinction of the Druids.” Among other wonderful virtues ascribed to this egg, it was represented as particularly efficacious for rendering those who carried it about with them, superior to their adversaries in all disputes, and for procuring on their behalf the favour and friendship of great men. We have the following account of this egg, in the part of a Druid, in Mason's “Caractacus:”

—————“But tell me yet,
From the grot of charms and spells,
Where our matron sister dwells,
Brennus, has thy holy hand
Safely brought the Druid wand;
And the potent adder-stone,
Gendered 'fore the autumnal moon,
When in undulating twine,
The foaming snakes prolific join;
When they hiss, and when they bear
Their wondrous egg aloof in air;
Thence, before to earth it fall,
The Druid in his hallow'd pall
Receives the prize,
And instant flies,
Follow'd by the envenom'd brood,
Till he crosses the crystal flood?”

Some have thought that the serpent's egg was a mere fraud contrived by the Druids to delude the vulgar, who purchased these marvellous eggs at a high price. Others have imagined that the story of the anguinum was an emblematical representation of the doctrine of the Druids concerning the creation of the world. The serpents, they say, represent the divine wisdom forming the universe, and the eggs the emblem of the world formed by that wisdom. It may be added, that the virtue ascribed to the anguinum of giving those who possessed it a superiority over others, and endearing them to great men, may perhaps be intended to represent the natural effects of learning and philosophy.

Our modern Druideesses, says Mr. Pennant, have an opinion of the virtues of the ovum anguinum, “glain neidr,” as the Welch call it, or the “adder-gum;” according to the modern philosophers, similar, though inferior, to that which the ancients entertained concerning it: they merely apply it to assist in cutting children's teeth, to cure chin-cough, or

to cure an ague. These eggs were, in reality, beads of glass, to which the Druids annexed a charm; and they were of a rich blue colour, either plain or streaked.

ANGUINUS, in *Entomology*, a species of CURCULIO that inhabits Germany. It is cylindrical, grey, and lined with brown. Gmelin. This insect somewhat resembles curculio paraplecticus, the legs and underside of the body are grey, dotted with black, the beak much bent, wing cases marked longitudinally with a double row of minute excavated points.

ANGUIS, in *Zoology*, the name of a genus of serpents in the Linnæan arrangement, which is distinguished from the rest by having the belly and under part of the tail covered with scales like those on the other parts of the body. Gmelin. The species, according to Gmelin, are, striatus, mceagris, colubrinus, miliaris, jaculus, maculatus, reticulatus, cerastes, natus, lumbricalis, laticauda, scytale, cryx, fragilis, ventralis, platurus, lineatus, clavicus, annulatus, scutatus, corallinus, rufus, hepaticus, and tessellatus; which see respectively.

ANGUIS BIPES, in *Natural History*, the Linnæan name of a creature in the class AMPHIBIA, inserted in the *twelfth edition* of the *Systema Natura*, but referred by Gmelin from the genus ANGUIS to that of LACERTA. The latter author also refers ANGUIS QUADRUPES of Linnæus to the same genus. See LACERTA SERPENS.

ANGUIS, in *Conchology*, a species of TURBO figured in Martyn's Univ. Conch. It is striated transversely, green striped with black; pearly within. Gmelin.

ANGUIS Æsculapii, see COLUBER.

ANGUIUM lapis, a name given to a supposed stone in Germany, which is of a cylindrical figure, and has a cavity capable of admitting a finger, and of a yellow colour, with a great many variegations. The vulgar call it *duchaneck*, and have an idle opinion of its having its origin in some manner from a serpent-ant. De Boot, who had seen many of them, declares them to be fictitious, and made of glass tinged with two or three colours. These were probably of the same kind, and used for the same purposes, with the ANGUINUM ovum.

ANGULAR, something that relates to, or hath angles. Angular objects at a distance appear round; the little inequalities disappearing at a much less distance than the bulk of the body.

ANGULAR Motion, in *Mechanics* and *Astronomy*. is the motion of a body which describes an angle, or which moves circularly round a point. Thus, a pendulum has an angular motion about its centre of motion; and the planets have an angular motion about the sun. Two moveable points M and O (*Plate I. Mechanics, fig. 3.*), one of which describes the arc MN, and the other, in the same time, the arc OP, have an equal, or the same, angular motion; although the real motion of the point O be much greater than that of the point M, viz. as the arc OP is greater than the arc MN. The angular motions of revolving bodies, as of the planets about the sun, are reciprocally proportional to their periodic times; and they are also as their real or absolute motions directly, and as their radii of motion inversely.

ANGULAR motion is also a kind of motion composed of a right-lined and circular motion, or in which the moveable body slides and revolves at the same time. Such is the motion of the wheel of a coach, or other vehicle. The phenomena. &c. of such motion, see accounted for under the article ROTA Aristotelica.

ANGULAR, acute, *scision*. See ACUTE.

ANGULAR, capital, see CAPITAL.

ANGULAR column, see COLUMN.

ANGULAR niche, see NICHE.

ANGULAR, *Angulatus*, in *Botany*, denotes a stem, &c. having edges or corners, opposed to cylindrical. A stem may have one, two, three, four, or more angles or corners. The white archangel hath four. The flower-de-luce, or flag, has an angular capsule.

ANGULARIS *Scapule*, in *Anatomy*, a name given by Winslow, and some others, to the muscle of the shoulder generally called the LEVATOR *scapule*.

ANGULATA, in *Zoology*, a small species of LACERTA, first discovered by Rolander in America. The body is brown above, and covered with carinated scales; those on the belly are smooth; under the throat are two large rounded scales; the head is naked, with various, unequal, elevated wrinkles, which appear truncated at the collar, or behind the head; tail very angular, and half as long again as the body: the specific character of this snake is, tail very long and hexagonal, with carinated and mucronated scales. Gmelin.

ANGULATA, in *Entomology*, a species of HESPA, that inhabits Cayenne. The antennæ are fusiform, body yellow; head, dorsal line on the thorax, and waved, margin of the wing-cases black. Fabricius and Gmelin.

ANGULATA, a species of PIMELIA, that inhabits Egypt. The wing-cases are spinous, the lateral line elevated and serrated. Fabricius. This is the tenebrio spinosus of Forsk. and tenebrio asperimus of Pall. This insect is black and without wings, and the wing-cases not divided; the thorax is rough, with three rows of spines, and intermediate rows of tuberculated ones, the lateral line deeply serrated.

ANGULATA, a species of CANTHARIS, found in the island of Amsterdam, South Seas. It is of a testaceous colour, thorax angulated and spinous, end of the wing-cases blue, antennæ and legs black. Fabricius.

ANGULATA, a species of PHALÆNA, of the *bombyx* tribe. The wings are incumbent, angulated, testaceous-brown colour, with numerous black dots, and two obsolete bars of ash colour. Fabricius. This must not be confounded with the BOMBYX ANGULATA of Gmelin, N^o 475, whose description is taken from *bombyx*, N^o 26, of the species insectorum of Fabricius, and should have been written *argulata*, instead of *angulata*.

ANGULATA is also a species of PHALÆNA, of the *geometra* tribe. The wings are angular and tailed; it is varied with large and small grey streaks, and a black dot near the tail. Fabricius and Gmelin. This is a small insect, and inhabits Africa. Gmelin has also another species of PHALÆNA, of the *geometra* tribe, under the name of angulata; the wings are angular and pale. It inhabits Europe. Gmel. 1298.

ANGULATA, a species of ARANEA. It is ovate, front and sides acutely angulated; centre of the thorax excavated. This is a European insect, lives in trees, and spins a perpendicular web.

ANGULATA, in *Conchology*, a species of TELLINA that inhabits the Indian ocean. This shell is somewhat ovate, and marked with transverse recurved ribs, anterior part angulated, and no lateral teeth. Gmelin. This is about an inch and a half in length, and two inches in breadth. It differs from tellina virgata, which it in some respects resembles, in being less oblong, entirely white, the anterior angle seated more outwardly, and the aperture behind oval. Gmel.

ANGULATA, a species of ANOMIA. The sides of the base compressed, anterior part plaited, three teeth in the middle. Gmelin. Found in a fossil state; this shell is smooth, and varies in the number of plaits on the anterior part.

ANGULATUS, in *Zoology*, a species of COLUBER, of a brownish colour, with dark or blackish, broad, lanceolate, transverse

transverse bands meeting alternately beneath. The Linnæan specific character is, scales of the belly one hundred and seventeen, and those of the tail seventy. The length of this snake is above two feet, head rather small, and covered with large scales; the scales of the body disposed in about nineteen longitudinal rows, and each scale rather strongly carinated: its specific name is taken from the angular appearance of the body. This kind is a native of Asia.

Dr. Shaw having observed, that the number of abdominal and subcaudal scales vary considerably in different specimens, has assigned this species a new specific character, *subfusus*, taking transversis lanceolatis nigricantibus, subtus alternatim concurrentibus. Gen. Zool.

ANGULATUS, in *Entomology*, a species of ATTELATUS, that inhabits Cayenne. It is ferruginous, wing-cases angulated, black in the disk. Fabricius. Antennæ black, ferruginous at the base; thorax ferruginous, with a black spot at the base.

ANGULATUS, a species of CARABUS, of the apterous kind. It is black and hairy, thorax guttered, wing-cases furrowed, with two interrupted yellow stripes. Inhabits Coromandel. Fabricius.

ANGULARUS, a species of GRILLUS, that inhabits Germany. It is yellowish, abdomen brown, segments of the joints obtuse and angular. Fabricius.

ANGULATUS, a species of CANCER, with two spines on each side of the thorax, fore-claws very long. Gmelin.

ANGULOSA, in *Conchology*, a species of TELLINA, that inhabits America. This shell is oval, rather flat, and transversely striated: one end inflected and angulated; first tooth of the hinge bifid, lateral ones remote. Gmelin and Chemnitz.

ANGULOSA is likewise a species of ARCA, that inhabits the shores of the African and American ocean. It is ventricose, longitudinally marked with striæ and fine lines, and has one side angulated; the beaks are contiguous, hinge arched. Gmelin. Its general colour is brown, with a few spots.

ANGULOSA is also the specific name of a PATELLA, figured by Lister and Martin. It is rather oval, white, thin, striated, and varied with spots and dots of red; margin octangular. Gmelin. An orange-coloured shell, with elevated white striæ and dots, bottom yellow, central orange ring and white margin; figured by Martini; is supposed to be a variety of this species. Its native country is not ascertained.

ANGULOSA, in *Natural History*, a species of MADREPORA, that inhabits the American seas. It is short, thick, cellular, smooth, and white: the specific character is, dichotomous, falcigiate, with terminal, turbinated, angular stars; the lamella or gills dentated. Pallas and Gmelin.

ANGULOSUS, in *Conchology*, a species of ECHINUS. It is hemispherical, with granulated spaces, and double series of warts, the larger ones divided by serrated sutures down the middle; three series of pores upon the avenues. The native country is unknown; it is of a cinereous grey tinged with violet. Seba, Klein, Gmelin, &c.

ANGULUS, in *Natural History*, a species of TRICHONA, described by Müller, Hist. Verm. It is angular, with a hairy tip. Gmelin. This kind is found in infusions of hay; it is long and convex, and is divided by an articulation into two parts, of equal breadth, but differing in length, the fore part shorter than the hind part, the apex furnished with short waving hair, indistinct molecules within, and no hair on the posterior part.

ANGURIA, in *Geography*. See ANGORA.

ANGURIA, in *Botany*, a genus of the *monocotyledon*

(*dianthis monogyria*, Gmelin), and natural order of *cucurbitaceæ*. Its characters are, that it has male and female flowers; the calyx of the male is monophyllous, quinquefid, swelling at the base, divisions lanceolate and short; the corolla is pentapetalous, spreading, growing to the border of the calyx; the stamina have two filaments, opposite, inserted into the calyx, anther creeping up and down; the calyx and corolla of the female as in the male; the filaments of the stamina as in the male, but 10 anthers; the pistillum has an inferior oblong germ, style semibifid, and stigmas bifid and acute; the pericarpium a pome, oblong, quadrangular, and bilocular; the seeds are very many, oval, compressed, and nestling.

There are three species: 1. *A. trilobata*, with three-lobed leaves; a native of Cathayana in South America, where it flowers in June. 2. *A. pedata*, with leaves pedate and serrate; a perennial plant, climbing trees, by means of long tendrils, to the height of 20 feet; a native of St. Domingo; flowering in September, and fruit ripening in December. 3. *A. trifoliata*, with leaves ternate and quite entire; a native of St. Domingo; differing from the former in having the leaves quite entire and narrower, and several fruits collected together.

ANGURIA. See CUCURBITA.

ANGUS, in *Geography*, a district of the county of Forfar in Scotland, formerly an earldom belonging to the Douglasses, now extinct.

ANGUSTA, in *Entomology*, a species of MANTIS, that inhabits the island of Antigua. It is greenish, tail bifurcated, antennæ as long as the body, and filiform. Gmelin.

ANGUSTA, a species of TENTHREDO, found in Europe. It is black, the body narrow, and covered with greyish down. Gmelin.

ANGUSTA, in *Conchology*, a species of PATELLA. The shell is depressed, white, with elevated streaks, of which every fourth is larger than the rest; aperture very narrow, with a chestnut coloured band on the outside, and a green belt within. Gmelin. This is about three quarters of an inch in length.

ANGUSTATA, in *Entomology*, a species of CASSIDA, found in India. It is yellowish, posterior part of the wing-cases narrow. Gmelin.

ANGUSTATA, a species of PIMELIA, that inhabits the southern parts of Russia and Egypt. It is glossy, posterior part of the thorax narrow, wing-cases pointed at the end. Gmelin. This creature lives in the dry dung of animals, under stones, &c. and is supposed to be the tenebrio longicornis of Pallas.

ANGUSTATA, in *Conchology*, a species of LEPAS, figured by Bonani. The shell is elongated, smooth, of six valves, the aperture narrow, and operculum small. Gmelin. It is grooved where the valves unite, and is sometimes striated with red and white.

ANGUSTATA, a species of CYPREA. It is narrow, and of a brown colour, with reddish spots. Gmelin and Gualteri.

ANGUSTATUS, in *Entomology*, a species of CURCULIO, sometimes, though rarely found in England. It is cylindrical and black, wing-cases obtuse and punctated. Fabricius.

ANGUSTATUS, a species of CRYPTOCEPHALUS in Gmelin's arrangement, and CISTELLA of Fabricius; the thorax and wing-cases are of an obscure reddish brown, and black in the middle. Fab. Inhabits England.

ANGUSTATUS, a species of CARABUS, that inhabits Germany. The thorax is cylindrical and blue, wing-cases testaceous, black at the tips. Fabricius.

ANGUSTATUS, a species of CIMEX, with oblong body, and

and filiform antennæ; it is black, with an elongated head and thorax. Gmelin and Thunb.

ANGUSTIA, in *Ancient Geography*, a town of Europe in Dacia, according to Ptolemy.

ANGUSTICLAVIA, or ANGUSTUS CLAVUS, in *Antiquity*, a *tunica*, embroidered with little purple studs, or flowers, worn by the Roman knights, inferior magistrates, and some officers of the army.

The word is compounded of *angustus*, *small*, and *clavus*, *stud*, because those ornaments were smaller in this garment than in the *laticlavus* which was worn by the senators.

ANGUSTIFOLIUS, in *Botany*, denotes narrow-leaved.

ANGUSTURA *Bark*, in the *Materia Medica*, a species of bark imported here in convex pieces, about an inch and an half or less in breadth, and about six inches long. It is hard and compact, of a yellowish brown colour, and covered with a whitish, uneven epidermis. In powder it has the yellow appearance of rhubarb; its taste is bitterish and aromatic; its odour, when recent, is said to be not ungrateful. An ounce of this bark yields, by means of alcohol, about two drams of a resinous, bitter extract; and from the same quantity, nearly three drams and a half of a gummy extract may be obtained by water. This drug, according to some, should be called *Augyline*, from St. Augustine, in East Florida; but it is more properly named *Angustura*, from a place of this name in South America, whence it was brought by the Spaniards to the island of Trinidad.

The tree which produces it is not ascertained. Some suppose it to be *MAGNOLIA glauca*; but it has been thought, with greater probability, to be the bark of the *BRUCEA antidyenterica*, or *BRUCEA ferruginea* of L'Heritier and Aiton; for the description of the bark of this tree given by Mr. Bruce agrees very well with the cortex angusturæ; and this opinion is confirmed by the bark of a living plant of this species growing in the royal garden at Kew.

This bark has been successfully used during the 12 years from 1789, in which it has been known as a medicine in this country, under the characters of a febrifuge, tonic, and astringent. In intermittents it has been found no less effectual than Peruvian bark, and generally more acceptable to the stomach; and in cases of diarrhœa, dyspepsia, schrophule, and great debility, it has been found to be an useful remedy. The doses in which Mr. Brandi has exhibited this remedy have been, of the powder as much as 20 grains every three hours, but generally less.

The infusion is made with half an ounce of the bruised bark to a pint of boiling water; the decoction of the same strength; the dose, one ounce to an ounce and an half. Of the tincture, prepared with one ounce of bark to 16 of proof spirit, the dose is about one drachm. Woodville's *Med. Bot.* vol. iv. p. 162. Murray's *Mat. Med.* vol. vi. p. 172--177. Brandi's *Exp. and Obs. on the Angustura bark*, 1791.

ANGUSTUS, in *Entomology*, a species of *CIMEX*, that inhabits China. It is greyish above, beneath yellowish; antennæ and legs testaceous brown. Fabricius.

ANGUSTUS, in *Conchology*, a species of *MUREX*. This shell is narrow, the first wreath of the spire plaited longitudinally, and ribbed transversely, the rest smooth and round, beak ribbed transversely. Gmelin.

ANHALDIN, *anhaldinum*, an epithet given to various medicines, formerly kept as secrets in the family of Anhalt. Three of the most celebrated medicines under this denomination are a corrosive, a water, and a spirit.

The corrosive, as described by Burggrave, is compounded of calcined antimony, sublimate mercury, sal ammoniac, and calcined tartar, distilled and rectified. The Anhaltin water,

or rather spirit, is a farrago of several aromatics, balsamics, and turpentine distilled with spirit of wine. It is nauseous to the palate; but has been applied externally in the palsy, syncope, vomiting, and gripes. Murray, *Mat. Med.* vol. i. p. 36.

ANHALT, in *Geography*, a principality of Germany, in the circle of Upper Saxony, terminating to the north-east on the marche of Brandenburg, to the east on the electorate of Saxony, to the south on the county of Mansfeld, to the north-west on the duchy of Brunswick, and to the north on the principality of Halberstadt and the duchy of Magdeburg, and extending about 90 miles from east to west, and in its greatest breadth about 35 miles. The soil produces corn and hops, and various kinds of fruits. The rivers, which are the Elbe, the Mulde, the Saale, the Wipper, the Seike, the Bude, the Futine, the Zita, the Nuke, and the Roslan, yield excellent fish. The mines afford lead, copper, silver, iron, coals, sulphur, vitriol, alum, saltpetre, and other minerals; and the principal article of trade is beer. The air is healthy, though cold. In this principality are 19 towns and two boroughs, and the number of inhabitants is about 100,000. Christianity was introduced into Anhalt in the ninth century; and the reformation took place in 1521. Until 1596, the whole country professed Lutheranism; but at that time Calvinism was introduced. This principality derives its name from the castle of Anhalt; and the princes of Anhalt are descended from the Ascanians. Some of the best genealogists derive their origin from Berentobaldus, who made war upon the Thuringians in the sixth century; and in the German history the princes of this family make a conspicuous figure. Joachim Ernest II. was the founder of all the present princes of Anhalt. He died in 1586; and five of his sons shared their father's territories. To the eldest of the family they all agreed to submit; and with him, to whom belonged *Anhalt-Diffau*, was vested the supreme government. The other four are *Anhalt-Bernburg*, *Anhalt-Schaumburg*, *Anhalt-Coblen*, and *Anhalt-Zerbst*. Each of the reigning lines has its regency, exchequer, and consistory. The annual produce of the whole principality of Anhalt is estimated at between 5 and 600,000 rix dollars.

ANGHELITUS, formed of the verb *anelo*, *I breathe with difficulty*, signifies a shortness and thickness of breath, as in an *ASTHMA*. See *RESPIRATION*.

ANHIMA, in *Ornithology*, a name given by Maregrave, Willughby, Ray, and other old writers, to the *PALAMEDEA CORNUTA* of Linnæus. See *CORNUTA PALAMEDEA*.

ANHINGA, a species of *PLOTUS*, having a smooth head, and white belly. Gmelin. This is the anhing of Maregrave, Brisson, Ray, and others; and *white bellied darter* of Latham.

This species is scarcely so big as a mallard in the body, but its length from the tip of the bill to the end of the tail is not less than two feet ten inches; the bill is three inches long, straight, pointed, and jagged at the edges; the colour greyish, yellowish at the base; head small, neck very long and slender, and covered with downy feathers of a rufous greyish colour; upper part of the back and scapulars dusky or blackish, the middle of each feather dashed with white; lower part of the back, rump, and upper tail coverts black; belly pure silvery white; tail of twelve large black feathers, legs and toes yellowish grey.

It inhabits Brasil, and feeds on fish, which it is said to catch with much cunning and dexterity, first drawing up its neck like a serpent, and then darting its bill upon its prey. Like the corvorant, this bird builds the nest upon trees, generally those which grow by the sides of rivers. When at rest

rest it frequently sits with the head drawn in between the shoulders, like the heron. It is for the most part very fat, but the flesh has an oily, rank, and disagreeable taste.

ANHLOTE, in *Law*, a single tribute or tax. The words *anhlot* and *anfot* are mentioned in the laws of William the Conqueror; and their sense is, that every one should pay, according to the custom of the country, his part and share, as *scot and lot*, &c. *Leg. W. I. cap. 64.*

ANHOLT, in *Geography*, a seignory of Westphalia, lies between the bishopric of Münster, the duchy of Cleve, and the county of Zutphen. When the ancient lords of Anholt became extinct, towards the close of the 12th or beginning of the 13th century, a female heir of this house transferred it to her consort John of Brankhorst. His two sons divided the maternal and paternal estates, and thus Count Theodorica obtained the sovereignty of Anholt. In 1641, he gave this seignory to his daughter, who was married to Leopold Philip Charles, prince of Salm, whose house, on account of this seignory, enjoys both seat and voice in the Westphalian college of the counts of the empire, and also at the diets of the circle of Westphalia. The province of Guelders, in the Low Country, now appropriates to itself the superiority over this seignory. The chief place in it is *Anholt*, a small town and citadel lying in the Old Yssel. N. lat. 51° 54'. E. long. 6° 7'.

ANHOLT, is an island of Denmark, in North Jutland, situate in the Cattegat, eight miles from the coast of Jutland on the west, ten from Zealand on the south, and seven from Smaland on the east. It is surrounded with sandbanks, and, therefore, dangerous to seamen, but a fire is constantly kept up in a light-house upon it. On each side of it is a channel, as ships may be sailing for Copenhagen on the east or on the west side of Zealand. Professor Bugge observes, that in all the best maps of the Cattegat, the position of Anholt is very erroneous. The light-house and the whole isle are from seven to nine minutes too much westerly; and the distance from the light-house to the Swedish coast, in a direction perpendicular to the meridian of the light-house, is, in all maps hitherto published, nearly four English miles, or one-eighth part of the whole, too great. Experience has taught the navigators that they come too soon down upon Anholt; or that, on cruising between Anholt and Sweden, they over-run their reckoning, which was ascribed to the currents; whereas, the true reason was the great error in the geographical and hydrographical position of Anholt in a narrow and dangerous passage. The light-house is in N. lat. 56° 44' 20". E. long. 11° 39' 51". *Phil. Transf. vol. lxxxiv. p. 46.*

ANHUIBA, in *Botany*, a name by which some authors call the *SASSAFRAS* tree, the wood of which is so much used in medicine.

ANHYDROS, a name given by the ancient Greeks, and from them copied by the Romans in the time of Pliny, to express one of those kinds of the *STRYCHNA*, or nightshades, which, when taken internally, caused madness.

ANI, in *Ornithology*, a species of *CROTOPHAGA*, in the Linnæan and Gmelinian arrangement, and very briefly described as *Cr. minor pedibus scanforis* (small feet-climbers). This character is, perhaps, insufficient to distinguish it from another species of the same genus described by Gmelin, as *Cr. major pedibus scanforis*, without attending to the characters admitted by other authors; both are of a blackish violet colour, and have the edges of the feathers glossed with green, but in the former the green has a coppery aspect: the bill of this is also shorter in proportion, and rises higher at the top, and its usual length is thirteen inches and an half, which is about four inches and an half less than that of *C. ma-*

major. Some authors have been disposed to consider them as the two sexes of the same species, or mere varieties; but both sexes of each seem to be well ascertained, and Dr. Latham says he is assured they are distinct species, and never mix together.

This is the Brazilian bird, called by Maregrave in his History of Brasil, *ANI*; and *Plittaco* congener *Ani*, by Ray and Willughby. It is not, however, peculiar to this part of South America, being also found in Guiana. It is *Mondula tota nigra major garrula*, *mandibula superiore arcuata* of Sloane, Jamaica; and is likewise described as a *Well Indian* bird by Brown. Catesby calls it the razor-billed blackbird; Buffon, *ani des Savaues*, and in the *Pl. enl. Petit Bout-de-Petun*. *Crotophagus*, by Brisson, and it is supposed the *Cacalotol* of Ray is the same bird.

"Contrary to all other birds, the *Crotophaga Ani*," says Dr. Latham, "have the singularity of many lying in the same nest, to make which they all unite in concert; and, after laying their eggs, sit on them close to each other, in order to hatch them, each unanimously striving to do the best for the general good; and when the young are hatched, the parents, without reserve, do the best to feed the whole flock. A still greater singularity occurs, which is, that as soon as each female lays her eggs, she covers them with leaves, doing the same thing whenever she is obliged to leave the nest for food: this might be necessary in a cold climate; but why it should be wanted in a hot one, seems not clear, especially as it has not been observed in other birds. It generally has two broods in a year, except accidents happen; in which case it has been known to make three nests. The eggs are about the size of those of a pigeon, of a sea-green colour, spotted at the ends."

"Their food is various; worms, insects, fruits, and grain, according to the season. They have the same manners as the greater ani, *C. major*, and are continually gregarious, from ten to thirty in a flock, whether it be in breeding time or not. They are not difficult to be shot, not being so wild as many other birds; but are known to chatter much on the sight of a man, though they do not fly to a great distance; hence they are not well relished by sportsmen, as, like jays in England, they are the occasion of hindering his sport in respect to other game, without making him amends in their own flesh, which is never sought after for food, being rank and unfavoury." *Vide Gen. Syn. tom. i. p. 362.*

ANI, a name adopted by Dr. Latham in his arrangement, *Gen. Syn.* for the Linnæan genus *CROTOPHAGA*; thus the species *C. ani* is called the *lesser ani*, *C. major*, *greater ani*, *C. ambulatoria*, *walking ani*; and, no doubt, the newly-discovered species described as *C. varia*, *rufo nigroque varia*, in *Ind. Orn.* of the same author, would have been called the *variegated ani*, had any English name been assigned to it.

ANI, a name given by some early writers on natural history to the *UPUPA MEXICANA* of Linnæus, and Mexican pomepops of Latham. *Avis ani Mexicana cauda longissima*. Seba, &c.

ANI, or **ANIKAGA**, in *Geography*, a town of Greater Armenia, in Asia, in the government of Kers, and under the beglierbeg of Erzerum. Its walls are watered by a river, which descends with rapidity from the mountains of Mingrelia. It was formerly known under the name of *Am*; and was so considerable and so strong, that the ancient kings of Armenia deposited their treasure in its castle.

ANIAN Straits, lie between the north-east extremity of Asia, and the north-west point of the continent of America. The west point of this strait is N. lat. 65° 52', and W. long. 169° 20', and the east point, called Cape Prince of Wales, in N. lat. 65° 46', and W. long. 168° 15'; and its breadth is about 14 leagues. See *BEERING'S Straits*.

ANIAN is also a barren, sandy desert, which is excessively hot, and inhospitable, on the east coast of Africa; frequented only by wandering Arabs, who live in camps. It lies upon or near the Eastern Ocean and the Red Sea. See ABEX.

ANIAN-FU, or ANIEN, a town of China, in the province of Chuquami.

ANIANA, in *Ancient Geography*, a town placed by Ptolemy in Mesopotamia.

ANIANE, in *Geography*, a town of France, in the department of the Herault, and chief place of a canton in the district of Lodeve, 13 miles west-north-west of Montpellier. N. lat. 43° 41'. E. long. 3° 29'.

ANJAR, a town of Asia in Syria, between Aleppo and Alexandretto.

ANIBA, in *Botany*. See CEDROTA.

ANICETUS, Pope, in *Biography*, a Syrian by birth, succeeded Pope Pius, according to Eusebius, in the year 157; but, according to other writers, at a somewhat earlier period. In his time, the Gnostic doctrines of Valentine and Marcion prevailed at Rome; but many of the persons who adopted them were reclaimed by Polycarp, who came from Smyrna to Rome, in order to settle the controversy about the celebration of Easter. Anicetus differed with him on this point; and after a conference, each retained his own opinion, whilst both of them manifested mutual forbearance and charity. In token of their amity they communicated together at the eucharist; and Anicetus testified his respect for Polycarp, by yielding to him the honour of performing the service on the occasion. Happy would it have been for the Christian church, if the successors of Anicetus had manifested a similar disposition. Several ordinances and decrees are ascribed to this pope by modern writers, but their authority is doubtful, and therefore they are not worthy of notice. After having governed the church 11 years, he died, as some have said, a martyr; but of this there is no sufficient evidence. The letters ascribed to him are spurious. Euseb. Eccl. Hist. lib. iv. c. 11. 14. 22. Dupin. Bower.

ANICH, PETER, a mathematician, mechanic, and astronomer, was born of obscure parentage at Oberperzuff, near Inspruck, in 1723; and discovered an early taste for the sciences of astronomy and geometry, which Father Hill, a Jesuit, and professor in the university of Inspruck, afforded him an opportunity of cultivating. In a short time he was distinguished by his knowledge both of astronomy and mechanics. He made a very curious pair of globes for the university of Inspruck, and constructed many mathematical instruments of his own invention. He also delineated maps with neatness and accuracy. He died much regretted in 1766; and the empress queen testified her respect for his memory, by settling upon his sister a pension of 50 florins. Nouv. Dict. Hist.

ANICULA, in *Conchology*, a name given by Rumphius to a species of conus, called by Linnæus and later authors, CONUS MONACHUS; which see.

ANICULUS, in *Entomology*, a species of CANCER, having an ovate thorax, ciliated at the sides, and rugged, hairy legs. Fabricius. This creature inhabits the southern ocean, and is the largest of the family *Parasitici*. The rostrum is bifid, teeth elongated and acute; the eyes cylindrical and porrected; thorax smooth, tail soft, claws and legs rugged, with hairy tufts.

ANJENGO, in *Geography*, a small town and factory, with a fort, on the coast of Malabar, belonging to the East India company. The chief trade of this settlement is pepper, and rupees are the current money. N. lat. 8° 39'. E. long. 76° 40'.

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ANIERES, a town of France, one league north-west from Paris.

ANIGRUS, in *Ancient Geography*, a river of Triphylia, in the territory of Elis, to the north of Lepreum. Its source was in Lepithas, a mountain of Arcadia; the inhabitants of which thought that it was the same with the Mingeus of the ancients, mentioned by Homer. Near this river was a cavern, called the cave of the nymphs *Anigrades*, or *Anigrades*, mentioned by Strabo and Pausanias; and it was pretended that any persons who had a complaint of the skin might be cured, if, after having sacrificed to the nymphs, they swam over the Anigrus.

ANIKAN, or INGHENIFRAN, a town of Africa, on the Gold Coast, where the English and Portuguese have both a factory and a fort.

ANILL, in *Botany*. See INDIGOFERA.

ANILIS, in *Entomology*, a species of MUSCA, in the Linnæan system, and BIBIO in that of Fabricius. It is villous, whitish grey, with transparent whitish wings, and is found in Europe. Gmelin.

ANILLE, in *Heraldry*, a mill-rind, or, as the French term it, a fer de moline.

ANIM, in *Ancient Geography*, a town of Palestine, situate in the mountains of the tribe of Juda, according to the book of Joshua.

ANIMA, a SOUL; whether rational, sensitive, or vegetative.

The word is pure Latin, formed of *animus*, breath.

ANIMA is sometimes used by physicians to denote the principle of life in the body.

In which sense Willis calls the blood *anima brutalis*.

ANIMA is also figuratively used by chemists for the volatile principles in bodies, whereby they are capable of being raised by the fire.

In which sense we meet with *anima jaspidis*, the soul of jasper, &c. Phil. Trans. N° 74. p. 2233.

ANIMA is more peculiarly applied to simple medicines, artfully exalted by solution and extraction, to a high degree of power.

In which sense we meet with *anima aloes*, *anima rhabarbari*, *anima veneris*, &c.

Sometimes also it denotes medicines which are peculiarly salutary to particular parts of the body. Thus we meet with

ANIMA articularum, which is a denomination sometimes given to HERMODACTYLS, on account of their efficacy in disorders of the joints.

ANIMA hepatis, soul of the liver, a term applied by the chemists to the *sal martis*, salt of iron or steel; on account of its utility in distempers of that part.

It is more usually prescribed under the name of *vitriolum martis*.

ANIMA pulmonum, used for *crocus*, or saffron, by reason of its supposed great use in diseases of the lungs.

ANIMA mundi, q. d. *soul of the world*, or of the universe, denotes a certain pure ethereal substance or spirit, diffused, according to many of the ancient philosophers, through the mass of the world, informing, actuating, and uniting the divers parts thereof into one great, perfect, organical, and vital body or animal. See PLASTIC Nature.

Plato treats at large of the *ψυχη τε κοσμου*, in his *Timæus*; and is even supposed to be the author of the *dogma*; yet interpreters are much at a loss about his meaning. Aristotle, however, taking it in the common and obvious sense, strenuously opposes it.

The modern Platonists explain their master's *anima mundi*

by a certain powerful ethereal spirit, which in the heavens exists perfectly pure, as retaining its proper nature; but on earth, pervading elementary bodies, and intimately mixing with all the minute atoms thereof, it assumes somewhat of their nature, and becomes of a peculiar kind. So the poet;

“ Spiritus iatus alit, totosque infusa per artus
Mens agitat molem, & magno se corpore miscet.”

They add, that this *anima mundi*, which more immediately resides in the celestial regions as its proper seat, moves and governs the heavens in such manner, as that the heavens themselves first received their existence from the fecundity of the same spirit: for that this *anima*, being the primary source of life, every where breathed a spirit like itself, by virtue whereof various kinds of things were framed conformable to the divine ideas.

The notion of an *anima mundi* is rejected by most of the modern philosophers; though M. du Hamel thinks without any great reason, since the generality of them admit something very much like it. Thus the Peripatetics have recourse to celestial influxes, in order to account for the origin of forms, and the secret powers of bodies.

The Cartesians have their subtle matter, which answers to most of the uses and intentions of Plato's *anima mundi*; being supposed to flow from the sun, and the other heavenly bodies, and to be diffused through all the parts of the world, to be the source or principle of all motion, &c.

Some later philosophers, in the place of these substitute fire; and others a subtle elastic spirit, or *medium*, diffused through all parts of space.

The principal thing objected to, on the Christian scheme, against Plato's doctrine of the *anima mundi*, is, that it mingles the Deity too much with the creatures; confounds, in some measure, the workman with his work, making this, as it were, a part of that, and the several portions of the universe so many parts of the godhead. Yet is the same principle asserted by Seneca, Epist. 92. *Totum hoc quo continemur, & unum est, & Deus. Et socii ejus sumus, & membra*—

ANIMA gemmarum, a term used by Becher and some others, to express that principle, to which the gems, and other beautiful stones owe their colours.

This *anima lapidum* is no more than the metalline sulphur to which these stones and gems, naturally colourless, owe their tinges; and, like other metalline sulphurs, it may be raised and evaporated by fire. Becher, Phys. Subt.

ANIMA saturni, the soul of lead, a preparation of lead, serving to many purposes in the enamel work. The method of making it is this: put litharge, powdered fine, into a glazed earthen vessel, and pour distilled vinegar upon it to the height of four fingers; let it stand till the vinegar is of a white or milky hue; pour off this coloured vinegar and put on fresh, and so do till the vinegar will no longer be coloured by the litharge; then set these liquors together in open glazed earthen vessels, that the white powder may subside, and the vinegar be poured off clear. This white substance is the *anima saturni*. Sometimes this white matter will not precipitate without the addition of water; and sometimes it is necessary to evaporate the liquors, but by that means it is always prepared. Neri's Art of Glass, p. 184.

ANIMACHA, or *ANIMACA*, in *Geography*, a river of India, in Malabar, which rises in Calicut, and discharges itself into the sea, in the vicinity of Cranganor.

ANIMADVERSION, formed of *animus*, the mind, and *adverto*, I turn to, sometimes signifies correction, and sometimes remarks or observations made on a book, &c. and

sometimes a serious consideration and reflection on any subject, by the rules of criticism.

ANIMAL, in *Natural History*, an organized and living body, endowed with the powers of sensation, and of spontaneous loco-motion. The word is derived from *anima*, soul, and literally denotes something that is endued with a soul. Boerhaave defines an animal to be an organical body, consisting of vessels and juices, and taking in nutrition by a part called the mouth; whence it is conveyed into another called the intestines, into which it has roots implanted, whereby it draws in its nourishment after the manner of plants. The imperfection of this definition is obvious, not merely as it excludes the sentient principle, but because it distinguishes the animal by the instruments or means of its nutrition, which it possesses in common with vegetables, and which, notwithstanding some variation in their form and structure, are not sufficient to constitute an essential distinction. Dr. Tyson fixes the criterion of an animal in the “*ductus alimentalis*,” i. e. a gula, stomach, and intestines, all which make one continued canal; but this definition is liable to the same objection with that of Boerhaave. Some, as Klein and others, have defined animals, from their loco-motion, as being capable of shifting from place to place, whereas plants adhere to the same subject. This property they assume as the great characteristic by which animals may be distinguished from the other orders of beings. On this principle, however, oysters, muscles, cockles, &c. would be almost excluded from the class of animals, inasmuch as they usually adhere, or grow to rocks, &c. and yet it is certain that these creatures are real animals. But loco-motion alone is not sufficient to constitute the generic difference of animals; nor indeed does it sufficiently distinguish an animal from a plant. Many instances are produced, in which plants manifest loco-motive power. This is the case with those denominated sensitive plants, many of which, upon the slightest touch, shrink back, and fold up their leaves; as the snail, on the slightest touch, retires into its shell. There are some, on which if a fly perches, instantly close and crush the insect to death. Plants also change their position and form in different circumstances and seasons; they take advantage of good weather, and guard themselves against bad weather; they open their leaves and flowers in the day, and close them at night; some close before sun-set, and some after; some open to receive rain, and some close to avoid it; some follow the sun, and some turn from it; the leaves of some plants are in constant motion during the day, and at night they sink to a kind of rest or sleep. It has also been observed that a plant has a power of directing its roots for procuring food; and that it has a faculty of recovering its natural position, after it has been forced from it. A hop-plant, for instance, in twisting round a pole, directs its course from south to west, as the sun does; if it be tied in the opposite direction, it dies; but if it be left loose in this direction, it will regain its natural course in a single night. A honey-suckle proceeds in a certain direction till it be too long to sustain itself; it then acquires strength by shooting into a spiral form; and if it meet with another plant of the same kind, both these coalesce for mutual support, one twisting to the right and the other to the left. Lord Kaimes mentions many other instances in which plants manifest a faculty of loco-motion; and, perhaps, in almost as eminent a degree as some animals. Muscles, e. g. are fixed to one place as much as plants; nor have they any power of motion, besides that of opening and shutting their shells; nor do they seem, in this respect, to have any superiority, with regard to the powers of motion, to the sensitive plant and others of a similar kind.

In order, therefore, to form a complete and satisfactory distinction between animals and vegetables, as well as minerals, it is necessary to combine with spontaneous locomotion, which they unquestionably possess in a more perfect degree than plants, the powers of sensation. These seem to be unexceptionably distinguishing and characteristic. However, M. Buffon (*Nat. Hist.* by Smellie, vol. ii. p. 6.), after allowing that, although progressive motion constitute a perceptible difference between an animal and a vegetable, this distinction is neither general nor essential; proceeds to state, that sensation more essentially distinguishes animals from vegetables. But he adds, that this distinction is neither sufficiently general nor decided. If sensation, he says, implied no more than motion consequent upon a stroke or impulse, the sensitive plant enjoys this power; whereas, if by sensation we mean the faculty of perceiving, and of comparing ideas, it is uncertain whether brute animals are endowed with this faculty. If it should be allowed to dogs, elephants, &c. whose actions seem to proceed from motives similar to those by which men are actuated, it must be denied to many species of animals, particularly to those that appear not to possess the faculty of progressive motion. If the sensation of an oyster, *e. g.* differ in degree only from that of a dog, why do we not ascribe the same sensation to vegetables, though in a degree still inferior? In examining the distinction which arises from the manner of feeding, he observes, that animals have organs of apprehension, by which they lay hold of their food: they search for pasture, and have a choice in their aliment. But it is alleged, that plants are under the necessity of receiving such nourishment as the soil affords them, without exerting any choice in the species of their food, or in the manner of acquiring it. However, if we attend to the organization and action of the roots and leaves, we shall soon be convinced, that these are the external organs by which vegetables are enabled to extract their food; that the roots turn aside from a vein of bad earth, or from any obstacle which they meet with, in search of a better soil; and that they split and separate their fibres in different directions, and even change their form, in order to procure nourishment to the plant. From this investigation he concludes, that there is no absolute and essential distinction between the animal and vegetable kingdoms; but that Nature proceeds by imperceptible degrees from the most perfect to the most imperfect animal, and from that to the vegetable; and that the fresh-water polypus may be regarded as the last of animals and the first of plants. After examining the distinctions, this author proceeds to state the resemblances which take place between animals and vegetables. The power of reproduction, he says, is common to the two kingdoms, and is an analogy both universal and essential. A second resemblance may be derived from the expansion of their parts, which is likewise a common property, for vegetables grow as well as animals; and though some difference in the manner of expansion may be remarked, it is neither general nor essential. A third resemblance results from the manner of their propagation. Some animals are propagated in the same manner, and by the same means, as vegetables. The multiplication of the sacceron, or vine-creeper, which is effected without copulation, is similar to that of plants by seed; and the multiplication of the polypus by cuttings, resembles that of plants by slips. Hence it is inferred, that animals and vegetables are beings of the same order, and that Nature passes from the one to the other by imperceptible degrees; since the properties in which they resemble one another are universal and essential, while those by which they are distinguished are limited and partial. Dr. Watson, bishop of Llandaff, has examined, with his usual judgment, the distin-

guishing marks between animals and vegetables. See *Ess.* iii. in the fifth volume of his *Chemical Essays*, 12mo. 1787. He rejects, as insufficient, both *figure* and *spontaneous motion*; and if *perception* be substituted in their stead, it will be found to be a criterion that is in many respects liable to exceptions. However, the ingenious and learned prelate produces many chemical, physical, and metaphysical reasons, which serve to render the supposition not altogether indefensible, that vegetables are endowed with the faculty of perception. Dr. Percival, likewise, in a paper read before the Literary and Philosophical Society of Manchester, produces several arguments to evince the perceptive power of vegetables. From the reasoning adduced by both these ingenious writers, of which a more particular account will be given in the sequel of this work (see *PLANTS and VEGETABLES*), those who duly advert to it, will, we conceive, incline to the opinion, that plants are not altogether destitute of perception. But on a question that has perplexed and divided the most ingenious and inquisitive naturalists, it is very difficult to decide. If we extend to the vegetable kingdom that kind of vitality with which sensation and enjoyment are connected, there will remain no discernible boundary between this and the animal kingdom; and that which has been considered as the distinctive characteristic of animals, and by which they are separated from vegetables, will be abolished. For a discussion of this question more in detail, see *BRUTE, INSTINCT, Physiology of PLANTS*, and particularly the article *SENSATION*. Before we close this article, we shall add, that the principle of self-preservation belongs to all animals; and it has been argued, that this principle is the true characteristic of animal life, and that it is unquestionably a consequence of sensation. There is no animal, when apprehensive of danger, that does not put itself into a posture of defence. A muscle, when it is touched, immediately shuts its shell; and as this action puts it into a state of defence, it is ascribed to a principle of self-preservation. Those who adopt this reasoning, allege, that vegetables do not manifest this principle. When the sensitive plant, for instance, contracts from a touch, it is no more in a state of defence than before; for whatever would have destroyed it in its expanded state, will also destroy it in its contracted state. They add, that the motion of the sensitive plant proceeds only from a certain property called *IRRITABILITY*; and which, though possessed by our bodies in an eminent degree, is a characteristic neither of animal nor vegetable life, but belongs to us in common with brute-matter. The sensitive plant, after it has contracted, will suffer itself to be cut in pieces, without making the least effort to escape. This is not the case with the meanest animal. An hedge-hog, when alarmed, draws its body together, and expands its prickles, thus putting itself in a posture of defence. When thrown into the water, the same principle of self-preservation prompts it to expand its body and swim. A snail, when touched, withdraws itself into its shell; but if a little quick-lime be sprinkled upon it, so that its shell is no longer a place of safety, it is thrown into agonies, and endeavours to avail itself of its loco-motive power, in order to escape the danger. Muscles and oysters also, though they have not the power of progressive motion, constantly use the means which Nature has given them for self-preservation.

We ourselves possess both the animal and vegetable life, and ought to know whether there be any connection between vegetation and sensation, or not. We are conscious that we exist, that we hear, see, &c. but of our vegetation we are absolutely unconscious. We feel a pleasure in gratifying the demands of hunger and thirst; but we are totally ignorant of the process by which our aliment is formed into

chyle—the chyle mixed with the blood, the circulation of that fluid, and the separation of all the humours from it. If we then, who are more perfect than other vegetables, are utterly insensible of our own vegetable life, why should we imagine that the less perfect vegetables are sensible of it? We have within ourselves a demonstration that vegetable life acts without knowing what it does; and if vegetables are ignorant of their most sagacious actions, why should we suppose that they have any sensation of their inferior ones; such as contracting from a touch, turning towards the sun, or advancing to a pole? As to that power of irritability which is observed in some plants, our solids have it when deprived both of animal and vegetable life; for a muscle cut out of a living body will continue to contract, if it be irritated by pricking, after it has neither sensation nor vegetation. The following moral reason has also been suggested against believing vegetables to be endued with sensation: if this were the case, they would suffer pain when they were cut or destroyed, and their state would be very unhappy if they had not the least power to avoid the injuries duly offered them. Accordingly it is maintained, that the goodness of the Deity is conspicuous in not giving to vegetables the same sensations as to animals; and as they have no means of defence, we may conclude from this circumstance, that they were granted as food to animals. *Encycl. Brit.* On the other hand, those who are of opinion that plants possess powers of perception, allege that their hypothesis recommends itself by its consonance to those higher analogies of nature, which lead us to conclude, that the greatest possible ocean of happiness exists in the universe. The bottom of the sun is overspread with plants of the most luxuriant magnitude; and immense regions of the earth are overspread with perennial forests. Nor are the Alps, or the Andes, destitute of herbage, though buried in depths of snow: and can it be imagined that such profusion of life subsists without the least sensation or enjoyment? Let us rather, with humble reverence, suppose, that vegetables participate, in some low degree, of the common allotment of vitality; and that one great Creator hath appointed good to all living things, “in number, weight, and measure.” Percival, *ubi supra*.

For an account of the various systems that have been adopted in the distribution of animals, see *ZOOLOGY*. See also *MAMMALIA*, *BIRDS*, *AMPHIBIA*, *FISHES*, *INSECTS*, and *WORMS*. For other particulars relating to their number, analogous structure, sagacity, instinct, &c. see *COMPARATIVE ANATOMY*, with the articles referred to under that head, *BRUTE*, *GENERATION*, *INSTINCT*, *MIGRATION*, *Oviparous*, *Viviparous*, &c. &c.

ANIMALS make the principal figures in *Heraldry*, both as bearings and as supporters, &c.

ANIMAL is also used adjectively to denote something that belongs to, or partakes of, the nature of an animal body. Thus we say *animal food*, *animal economy*, &c.

Moralists frequently oppose the *animal* part, which is the sensible, fleshy part of a man, to the rational part, which is the understanding.

ANIMAL actions are those peculiar to animals, or which belong to animals as such:

Such are *SENSATION* and *MUSCULAR MOTION*.

ANIMAL carib. See *EARTH*.

ANIMAL flower, a name indiscriminately applied to a variety of different creatures in the *VERMES* tribe, that bear some resemblance to a flower; and is synonymous with *sea anemone*, *urtica marina*, or *sea-nettle*, &c. These, for the most part, belong to the *mollusca* order in the Linnæan system, as the *actinæ*, and *holothuriæ*; yet the same is given

to the *tubulariæ* and *hydræ*, which belong to an entirely different order, the *zoophyta* of Linnæus. See *ACTINIA*, *ANEMONE*, (*sea*), *HOLOTHURIA*, *TUBULARIA*, and *HYDRA*.

ANIMAL functions, among *Physicians*. See *FUNCTION*.

ANIMAL gluc. See *GLUE*.

ANIMAL gods, *dii animales*, in *Mythology*, those into which human souls are converted by means of certain religious ceremonies.

Labeo has written expressly on the animal gods.

ANIMAL heat. See *HEAT*.

ANIMAL hunger. See *HUNGER*.

ANIMAL liquors. The common opinion is, that all the animal liquors, excepting chyle and milk, are of an alealescent nature; but M. Quesnay, in his book *Sur l’Oeconomie Animale*, affirms, that our gelatinous liquors contain a very accelescent salt, capable of resisting a heat of two hundred degrees. The proof of which, says he, offers itself daily to every one: who is it that has not remarked, that broth made with flesh, well freed from fat, when corrupted, becomes as sour as verjuice? The foundation on which M. Quesnay builds his doctrine concerning animal liquors, is the separation of milk into its oily, cheesy, and watery substances. *Med. Ess. Edinb.*

ANIMAL magnetism. See *MAGNETISM*.

ANIMAL manures, in *Agriculture*, are all such as are formed from the decomposition of animal substances of any kind, as flesh, blood, hair, wool, bones, fat, &c. Agricultural writers consider them, in general, as more powerful in their effects, in promoting vegetation, than such as are derived from vegetable matters. However, on account of their being seldom procured in large quantities, they are mostly made use of in the state of mixture or combination with other materials, either of the earthy or littersy kinds; in both which cases they may be highly beneficial. In the former by the action of the ammoniac, which is constantly formed in large quantities, during the decomposition and decay of animal matters on the mould, and rendering it more suitable for the support of plants; and, in the latter, by their well known property of promoting fermentation, and thus hastening the reduction of the materials into the state of manure. See *MANURE*.

ANIMAL matter, in *Chemistry*. The ancient division of all natural bodies into the three grand classes of *mineral*, *vegetable*, and *animal*, a division founded upon simple observation, and not upon pre-conceived theory, may still be retained as a classification of some practical utility to the chemist, though infinitely less so than to the physiologist.

A complete knowledge of the chemistry of animal matter would comprehend an intimate analysis of all the materials out of which it is formed, and of their mode of combination; whereby, from a few simple elements, the great variety of aliments used by the living animal are produced: it would also require a minute examination into the process of digestion and assimilation of food, step by step, in order to trace the curious and interesting conversion of inanimate matter into an integrant part of the living animal; and more than all, it would include an investigation into the most secret recesses of nature, in order to determine how far the known laws of chemical affinity are affected by animal organization, and by the vital principle. The very imperfect progress which has been made in this branch of chemical inquiry shews the great and almost insuperable difficulties which attend its pursuit; and, notwithstanding the real discoveries made by modern chemists, and the self-complacency with which they are so often brought forward, little else can be related on the chemistry of animal matter, than a collection

lection of detached facts and unconnected experiments, from which no plausible theory of the process of animalization has been deduced, and but little assistance has been afforded to the science of physiology, and perhaps still less to the cure of disease.

Before we enumerate the particular parts of animal matter which have afforded the greatest scope to chemical experiment, it may be proper to premise a few remarks on the materials out of which animal matter is formed; on the mode in which they are elaborated within the living body; and on the chemical properties which appear to be common to every part of the animal kingdom.

Two principal functions, possessed, apparently, by every living creature, prepare the materials out of which the animal body is constituted, and from which it draws perpetual supplies: these are, *digestion* and *respiration*.

The food taken in by the mouth is the most obvious and abundant source of supply to the body; and this cannot be said to have become an integrant part of the animal which receives it, till it has been prepared in the stomach by the process of digestion, and till the chyle, or nutritive part which it furnishes, has been further assimilated in the lymphatics, and, at last, added to the mass of circulating blood.

The vegetable kingdom furnishes, directly or indirectly, the whole of alimentary matter, except the common diluent, water. Hence, chemists have with great propriety directed much of their inquiries relating to this subject, to an examination of the characteristic differences which exist between vegetable and animal matter in general, and some important facts have appeared, which we shall presently relate. The *ultimate* analysis of vegetables, or that which reduces them to their simplest forms, furnishes us with very few materials. Of these, water is by far the most abundant ingredient; carbonaceous matter the next in quantity, and equally constant; and chemical analysis will also shew a certain portion of hydrogen and of oxygen unconnected with the composition of water, and a few saline and earthy parts, which, from their constant occurrence, have a claim to be considered as necessary constituents of vegetable matter. In tracing the decomposition of vegetable aliment, however, it should be remembered, that these materials are presented to the animal organs, not merely as so much hydrogen, carbon, and oxygen, but in the intermediate and already very compounded forms of farina, sugar, mucilage, and the like; forms in which their tendency to chemical change is much stronger than when they are reduced to their simplest mode of existence.

With regard to that very large proportion of aliment which is furnished from the animal kingdom itself, forming so much of the food of man, and the whole nutriment of many entire classes of living creatures, this, it is obvious, is still produced indirectly from vegetable matter, and the art of chemistry has not yet been able to detect any very sensible difference between the first, and the subsequent results of assimilation by animal organs. The most accurate chemical analysis could not determine with any certainty, whether a given portion of animal substance was a part of a carnivorous or a herbivorous animal; and this single circumstance shews, perhaps, as much as any other, the very imperfect state of our knowledge of the changes produced during digestion in the living organs.

A chemical change equally important with digestion, and still more uniform and constant in its operation, is the action of the external air on the animal fluids through the medium of respiration. The part which immediately receives the action of the air, is the blood whilst circulating in the extreme branches of the pulmonary arteries and veins in the cells of

the lungs. Under the articles *RESPIRATION*, and *BLOOD*, we shall relate more at large the facts that have been discovered by the successive labours of some of the most ingenious philosophers which the world has produced, which prove incontrovertibly the analogy between this process and that of combustion, and its connexion with the animal temperature. There can be no doubt that respiration is a chemical process, the operation of which, as it is exerted on the general mass of circulating fluid, is extended through every part of the living body; and perhaps its effects are more peculiarly and exclusively *chemical*, than most of the other animal functions. Respiration too may properly be considered as the last step in the process of the assimilation of food, since the chyle, when thoroughly elaborated, is thrown into the mass of blood returning to the heart, whence it directly passes to the lungs (entirely in some classes of animals, and partially in others), and is subjected to the chemical action of the external air, before it renews the round of circulation to supply the different purposes of the body.

As a defective respiration, in the case of original mal-conformation as well as of disease, produces a train of disorders which are very strongly and pointedly marked, we may infer that the chemical analysis of the several parts of the body, if we had the means of sufficient accuracy of examination, would readily indicate the deficiency in so powerful a chemical agent as the atmospherical air. Opportunities for such an examination have not, however, been sufficiently frequent, nor is it certain that, in the present state of chemical knowledge, they could be rendered very conclusive.

In considering the mode whereby alimentary matter is *assimilated*, or undistinguishably blended with the solids and fluids of the living animal in which this function is going on, a very interesting inquiry presents itself, namely, to determine how far this process is purely *chemical*, (that is, conducted by the same laws of simple and complex affinity which operate on inanimate matter), and how far it is affected by the circumstances of the *living principle*. In favour of the former opinion the following arguments may be urged:—first, that the food, whether derived from the vegetable, or the animal kingdom, or from a mixture of both, is a substance which strongly tends to spontaneous decomposition, in whatever situation it is placed; and that, *ceteris paribus*, it is more or less digestible in proportion to its greater or less disposition to chemical change. Likewise, as we have before mentioned, it is already a very compounded mixture, composed of simple elements indeed, but united by very complex affinities; and when in the form of animal flesh, of vegetable farina and the like, it is infinitely more liable to chemical change than if it were reduced to its elementary parts. Secondly, it may be urged, that a part at least of the preparation which the food undergoes in the organs of digestion is obviously a series of chemical processes. By the action of the teeth, of the gizzard, and similar apparatus, the mechanical process of *comminution* is performed: to this succeeds *maceration* in the saliva, in the gastric liquor, and in other animal secreted juices: the contractile power of the stomach affords constant *pressure* and *agitation* to the materials which it contains: a separation of the different parts of the heterogeneous mass under digestion, or a species of *filtration*, is performed by the lacteals and the mesenteric glands: during the course of circulation, a most intimate *mixture* takes place between the fresh supply of nutritive matter from the aliment, and the animal juices already contained in the vessels; and lastly the newly assimilated chyle undergoes a process similar to *combustion*, whilst in a state of intimate division within the ultimate ramifications of the pulmonary

pulmonary vessels. To this it may be added, that the temperature of the animal in which these several processes are carrying on, is found by experiments out of the body to be highly favourable to that gradual and complex chemical change which educes from animal or vegetable matter the greatest variety of important products.

Thirdly, it may be alleged, in answer to the forcible objection which will immediately arise to an explanation of digestion on purely chemical principles, from the impossibility of carrying on the same process *out* of the body, that the chemist cannot imitate animal digestion, because he has not all the materials at command, and especially because he cannot construct, by mechanical means, any apparatus resembling in the most distant degree the curious, beautiful, exquisitely elaborated and complicated organs which nature has furnished for this important process. This imitation has appeared so hopeless, that no such attempt has, to our knowledge, been made; for the valuable and interesting experiments of the late eminent physiologists, Spallanzani and Hunter, on what may be called, a partly *artificial* digestion, which will be mentioned in a future part of this work, do not come under this point of view.

It is far from our intention, however, to deny that in this, as well as in other functions of the body, the vital principle is to be esteemed as an agent *sui generis*, of the highest importance; and, from the disturbance which certain affections of the nervous system will directly produce on the whole process of digestion, we cannot, perhaps, at any period trust to merely chemical facts for an explanation of its phenomena. The difficulty of investigation into the subject, which at all times is great, is moreover constantly increasing in proportion as the process of assimilation advances, and at last becomes insurmountable, from the impossibility of gaining access to the interior parts of the animal structure, without producing a total derangement of the functions, and destroying life.

The chemist must, therefore, content himself with examining in detail the properties of animal matter, wherein very sensible differences may be detected, both between different parts and organs, and between the same parts and species, taken at the several periods of life, at different states of activity, and under the various circumstances of health and disease.

Chemists have long directed their attention to discover some characteristic properties common to every species of animal matter, whereby it might be distinguished from the products of the vegetable kingdom. Formerly the method of analysis was principally directed to the process of distillation in a retort, by a heat, at first gentle, and afterwards increased gradually, till every part of the animal matter was volatilized, and only a fixed residue of very difficult combustion, called *caput mortuum*, remained in the retort. The difference between animal and vegetable matter, when subjected to distillation, is highly important, and is well laid down by the celebrated Neuman, one of the most skilful and accurate chemists of his time. "Animal substances," he observes, "a few excepted, on being distilled in close vessels, by a strong fire, give over, not a manifest acid liquor as vegetables do, but an urinous or volatile alkaline one, and commonly more or less of a concrete volatile alkaline salt, together with an empyreumatic oil more fetid than the oils of vegetables, and of a different kind of factor. On calcining the remaining coal in open vessels, and elixating the ashes with water, we sometimes obtain a portion of a kind of fixed saline matter, but very rarely a perfect alkali, like that extracted from the ashes of vegetables." In the analysis by fire, therefore, the production of ammonia,

or volatile alkali, is the most striking circumstance which characterizes animal matter; and hence the preparation of sal ammoniac, salt of hartshorn, and a variety of the ammoniacal salts, from the distillation of horn, bones, urine, camel's dung, and other animal matter, which forms a very extensive branch of chemical manufactures.

Animal putrefaction, considered as a method of chemical analysis, gives results similar to those of distillation, particularly in the production of the volatile alkali; and hence it has long been remarked by the manufacturers of this alkali, that the product is much increased by suffering the materials to undergo a certain degree of putrefaction.

Chemists, however, were fully aware that the existence of ammonia, in its alkaline state, in fresh animal matter, could not with certainty be inferred from its appearance after distillation, but only the presence of the materials out of which the volatile alkali may be composed. So, the author last quoted expressly observes, that "the volatile alkalis obtained from animals are artificial productions, never found to exist naturally in any animal substance in its perfect state. They are generated by the action of fire, and by putrefaction, and not by any known power besides."

The method of analysis, by simple distillation, has another imperfection (besides that of the introduction of an alkali, formed by the process, and not previously contained in the substance examined), which is, that it confounds in a few common products of distillation, a variety of parts, which in their natural state possess very specific and distinguishing qualities. This is particularly the case with those active and acrid substances, which produce such powerful effects, either as medicines or poisons. It cannot but be a very imperfect analysis which exhibits no striking difference between the mildest and the most acrimonious substances; between the common articles of food, and those animal products of which the minutest portion introduced into the living body is capable of exciting the most violent commotions.

Modern chemistry has added to the analysis by fire, the use of a more refined and delicate mode of experimenting, the advantage of which we shall presently shew; though it must be confessed that it still throws little, if any, light on those inquiries into the animal body which are the most interesting to the naturalist and physician.

Another important difference between animal and vegetable matter when analysed by fire, is found in the fixed residuum which remains after distillation in close vessels. In vegetable matter this is composed principally of charcoal, in a very pure and easily combustible state, and of a small proportion of vegetable ashes, from which a fixed alkali is procurable. In animal matter, the coal which remains is very difficult of combustion, and leaves, for the most part, a large proportion of PHOSPHORIC salts, generally united with lime. Likewise, if the animal matter be mixed with a fixed alkali before calcination, the PRUSSIC acid, a substance peculiarly of animal origin, is found in the residue of combustion.

The great energy with which the nitrous acid acts upon almost every substance immersed in it, has long rendered it a most valuable instrument of analysis to the chemist; but as this acid is itself more or less decomposed in by far the greater number of operations in which it is employed, a previous knowledge of the intimate nature of this acid is requisite, in order to enable the chemist to explain the appearances which it produces when in chemical action. This having been obtained by the ingenious researches of several eminent chemists, among whom we may particularly mention the names of Cavendish and Priestley, the use of the nitrous acid has thrown considerable light on the nature of

animal matter. The experiments of M. Berthollet on this subject (Mem. Acad. des Sciences, 1780 and 1785), are so complete and original, as to leave little further to be done by subsequent experimenters, to explain the ultimate composition of the great mass of animal matter.

M. Berthollet began his operations by treating various animal substances with nitrous acid, in the same method which Bergman had pursued in order to obtain that acid from sugar, which has been termed the *saccharine* or *oxalic*. He chose silk for his first experiment, on account of the apparent uniformity of its composition. On distilling silk with seven or eight times its weight of nitrous acid, it was soon attacked by the acid, gave out copious red fumes, and presently dissolved into a clear bluish liquor. This, on cooling, yielded a considerable quantity of crystals of oxalic acid, exactly similar to that obtained from sugar by a similar treatment. Besides this acid, however, there was found swimming on the surface of the liquor, when cooled, a quantity of oily or greasy matter, which again dissolved by heat, and remained in intimate combination with the solution of the oxalic acid. To obtain this greasy matter, M. Berthollet observes, less of the nitrous acid should be used than is necessary to give the largest product of oxalic acid.

This excellent chemist then repeated the experiment with a variety of animal matters, in all of which he found similar results, though with a wide difference in the respective proportions of animal grease, and oxalic acid. Of all the substances used, wool was found to give the greatest quantity of oxalic acid. From six gros M. Berthollet obtained somewhat more than half the weight of the crystallized acid, whereas sugar itself only gives about one third of its weight. Skin and hair gave nearly the same results as wool. On the other hand, animal muscle or flesh, deprived as much as possible from any adhering fat, yielded, with nitrous acid, a very large portion of the abovementioned grease, and a very small quantity of oxalic acid, which could hardly be separated by crystallization from the grease which the liquor contained. Sixteen ounces of veal, reduced by drying to four ounces, yielded three gros (eight of which make an ounce) of oxalic acid, and a small portion of grease. Thirty-two ounces of whites of eggs, hardened by boiling, and reduced by drying to two ounces, gave two gros and a half of acid, and a moderate quantity of grease.

The author then proceeds to some remarks on the nature of this peculiar greasy matter, which deserve attention.

Vegetable substances, he observes, though certainly containing oil in their composition, when treated with nitrous acid, have their oil so entirely destroyed by its action, that no traces of it can be detected after this operation. Animal matter, on the contrary, always yields more or less of an oily or greasy substance after distillation with nitrous acid, which grease in part adheres strongly to the oxalic acid, and makes it difficult of crystallization, and in part combines with the distilled acid, giving it an unusual yellow colour, and the disagreeable odour of all animal oils. This latter portion may be separated chiefly, but not entirely, by saturating the acid with an alkali, when the animal oil concretes into a stiff grease.

The animal oil differs also from the vegetable, particularly in giving much volatile alkali by distillation, whereas the vegetable yields an empyreumatic acid. It is to be observed, that the oil, both animal and vegetable, which is here spoken of, is not that which in animals is separated in the form of fat, and is secreted in the cells of the adipose membranes; and in vegetables, is deposited in the oil cells of seeds and fruits, or united with mucilage and farina in the emulsive plants; but it is an oil which seems to be most intimately united with every animal and vegetable substance, and never

appears in the form of oil or grease, unless when separated by some powerful chemical agent, such as the nitrous acid.

We have mentioned it to be the most striking characteristic of animal matter, to yield a certain quantity of ammonia by distillation *per se*; and we shall now return to this subject, which indeed is directly connected with all that has preceded, and examine into the cause of this product. Under the article AMMONIA, we mentioned how much chemistry was indebted to the successful labours of M. Berthollet for a knowledge of the exact proportion of the constituent parts of this alkali, and particularly of the theory of its production during the decomposition of animal matter.

Ammonia is formed of about three parts of azot, or animal mephitis, as it is sometimes termed, and one of hydrogen. A simple and convincing proof that it is not originally contained in animal matter in the form of an alkali, is, that after animal substances have been dissolved in nitrous acid, no nitrated ammonia can be detected by the minutest examination. But the constituent parts of the volatile alkali must be contained in the animal matter, otherwise it could not yield it by simple distillation. Dr. Priestley has observed, that when animal flesh is immersed in nitrous acid, there is an immediate disengagement of gas which is chiefly phlogisticated (*azotic*) air, but sometimes mixed with nitrous gas, and with fixed air. With the same view, M. Berthollet added to an ounce of silk (Mem. Acad. des Sciences, 1785), six ounces of concentrated, pale, nitrous acid, at the temperature of 70°. Nearly 120 ounce measures of gas were disengaged without heat, of which a small part was absorbed by lime water, and was fixed air, and the remainder gave all the appearances of azotic air. The silk being entirely dissolved, a small portion of the greasy matter which we have mentioned above, concreted, and was separated from the solution. Lime-water being added, no precipitation took place, which was a proof that no oxalic acid had yet been formed by the action of the nitrous acid, for, adding afterwards a drop of oxalic acid, an immediate precipitate appeared. The solution being then gently warmed, a violent effervescence took place, nitrous gas was given out in abundance, with the production of much heat, and the solution *now* contained a considerable quantity of oxalic acid. From this experiment it appears, that there are two distinct periods of the operation of nitrous acid on animal matter; the first, its action without heat; the second, after heat has been applied. The first produces a large portion of nearly pure azotic gas, and it is interesting to determine whence is its origin, as azot is a constituent part of nitrous acid, as well as of animal matter; it is rendered highly probable, however, that the azotic gas produced in the first instance, owes its origin to the animal matter, and not to the nitrous acid, since the latter is capable of acting afterwards with equal energy, as if heat had been applied immediately, and of giving as much nitrous gas. Moreover, M. Fourcroy has observed, that the nitrous acid, after being digested *without heat* upon animal matter, is able to saturate as much alkali as before the process, which is as convincing a proof of its non-decomposition as we can well have. Therefore, we may consider it as well established, that when nitrous acid and animal matter are digested together, without using artificial heat, the azotic gas which is produced in such abundance arises solely from the animal substance; that at this period no oxalic acid is formed, but some of the peculiar greasy matter is produced. Afterwards, on heating the mixture, the nitrous acid is itself rapidly decomposed, forming the nitrous gas which escapes, and giving its oxygen to that part of the animal matter which furnishes the basis of the oxalic acid, besides probably occasioning other changes

ANIMAL MATTER.

changes in which, as the component parts of the nitrous acid are also found in animal matter, the exact operation of the materials furnished by each cannot be distinguished.

The proof of the existence of azot in animal matter being thus established, we can readily account for the formation of ammonia during distillation *per se*, or putrefaction, by an union of the animal azot with hydrogen, which may be furnished ally from the animal substance, perhaps from the decomposition of water, which is abundantly contained in every part of the animal kingdom.

Another proof of the connexion between the azot of animal matter, and the production of ammonia, has been furnished in the following ingenious manner by M. Berthollet. For this purpose he made comparative experiments between the inflammable air of marshes, the gas furnished by the distillation of sugar, of charcoal, and of oil, and the gas yielded by silk distilled *per se*. Of these four latter substances (for the former may be neglected for our present purpose), the sugar, charcoal, and oil, are vegetable, and give no ammonia by distillation; the latter is animal, and, like all animal matters, produces this alkali. The gas furnished by each was exposed to lime water, and detonated with oxygen, in order to absorb every thing but the azot. Now, as the silk, being of animal origin, contained much more azot than the other substances, it ought to have left a much greater residuum of azotic gas, unless the latter entered into some new combination during the distillation of the silk, by which its form of azotic gas would be lost. As the residuum was not sensibly greater than the rest, the azot must have assumed a new form during distillation, and this could have been no other than the volatile alkali which was directly dissolved in the water, through which the distilled gasses passed unto the recipient.

Experiments of a later date than those of M. Berthollet, just cited, have shewn a disengagement of azotic gas, or a production of ammonia from animal matter, by the action of some other of the more powerful acids, and even of the fixed alkalies; but the operation of these is not yet satisfactorily explained, nor does it illustrate in so striking a manner the composition of the animal kingdom.

The limits between animal and vegetable matter, laid down by the presence of azot and the production of ammonia, though for the most part sufficiently precise, are, in a few instances, surpassed.

These are, by those vegetable products, which have been termed *vegeto-animal*, because they resemble certain corresponding animal matters in the characteristic properties above mentioned.

The *gluten* of wheat, and some other parts of vegetables, bears a considerable affinity to animal gluten in various properties, and, like it, contains azot, and yields ammonia. The *albumen* found in the fresh juice of the succulent parts of the tetradynamous plants, is equally similar to the albumen of animals; and the vegetable fungi, when under putrefaction, exhibit to the chemist appearances strongly resembling those of decomposing animal matter.

In the analysis of animal matter, we have principally dwelt on the operation of the nitrous acid, as it has been the means of elucidating this subject in a peculiar manner, and as it furnishes a method of comparison by which the action of other chemical agents may be inferred with considerable accuracy. A few words should, however, be said on the operation of other re-agents in analysis.

The effect of heat on animal matter varies according to the degree which is applied. A gentle warmth simply dissipates the watery part, during which operation the sub-

stance generally loses a great part (sometimes by far the greatest) of its weight and bulk.

Animal matter, when thus dried, is long preserved from putrefaction, as moisture is essential to this process of decomposition. So, bodies of animals that have been overwhelmed in the dry hot sands of the African deserts, are first thoroughly desiccated, and then will remain in this medium for many years unaltered. A lower degree of warmth, however, if not sufficient to evaporate the moisture from animal substance, favours putrefaction, and increases all the tendencies to decomposition. On the other hand, animal matter, so perishable in itself, is preserved to all appearance absolutely unaltered, whilst exposed to a severe freezing cold. The blood (which when at rest in a moderate temperature, even within the blood-vessels, but especially when drawn out, very speedily coagulates), if suddenly frozen before coagulation, retains for a while its original properties; and when thawed in a gentle warmth, at *first* becomes liquid, and *afterwards* coagulates. In like manner, animal flesh employed for food may be preserved, when frozen, for any length of time; and, if thawed gradually, retains all its properties, even to the peculiar flavour which it possessed at first. A degree of heat from about 150° to that of boiling water, begins to produce upon animal matter certain chemical changes independent of the mere evaporation of water: the most important of these is the coagulation of the albumen, which is an abundant and almost constant ingredient in the animal juices. Under the article of albumen we have given the opinions of chemists concerning the cause of the singular property of coagulation by heat, which, however, is still not very clearly ascertained. Albumen, when once coagulated, is no longer soluble in boiling water, and hence it may be separated with ease from any watery solution in which it may be contained. A heat considerably greater than that of boiling water causes animal matter to swell considerably, to twist in every direction as if it still retained some degree of irritability; to soften or melt down, to exhale a copious dense vapour of a foetid smell; and, according as the heat is regulated, to yield an empyreumatic oil, an ammoniacal liquor, and often the prussic acid, with a considerable quantity of carbonic and hydrogen gasses, arising from the total decomposition of the substance employed.

Water is another re-agent in the analysis of animal matter, which may often be employed with considerable advantage. All the soft parts of animals, when kept immersed in cold water for a considerable time, appear to become thoroughly penetrated with this liquor, have their texture softened, and their bulk enlarged, and yield to its dissolving power all their saline, gelatinous, and albuminous contents. This solution is likewise considerably assisted by the commencement of putrefaction, which soon takes place in moist animal matter at a moderate warmth. The gluten or coagulum of the blood is, however, insoluble in water, when it has once separated by coagulation from the circulating liquor; and hence, by long and repeated effusion of cold water, the coagulum of blood may be freed from the red globules which give it its colour, and from every other extraneous matter, and at last remains in a state of great purity, in the form of a grey, tenacious, and elastic substance. Muscular flesh may be, in like manner, brought, by mere washing with cold water, into a similar state of purity. Animal oil or fat, which is naturally mixed with a kind of mucilage, may also be freed from it by melting, and repeated mixture with water, assisted by strong agitation. Heated water is a more active agent in softening the texture of animal matter, and extracting its soluble part; and the assistance of a boiling temperature renders completely soluble every kind of condensed

denf'd animal membrane, fuch as fkin, cartilage, tendon, and the like. At the fame time, however, heat coagulates the albumen, and renders it infoluble in water, fo that to obtain the full action of water on animal matter, it fhould be ufed firft cold, or only moderately warmed, and afterwards heated to ebullition. But there is no foft part of animal matter which can refift the united action of water and heat, when a temperature much above the boiling point is employed, by means of Papin's digefter. Gluten, albumen, gelly, and falts, are then all brought down to complete folution; the oil alone, for the moft part, remaining unmixed. Papin's digefter, therefore, when judiciously employed, may prove an inftrument of fome importance in animal analysis: but its ufe is attended with this inconvenience, that the fubftances difsolved in water by its powerful affiftance, cannot be feparated from each other by any means with which we are acquainted.

The cauftic alkalis are alfo employed in the analysis of animal matter, particularly as a folver for gluten and coagulated albumen, after the action of water has been exhaufted. The folution of animal matter in alkali, which is the moft familiar to us, is that of oil or fat, forming the well-known compound, SOAP. It would be of advantage to the experimental chemift if the operation of the alkalis were here confined to the oily ingredient, as this is fo little foluble in any other menftruum. But the inconvenience of ufig thefe powerful re-agents is fimilar to that of employing Papin's digefter, for they act with great energy on all the foft parts of animals indifcriminately, and confound the whole in one faponaceous mafs. This, indeed, may be confidered in general as the principal obftacle to any fatisfactory analysis of animal matter, that all the methods which the chemift can employ, are too general in their operation, and little calculated to mark thofe fhades of difference in the animal compofition, which, though perhaps flight when chemically confidered, certainly produce very important effects on the functions of the *living* body.

The chemistry of animal matter appears to us to be ftill too little known to admit of any fcientific arrangement which can give juft and comprehensive views of this extenfive, interefting, and complicated fubject. We fhall, therefore, refer the reader to the feveral articles under their refpective heads, which include, either generic diftinctions, fuch as gluten, albumen, gelly, and the like; or fpecific folids and fluids, fuch as bone, blood, milk, fkin, &c. The detail of a variety of important experimental inquiries which have been made by feveral eminent chemifts, affords an abundance of interefting matter, which promifes a copious harveft of difcovery to the follower of this branch of chemical purfuit.

ANIMAL motion is the fame with what we call *muscular motion*.

It is divided into two branches; natural or involuntary, and fpontaneous.

ANIMAL oil, fee OIL.

ANIMAL fecretion is the act whereby the divers juices of the body are fecreted or feparated from the common mafs of blood, by means of the glands. See SECRETION.

ANIMAL fpirits are a fine fubtle juice or humour in animal bodies; fuppofed by many to be the great inftrument of muscular motion, fenfation, &c.

The ancients diftinguifhed fpirits into three kinds, *viz.* animal, vital, and vegetative: but the moderns have reduced them to one fort, *viz.* animal; about the nature of which, and the matter whence they are formed, great difputes have

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arifen among anatomifts, though their exiftence has never been fairly proved.

In the *History of the Royal Academy of Sciences at Paris*, an. 1750, there is an ingenious memoir on this fubject by Mr. Beitin. He undertakes to prove, that the nervous fluids, or animal fpirits, circulate; that if they depart from the brain, they return to it by the nerves. In fhort, he propofes to form the courfe of this fluid into a fystem of circulation, lefs demonftrable, indeed, to the fenfes than that of the circulation of the blood, but, in other refpects, grounded on equally folid reafons.

As it is hard to define what could never yet be brought under the judgment of our fenfes, all that we fhall here offer concerning them, is, that they muft needs be extremely fubtle bodies, which efcape all manner of examination by the fenfes, though ever fo well affifted: and pervade the trafts of the nerves, which yet have no difcovery of cavity or perforation; nor could ever by any experiment be collected; yet are conftantly moving in vaft quantities, as they muft of neceffity be, to perform all thofe mighty operations which are afcribed to them. However, the antiquity of the opinion claims fome reverence.

By the help of thefe fpirits we are furnifhed with a vaft number of precarious folutions of great *phenomena*; and without them we muft leave a great chafm in the philofophical hiftory of animal bodies; but, after all, the *phenomena* that would, in this cafe, be unexplained, are, perhaps, to us inexplicable.

They are fuppofed to be feparated in the brain from the fubtleft parts of the blood; and thence carried by the nerves to all the parts of the body, for the performance of all animal and vital functions; and the difcovery of the GALVANIC *electricity* will probably throw confiderable light on this obfcure fubject. See NERVOUS FLUID.

ANIMAL fubftances, comprehend all the component parts of animals, of what ufe or intention foever they may be.

ANIMAL foffile fubftances, thofe found buried in the earth at various depths, and embodied among various *strata*.

These are principally of four kinds: 1. Sea fhells. 2. The teeth, bony palate, and bones of fifhes. 3. The bones of land animals. And, 4. complete fifh. See FOSSILE BONES, FOSSILE SHELLS, MARINE remains, and FOSSILE IVORY.

ANIMAL fubftances, fermentative quality of. See FERMENT, and FERMENTATION.

ANIMAL fystem, imports the whole clafs of beings endowed with animal life.

In which fenfe *animal fystem* amounts to the fame with what chemifts and others call the *animal kingdom*.

ANIMAL is alfo fometimes applied, in a figurative fenfe, to artificial or moral things.

Hobbes confiders government as a huge complex animal, under the denomination of *Leviathan*.

The reafon of the appellation is founded on the analogy between an animal and a political body. The fovereign, or legiflative power, answers to the foul; the magiftrates, to the limbs or members; rewards and punifhments are the nerves; riches, the ftrength; counfellors, the faculty of memory; equity, reafon; fedition, ficknefs; civil war, death.

ANIMALCULE, ANIMALCULUM, a diminutive of animal, and applied, in a general manner, to thofe creatures whofe true figure cannot be difcerned without the help of glaffes, and more efpecially of fuch as are invifible to the naked eye.

Animalcules are ufually divided into two, and, by fome, into three diftinct fections, *vifible*, *microfcopical*, and *invifible*: the firft, though vifible, cannot be accurately dif-

cles, are much longer than the tails of tadpoles are; and it is observed, that the animalcules in the semen of fishes have tails much longer, and more slender, than those in the semen of other animals, inasmuch that their extremities are not to be discerned without the bell glasses.

These animalcules appear to be very vigorous and tenacious of life; for they have been observed to move long after the animals, from which they were taken, were dead; and seem to be peculiar to the semen, as nothing that has the least appearance of life has been yet discovered in the blood, spittle, urine, gall, or chyle.

The production of animalcula infusoria is very surprising. In four hours time, an infusion of cantharides has produced animalcules less than even the tails of those in the semen of animals; and it is said, that hot mutton gravy, secured in a phial with a cork, and afterwards set among hot ashes, to destroy as effectually as possible every living creature that could be supposed to exist in it, has, nevertheless, been found swarming with animalcules, after standing a few days.

In the Philosophical Transactions, vol. lix., is the following curious account of the animalcules produced from an infusion of potatoes, and another of hemp-feed, by the late Mr. Ellis. "On the 25th of May, 1768, Fahrenheit's thermometer 70°, I boiled a potatoe in the New River water, till it was reduced to a mealy consistence. I put part of it, with an equal proportion of the boiling liquor, into a cylindrical glass vessel that held something less than half a wine pint, and covered it close immediately with a glass cover. At the same time I sliced an unboiled potatoe; and, as near as I could judge, put the same quantity into a glass vessel of the same kind, with the same proportion of New River water not boiled; and covered with a glass cover, and placed both vessels close to each other.

"On the 26th of May, twenty-four hours afterwards, I examined a small drop of each by the first magnifier of Wilson's microscope, whose focal distance is reckoned at $\frac{1}{100}$ part of an inch; and, to my amazement, they were both full of animalcula, of a linear shape, very distinguishable, moving to and fro with great celerity; so that there appeared to be more particles of animal than vegetable life in each drop.

"This experiment I have repeatedly tried, and always found it to succeed in proportion to the heat of the circumambient air; so that even in winter, if the liquors are kept properly warm, at least in two or three days the experiment will succeed.

"What I have observed are infinitely smaller than spermatic animals, and of a very different shape: the truth of which every accurate observer will soon be convinced of, whose curiosity may lead him to compare them; and, I am persuaded, he will find they are no way akin.

"At present, I shall pass over many curious observations which I have made on two years experiments, in order to proceed to the explaining a hint which I received last January from M. de Saussure, of Geneva, when he was here; which is, that he found one kind of these animalcula infusoria that increase by dividing across into nearly two equal parts.

"I had often seen this appearance in various species a year or two ago, as I found upon looking over the minutes I had taken, when I made any new observation; but always supposed the animals, when in this state, to be in coition.

"Not hearing, till after M. de Saussure left this kingdom, from what infusion he had made his observation; his friend, Dr. de la Roche, of Geneva, informed me, the latter end of February last, that it was from hemp-feed.

"I immediately procured hemp-feed from different seedsmen in different parts of the town. Some of it I put into

New River water, some into distilled water, and some into very hard pump water. The result was, that in proportion to the heat of the weather, or warmth in which they were kept, there was an appearance of millions of minute animalcula in all the infusions; and, some time after, oval ones made their appearance. These were much larger than the first, which still continued: these wriggled to and fro in an undulatory motion, turning themselves round very quick all the time they moved forwards. I was very attentive to see these animals divide themselves; and, at last, I perceived a few of the appearance of *fig. 3. a*, as it is represented by the first magnifier of Wilson's microscope: but I am so well convinced by experience that they would separate, that I did not wait to see the operation: however, as the following sketches, which I have drawn from five other species, will very fully explain this extraordinary phenomenon, there will be no difficulty in conceiving the manner of the first. See *fig. 4. 5, 6, 7, 8*.

"The proportion of the number of these animals, which I have observed to divide in this manner, to the rest, is scarce 1 to 50; so that it appears rather to arise from hurts received by some few animalcula among the many, than to be the natural manner in which these kinds of animals multiply; especially if we consider the infinite quantity of young ones which are visible to us through the transparent skins of their bodies, and even the young ones that are visible in the young ones while in the body of the old ones.

"But nothing more plainly shews them to be zoophytes than this circumstance, that when, by accident, the extremity of their bodies has been shrivelled for want of a supply of fresh water, the applying more fresh water has given motion to the part of the animal that was still alive; by which means this shapeless figure has continued to live, and swim to and fro all the time it has been supplied with fresh water."

The preceding remarks of Mr. Ellis are particularly satisfactory, as they point out the manner in which animalcula of various other kinds may be produced by infusions of vegetable matter; but it is probable he is mistaken respecting the species generated in the infusion of hemp-feed; and which is called *volvex ovalis*, or egg-shaped *volvex*. Perhaps this is *volvex globulator*, Linn., which is usually spherical, but of an oval form at intervals, and especially at the time the infant brood is separated from the parent: for it seems at that moment to divide, and become two distinct animalcules, as Mr. Ellis mentions. Vide *Plate III. of Vermes Infusoria, Microscopical Objects, &c. &c.*

As the different species will be more fully noticed in their respective places, we shall conclude our remarks with a few observations on the doctrine of equivocal generation, and the different opinions that have arisen respecting the origin and nature of animalcules in particular. Before the invention of microscopes, the doctrine of equivocal generation, both with regard to animals and plants of some kinds, was universally received; but this instrument soon convinced every intelligent person, that those plants which formerly were supposed to be produced by equivocal generation, arose from seeds; and the animals, in like manner, from male and female. But as the microscope threw light upon one part of nature, it left another involved in darkness: for the origin of animalcula infusoria, or the spermatic animals already mentioned, remains as yet as much unknown as that of many other kinds was, when the doctrine of equivocal generation reigned in full force.

The discovery of spermatic animalcules was thought to throw some light on the mysterious affair of generation itself; and the minute creatures were imagined to be each of them individuals of the same species with the parent. Here

the infinite number of these animalcules was an objection, and the difficulty remained as great as before; for, as every one of these animalcules must necessarily be produced from a male and female, to explain their origin by animalcular generation in the same manner, was only explaining generation by itself.

This hypothesis, therefore, having proved unsatisfactory, others have been invented. M. Buffon, particularly, hath invented one, by which he at once annihilates the whole animalcular world; and in this he has been followed by several ingenious philosophers. His hypothesis is diametrically opposite to that of Leeuwenhoeck, who described many distinct species of the spermatic animalcula as living bodies, and conceived it necessary that one or more of them should penetrate, or impregnate, the ovum, to effect the purpose of generation.

From a variety of experiments made on the human semen (mas.), M. Buffon concludes, that what have been called spermatic animals, are not creatures really endowed with life, but something proper to compose a living animal; and he distinguishes them by the name of *organic particles*. The same individual kinds of animals he declares he has found in the fluids separated from the ovaria of females; and for the truth of this appeals to the testimony of Mr. Needham, who was an eye witness of his experiments. He also brings an additional proof of his doctrine from Mr. Needham's observations on the milt of the calmar, a species of cuttlefish. Here the spermatic animals, at least what have only the appearance of life, are vastly larger than in any other creature, so as to be plainly visible to the naked eye. After considering the organization of these particles very fully, he concludes, that they are not animalcula, or endowed with life; and infers, that all the moving bodies that are to be found in the infusions of either animal or vegetable substances, are of a similar nature. To discover whether all the parts of animals, and all the seeds of plants contained moving organic particles, he made an infusion of flesh of different animals, and of the seeds of more than twenty different species of vegetables; and, after remaining some days in close glasses, had the pleasure of seeing organic moving particles in all of them. In some they appeared sooner, in others later; some preserved their motions for months, and others soon lost it. Some, at first, produced large moving globules, resembling animals, which changed their figure, split, and became gradually smaller. Others produced only small globules, whose motions were extremely rapid; and others produced filaments, which grew longer, seemed to vegetate, and then swelled, and poured forth torrents of moving globules. This observation gave rise to a new system; Baron Munchausen, perceiving that the last mentioned moving globules, after moving for some time, began to vegetate, concluded they were at first animals, and then plants: an hypothesis which Mr. Ellis endeavoured to overturn, by asserting, that they were no other than the seeds of that genus of fungi called *mucor*, or mouldiness; and that their motion is owing to numbers of minute animalcules attacking them for food.

M. Buffon is not, however, content with denying life only to those beings where the signs of it are most equivocal, but includes, in the same rank of organic particles, almost every animal too small to be discovered by the naked eye; and even some of those whose motions are evidently perceptible to the naked eye. He observes, that "almost all microscopic animals are of the same nature with the moving bodies in the seminal fluids, and infusions of animal and vegetable substances. The eels in paste and vinegar, &c. are all of the same nature, and derived from the same origin.

There are, perhaps, as many beings that either live or vegetate, produced by a fortuitous assemblage of organic particles, as by a constant and successive generation. Some of them, as those of the calmar, are only a kind of machines, which, though exceedingly simple, are very active. Others, as the spermatic animalcules, seem to imitate the movements of animals. Others resemble vegetables in their manner of growth and extension. There are others, as those of blighted wheat, which at pleasure can be made alternately to either live or die, and it is difficult to know to what they should be compared. There are still others, and in great numbers, which are at first a kind of animal, then become a species of vegetables, and again return alternately to their vegetable state. The eels in paste have no other origin than the union of the organic particles of the most essential part of the grain. The first eels that appear are certainly not produced by other eels; but though they are not propagated themselves, they fail not to engender other living eels. By cutting them with the point of a lancet, we discover smaller eels issuing in great numbers out of their bodies. The body of this animal seems to be only a sheath, containing a multitude of smaller animals, which perhaps are other sheaths of the same kind, in which the organic matter is assimilated into the form of eels."

The accurate experiments of Baker, Ellis, Muller, Corti, Rosfredi, and many others, sufficiently refute the inconclusive reasoning of Buffon; and we cannot do better than conclude, in the words of a late ingenious writer, Mr. Adams, who has treated at some length on the same subject in his *Essays on the Microscope*.

"Though we can by no means pretend to account for the appearance of most animalcula, yet we cannot help observing, that our ignorance of the cause of any phenomenon is no argument against its existence. Though we are not, for instance, able to account in a satisfactory manner for the origin of the native Americans, yet we suppose M. Buffon himself would reckon it absurd to maintain, that the Spaniards, on their arrival there, found only ORGANIC PARTICLES moving about in disorder. The case is the very same of the eels in paste, to whose animation he objects. They are exceedingly small in comparison with us; but, with the solar microscope, Mr. Baker has made them a more respectable appearance, so as to have a diameter of an inch and an half, and a proportionate length. They swam up and down very briskly; the motion of their intestines was very visible; when the water dried up, they died with apparent agonies, and their mouths opened very wide. Now, were we to find a creature of the size of this magnified eel gasping in a place where water had lately been, we should certainly never conclude it to be merely an ORGANIC PARTICLE, or fortuitous assemblage of them, but a fish. Why then should we conclude otherwise with regard to the eel in its natural state, than that it is a little fish? In reasoning on this subject, we ought ever to remember, that however essential the distinction of bodies into great and small may appear to us, they are not so to the Deity, with whom, as Mr. Baker well expresses himself, 'an atom is a world, and a world but as an atom.' Were the Deity to exert his power a little, and give a natural philosopher a view of a quantity of paste filled with eels, from each of whose bodies the light was reflected as in the solar microscope; our philosopher, instead of imagining them to be mere organic particles (as the paste would appear a little mountain), would probably look upon the whole as an assemblage of serpents, and be afraid to come near them. Whenever, therefore, we discover beings, to appearance endowed with a principle of self-preservation, or whatever we make the characteristic

characteristic of animals, neither the smallness of their size, nor the impossibility of our knowing how they came there, ought to cause us to doubt of their being animated."

ANIMALIZED Matter of Vegetables. See **VEGETO-Animal Matter.**

ANIMALLY, in *Geography*, a town of Hindostan, in the Coimbatore country, 35 miles west of Daraporum, and 18 south of Coimbatore. N. lat. $10^{\circ} 40'$. E. long. 77° .

ANIMATE, **ANIMATED**, something endued with life, or a living soul.

In mechanics, *animate power* is used to denote a man, or brute; in contradistinction to *inanimate power*, as springs, weights, &c.

Naturalists and philosophers differ extremely in assigning the characters, subjects, and species of animate bodies. Some include stocks and stones in this rank; others exclude brutes themselves.

Some of the ancient philosophers have held all nature to be *animated*; that the sun, the earth, the planets, rivers, trees, stones, &c. are so many animals; others, that the whole system is only one huge animal, informed with a soul, or *anima mundi*. Plato, in *Timæo*. Morhoff. Polyh. Phil. lib. ii. p. 1. cap. 11.

ANIMATED Horse-hairs. See **GORDIUS SETA.**

ANIMATED is also used to denote a thing impregnated with vermin or **ANIMALCULES.**

In this sense the whole earth may seem to be animated; since in every part of it we meet with an infinite number of animals, either visible or invisible; they are found in air, water, earth, plants, and even in the hardest stones; and there is, perhaps, no animal known which does not breed numbers of others in the different parts of its body.

ANIMATED mercury, among *Chemists*, signifies quicksilver, impregnated with some subtle and spirituous particles, so as to render it capable of growing hot when mingled with gold.

ANIMATED needle, a needle touched with the loadstone, or **MAGNET.**

ANIMATION, signifies the informing of an animal body with a soul.

Thus the *fetus* of the womb is said to come to its animation, when it begins to act as a true animal; or after the female that bears it is *quick*, as the common mode of expression is.

The learned are not agreed about the time when the female becomes quick; some compute it at forty days after conception; others fix it about the middle of the term of **GESTATION.**

T. Fienus Gardinius, Verde, Fort. Licetus, F. de Bonnonia, have written expressly on the animation of the **FŒTUS**; Fr. Zanellis, on the animation of the **SEED.**

ANIMATION is also used by some *Mechanical Philosophers* for the act of soliciting the descent of a body, so as to give it continually new degrees of **ACCELERATION.**

ANIMATOR is also used, by *Alchemists*, for the operation of fermenting a white foliated earth, with a kind of philosophical or celestial water or sulphur.

ANIMATION is also used, in a moral or figurative sense, for the act of giving life and force to a discourse, or the like.

ANIMATION is also used by *Hermetic Philosophers*, to denote a certain state of perfection to which a body is brought by some appropriate process, in virtue whereof it becomes capable of producing some extraordinary *phenomena.*

ANIMATION, *suspended*, for the method of treatment in cases of, see **DROWNING.**

ANIME, **ANIME** & *cancaum*, in *Pharmacy*, a kind of resin, whereof there are two kinds, the *western* and *eastern.*

The *western* flows from an incision of a tree in Brazil and New Spain, and in the island of Antigua, called *courbaril*, a species of **HYMENÆA**; and by Pifo, itaiba: the liquid juice, according to Pifo, running down from the tree, sinks into the ground, and is afterwards dug up; so that the larger masses are often full of earth.

The *eastern* gum anime, which is a finer sort, is distinguished into three kinds: the first is white; the second blackish, in smell like myrrh; the third pale, resinous, and dry.

The small tears are the purest; it has little taste, but an agreeable smell; it easily breaks between the teeth, but if chewed for some time, it softens, and becomes adhesive. Laid on red-hot iron, it melts immediately, catches flame, and burns quickly away, leaving a small quantity of white ashes. It gives but little or nothing to water, but dissolves entirely in rectified spirit; the solution being of a yellow colour, with the odour of the anime, and a warm, pungent, bitterish taste. A small portion of essential oil is obtained by distilling with water a large quantity of anime. This resin has often been confounded with gum copal.

The Brazilians are said to employ anime in fumigations for pains proceeding from cold and rheumatism; they also chew it for the relief of colics and flatulencies; it has been also recommended in catarrhal and paralytical affections; and applied for complaints of this kind, bruises, &c. in liniments and plasters. With us, however, it is rarely, if ever, made use of for any medicinal purpose. The Indians prepare from it an excellent varnish. Lewis and Murray. In our shops we have only the American sorts of this resin.

ANIMÉ, in *Heraldry*, a term used by the French heralds, when the eyes of any rapacious animal are borne of a different colour. The English blazon it *incensed.*

ANIMELLÆ, the glands under the ears, &c. called also *lacrimeæ.*

ANIMETTA, in *Ecclesiastical Writers*, denotes the pall or cloth wherewith the cup is covered in the eucharist.

ANIMI deliquium. See **LIPOTHYMYA** and **SWOONING.**

ANIMOTHA, in *Ancient Geography*, a town of Arabia, according to the *notitia imperii.*

ANINA, a town of India, on the other side of the Ganges, according to Ptolemy.

ANINACHA, was also, according to Ptolemy, a town of India beyond the Ganges.

ANINETUS, **ANINETUM**, or **ANITATUM**, in *Geography*, a town of Asia under the patriarchate of Constantinople.

ANINGA, in *Commerce*, a root growing in the Caribbee islands, of use in the refinement of sugar.

The decoction of this root is found a more certain, as well as more innocent means of clarifying sugar, than the sublimate and arsenic used for this purpose, before the discovery of the *aniga.*

ANIO, or **ANIEN**, of Statius (lib. i. v. 20.), in *Ancient Geography*, now **IL TEVERONE**, a river of Italy, rises in Mount Treba or Trevi, towards the frontier of Abruzzo, passes through the country of the Æqui, then separates the Latins from the Sabines, forms three large lakes in its course, and running through the Tiburtine territories, it precipitates itself from a great height, and forms a rapid cataract, whence Horace "Præcepit Anio." It falls into the Tiber, about three miles to the north of Rome, not far from Antemnæ. The epithet, formed from the name of this river, is **Anienus**; and this was said to be the name of the god of the river.

ANIOIA, in *Geography*, a town of Italy, in the kingdom of Naples, 13 miles south-east of Nicotera.

ANJOU, so called from the ancient *Andes*, or *Andegavi*, a province of France before the revolution, about seventy miles

miles long and sixty broad; it bounded to the east by Touraine, to the south by Poitou, to the west by Bretagne, and to the north by the river Maine. The capital is ANGERS; besides which, the chief towns are La Fleche, Chateau-Gontier, Saumur, Brissac, Beauge, Passavant, Beaufort la Vaule, Beaupreau, &c. It has many rivers, six of which are navigable; namely, the Loire, Vienne, Thoué, Loire, Mayenne and Sarthe. The climate is temperate, and the face of the country agreeably diversified with hills and vallies. The productions of the soil are wine, chiefly white, grain, peas and beans, flax, hemp, and various kinds of fruit-trees, particularly walnuts and apple-trees. The fine pastures of Anjou furnish rich breeds of cattle; it has also several coal and iron mines, and good quarries of slate, stone, and marble; there are also saltpetre works, and some glass-houses: its commerce principally consists of wine, brandy, grain, cattle, cloths, luffs, ironmongery, &c. It formerly consisted of two counties, which, towards the end of the ninth century, were united; and it was annexed to the crown by Philip Augustus, in the year 1202. The departments of Mayne and Loire, the Sarthe and the Mayenne, now contain a part of this province.

ANJOU Cabbage, in *Botany*. See CABBAGE.

ANJOUAN, or AMIYAM, in *Geography*, a very small island of Africa, in the Æthiopic ocean. It is situated in the Mozambique gulf, between Madagascar and the coast of Zanguebar. The soil is fertile, and it produces excellent fruits.

ANIRITTE, in *Ancient Geography*, a people of the northern part of Marmarica, according to Ptolemy.

ANISCALPTOR, in *Anatomy*, a muscle, otherwise called *LATISSIMUS dorsi*.

ANISE-SEED, *anisum*, *anisum herbarius*, *anisum vulgare*, in the *Materia Medica*, a medicinal seed, produced by an umbelliferous plant of the same name, which is a species of PIMPINELLA, an annual plant, growing naturally in Egypt, Syria, and other eastern countries; and cultivated for culinary and medicinal uses in France, Spain, Malta, Upper Saxony, and Thuringia. It was cultivated here in the time of Turner, in 1551; but our summers are seldom warm enough to bring the plant to perfection. The seeds are annually imported from Malta and Spain; and the seeds of Spain, which are smaller than those of France and Germany, are accounted the best.

Anise-seeds are roundish and striated, flattened on one side and pointed at one end, of a pale colour inclining to green. They have an aromatic smell, and a pleasant warm taste, accompanied with a degree of sweetness. They totally give out their virtue to rectified spirit; the tincture is of a bright lemon colour, and agreeable taste. The spirit distilled from the filtered tincture has a light taste of the seeds, but the greatest part of their virtue is left behind in the extract, which is a pleasant, sweetish, moderately warm, and not very pungent aromatic. Infused in water, they impart a little smell, but scarcely any taste; and in distillation they give out their whole flavour. With the water rises an essential oil, to the quantity of an ounce or more from three pounds; this oil is of a yellowish colour, and it congeals, when the air is not sensibly cold, into a butyraceous white conerete; its smell is extremely durable and diffusive, but in taste is milder and less pungent than that of any other distilled vegetable oil.

The seeds likewise yield by expression an oil of greenish colour, less grateful taste, and strongly impregnated with the flavour of the seeds; sixteen ounces, lightly moistened by being exposed to the steam of boiling water, are said to afford one ounce. This oil is composed of a gross, insipid, inodorous one, such as the common expressed oils, and a part

of the essential oil of the seed, on which the flavour depends. The essential oil is contained in the outer thin skin of the seeds, and the expressed oil in the kernel itself.

Anise-seeds, which are ranked among the four greater hot seeds, have been long employed as a carminative and aromatic; they have also been esteemed useful in pulmonic complaints, and to possess, like those of feniel, a power of promoting the secretion of milk, and on this account given to nurses; in proof of which it is alleged from Geoffroy, that the odour is perceived in the milk. But their chief use is in flatulent colics, in the gripes to which children are subject, in flatulent pains and obstructions of the breast, in weakness of the stomach and indigestion, in diarrhæas, and for strengthening the tone of the viscera and intestines in general; and hence they were called by Van Helmont, "Solamen intelligentium." The essential oil, which is the only official preparation of aniseeds now directed by the Pharmacopœias, is usually grateful to the stomach, and may be taken in the dose of twenty drops. In diseases of the breast, the oil is preferred; but in flatulencies and colics, the seeds, in substance, are said to be more effectual. It is asserted, that the oil is poisonous to pigeons. A spirituous water prepared from a mixture of equal parts of aniseed and angelica, by drawing off a gallon of proof spirit from half a pound of each of the seeds, is commonly kept in the shops, and proves an elegant carminative cordial. They are usefully combined with the purgatives that are administered in flatulencies and gripes. Lewis. Newman. Murray. Bergius.

ANISE-SEED, *florary*. *anisum stellatum*, is a seed thus called from the affinity it bears in smell to the common anise-seed, and the star like figure of its *capsule seminales*. It is the produce of a small tree growing in Tartary, China, and the Philippine islands, which is the *ILLICIVUM anisatum* of Linnaeus.

It was first brought into Europe from the Philippine islands by an English mariner, named Thomas Candy, Candish, or Cavendish, in his return from a voyage round the world in the year 1601. The natives call it *damor* and *zingi*; the Europeans sometimes *foeniculum Sinesse*, or Chinese fenel; botanists, *anisum Indicum*, *anisum peregrinum*, *anisum exoticum Philippinarum insularum*, *cardamomum Siberiense*, *badianum*, &c. In smell and taste this resembles the common anise-seed; but with the aromatic taste is combined a sweetness, and in both respects it is stronger. The capsules or husks affect the tongue more than the seed, but the flavour of the seeds is accompanied with a greater sweetness. The seeds afford in distillation with water, the largest quantity of essential oil; and the capsules yield with spirit, the most acrid, resinous extract. The oil is more limpid, and more fragrant, than that of the common anise-seeds; and the spirituous extract is much warmer and more pungent: for medical purposes, the capsules and seeds are bruised together.

Its virtues are of the same kind with those of the common anise seed, only that it is sweeter, more grateful, penetrating, and aromatic. It is reputed a general cordial and strengthener, and used for this purpose in the eastern countries, and in some parts of Europe; but it has not been received in practice among us, and is rarely found in the shops.

The Chinese use it in the preparation of their tea, and they chew it for sweetening their breath; and after their example, the Dutch also use it in this liquor, pretending it makes it more pleasant.

The wood is also imported into Europe, where it is employed in works of marquetry and mosaic: it is also called *anil*. Lewis. Murray. Newman. Cartheuser.

ANISIFOLIUM, in *Botany*. See LIMONIA.

ANISOCALIUM,

ANISOCALIUM, a name given by some naturalists to the *SERTULARIA MYRIOPHYLLUM* of Linnæus; *myriophyllum pelagicum* of Zanich. Ginani, &c.; *muscus maritimus*, *filicis folio* of C. Bauh. and pheasants' tail coralline of Ellis. See *MYRIOPHYLLUM*, *SERTULARIA*.

ANISOMARATHRUM, in *Botany*. See *SCANDIX*.

ANISUM Africanum. See *BUBON*.

ANISUS, or **ANASUS**, in *Ancient Geography*, a river of Norica, which falls into the Danube.

ANITHA, a town of Arabia Petraea, according to Ptolemy.

ANTIGORGIS, a town of Hispania Bœtica, mentioned by Livy (lib. xxv. c. 32.), when describing the campaign of Cornelius and Scipio, who advanced to this town, and encamped in the sight of the enemy, from whom they were separated by the river.

ANIUS, a river called *Æas* by Stephan. Byz.; and by Livy, *Aous*; which discharges itself into the Adriatic to the south of Apollonia.

ANIUS, *Lugo Sulatorio*, a place of Campania, near Puteoli.

ANIZA, in *Geography*, a town of Arabia, 200 miles north-west from Jamama.

ANIZY LE CHATEAU, a town of France, in the department of the Aisne, and chief place of a canton, in the district of Chauny, eight miles north-east of Soissons, and ten south-east of Chauny.

ANKER, *Анкор*, a liquid measure chiefly used at Amsterdam, &c.

The *anker* is the fourth part of the *awon*, and contains two *stekans*; each *stekan* consists of sixteen *mengles*, the *mengle* being equal to two Paris pints.

ANKER, in *Geography*, a river of England, which rises about one mile and a half south-west of Hinkley, in Leicestershire, and joins the Tame at Tamworth, in Warwickshire.

ANKEVEEN, a town of the United Netherlands, in the State of Utrecht, one mile and a half south-west from Naerden.

ANKLE, *Joint of the*, in *Anatomy*, is made by the apposition of the astragalus, or upper bone of the foot, to the lower part of the tibia and fibula, which are, for that purpose, tied together by a strong band of ligaments both before and behind.

The tibia and fibula send down two processes, called malleoli, which are applied to the sides of the astragalus, support it in its situation, and render the joint very secure. The form of the bones allows them to be moved chiefly forwards and backwards, so that the joint is accounted a ginglymus. When the back part of the astragalus is moved forwards, the toes are pointed to the ground, and the foot is said to be extended; in the contrary position, it is said to be bent upon the leg.

When the joint is bent, the form of the astragalus so exactly corresponds to the space in which it is received between the tibia and fibula, that no motion can take place; but when it is extended, the narrow back-part of the astragalus coming forwards between the malleoli, a space exists between the bones, and a motion of the astragalus from side to side (such as takes place in directing our steps) is permitted.

In this joint we have the usual apparatus of cartilages to cover the ends of the bone; a capsule to contain the synovia; portions of fat, denominated synovial glands; and restraining ligaments to bind the bones together (see *JOINT*, *Structure of*). The capsule of that joint appears in front a little loose, so that it can be pinched up with a pair of forceps,

and here also are seen those portions of fat which have been accounted synovial-glands: behind, the capsule is covered by bands of restraining ligaments which conceal it, and strengthen that part of the joint; but the principal strength and restraint to the improper motions of the joint is found, as is common in ginglymoid articulations, at the sides. The internal lateral ligament (*ligamentum deltoideus malleoli interni* of Weitbrecht), which is radiated, extends from the point of the malleolus internus to the astragalus and os calcis. The external lateral ligament (*ligamentum malleoli externi perpendicularare*, Weitbrecht), extends from the point of the malleolus externus to the os calcis. There are also two other bands of ligaments passing from the fibula to the astragalus, one in front, and the other behind the last-mentioned ligament. Weitbrecht mentions these under the names of *ligamentum malleoli externi, antierius & posterius*. These ligaments are in a state of great tension, and prohibit any motion when the joint is bent; but are relaxed, and allow of that motion which is useful in the direction of our steps when it is extended.

ANKLE, *luxation of*, in *Surgery*; see *LUXATION* and *DISLOCATION*.

ANKUN, in *Geography*, a town of Germany, in the circle of Upper Saxony and principality of Anhalt; is so near to Zerbit on the west, that it is denominated a suburb to that city, but has a corporation of its own.

ANLERY, a town of France, in the department of the Nycore, and chief place of a canton, in the district of Decane, 15 miles east from Nevers.

ANN, *Cape*, is the point of land, in the town of that name, or *GLOUCESTER*, which forms the north side of Massachusetts Bay, as Cape Cod does the south side. It was so named in honour of Ann, consort of king James I. N. lat. 42° 45'. W. long. 70° 17'.

ANN, *St.* is the chief town of the province of Parana, in the eastern division of Paraguay, in South America.

ANN, *St.* a lake in Upper Canada, to the north of Lake Superior, which sends its waters north-easterly into James's Bay, through Albany River. Its north-eastern point lies in N. lat. 50°. W. long. 88°.

ANN, *Fort*, in the state of New York, lies at the head of Battyaux navigation, on Wood Creek, which falls into South Bay, Lake Champlain, near Skenesborough.

ANN's, *St.* a port, on the east side of Cape Breton island, accommodating fishing-vessels, and lying on the north-west side of the entrance into Labrador Lake. N. lat. 47°. W. long. 60°.

ANN's, *St.* a small town on the river St. John's, in the province of New Brunswick, about 80 miles from St. John's, and almost opposite to Frederick-town. It is at present the seat of government.

ANN's, *St.* sometimes called *Egane*, lies at the bottom of a bay, on the north-east part of Borneo island, in the East Indies. N. lat. 5° 50'. E. long. 116° 20'. This bay, called *St. Anne's Bay*, is a very considerable bay of the Eastern Ocean, opposite to St. Michael's islands. It has a free and open entrance, a good depth of water, and safe anchorage.

ANN's, *St.* a bay of Campeachy, in the Gulf of Mexico, in N. lat. 18° 10'. and W. long. 92° 25', nearly south-west from Cape Concededo.

ANN's, *St.* is a harbour on the north coast of the island of Jamaica, in N. lat. 18° 54', and W. long. 77° 12'. It is a good anchoring-place, and the largest sugar ships may lie with their sides close to the wharf.

ANN's, *St. Point*, is to the larboard of the entrance into Milford Haven, on the coast of Wales.

ANN'S, *St. Point*, is also in the straits of Magellan, in that part which bends to the south, and on the west side of it, on the Patagonian shore, four leagues from Cape Froward, the most southerly point of the American continent. Here are good wooding, watering, and fishing.

ANN'S, *St. Port, Arglus, or Killough*, lies on the east coast of Ireland, between Carlingford and Strangford.

ANNA is one of the three principalities into which Arabia Deserta is divided.

ANNA is also one of the chief cities of the above principality, and was formerly a famous market town, though it is now not much frequented. It is situated in N. lat. $33^{\circ} 57'$, E. long. $42^{\circ} 10'$, on the river Euphrates, in a fruitful and pleasant soil, and has two streets which are divided by the river: that on the Mesopotamia side is about two miles long, and thinly peopled by traders; that on the opposite side is about six miles in length, and this part is inhabited by the principal people. Every house has some ground belonging to it, which produces a variety of excellent fruit-trees, as lemons, oranges, citrons, quinces, figs, dates, pomegranates, and olives: some of the flat ground is sown with corn and other grain, which it yields in great abundance. The city is the common rendezvous of all the robbers that infest the country; here they hold their council, and settle their plans of depredation; and from hence they disperse themselves into all parts of the desert. This is one of the great thoroughfares through which the caravans pass to and from Aleppo, Tripoli, Damascus and Bagdad, and some other parts of the Turkish empire; and it is with difficulty, such is the character of the inhabitants, that the Turkish aga and the janizaries, who are kept here, can levy the tribute imposed by the Turks on all the commodities carried through this city. Mod. Un. Hist. vol. xxxvi. p. 440.

ANNA, in *Ancient Geography*, is a town of Palestine, to the north of Jericho. Josephus calls it *Aina*; and Berkeley thinks it is the same with Kana.

ANNA, a town placed by the periplus of Scylax on the coasts of Lydia; supposed to be *Avvaz*, or *Anza*, which belongs to Ionia or Caria.

ANNABERG, in *Geography*, a mine town of Germany, in the circle of Erzgebirg and electorate of Saxony, five miles south-south-west from Wolkenstein. The occupation of its inhabitants consists partly in mining, but chiefly in the lace-trade. The silver-mines of Schreckenbergr are not far from the town.

ANNABI, the name of mountains in Independent Tartary, supposed by M. d'Anville to be those of Altai; but they are evidently those of Alak, called by some Musart, on the north of Little Bucharia.

ANNABON, or ANNOBON, or *Happy Year*, the name given to an island of Africa by the Portuguese, who discovered it on New Year's Day, in 1526. This island lies to the east of St. Matthew, in S. lat. $1^{\circ} 50'$, and E. long. $5^{\circ} 10'$, 25 leagues south from St. Thomas island, and 45 from Cape Lopez Gonfalvo. According to Pyrad, it is five or six French leagues in circuit; but Baudrand makes its compass ten leagues. It has two high mountains, which being almost always covered with clouds, occasion frequent rain. It has a number of fertile vallies, producing Turkey corn, rice, millet, potatoes, yams, bananas, pine-apples, citrons, oranges, lemons, figs, tamarinds, and other delicious fruits. This island also affords oxen, hogs, sheep, goats, and poultry, in great plenty, and abundance of fish; but the only mercantile production is cotton, which is said to be equal to any produced in India; the quantity, however, is small. The

governor is a Portuguese; but the majority of the inhabitants are natives, who pay him implicit obedience, and are bigoted in their attachment to the Roman Catholic faith. There are two rocks on the south-east end of the island, which are dangerous to shipping: they are inhabited by a number of birds, so tame, that the sailors frequently feed and catch them with their hands. Ships, sailing for Europe from the Cape of Good Hope, frequently make this island; and the right road for them is on the north-east side, where they may anchor in six or seven fathoms water, and good ground.

The climate is wholesome, and the air clear and serene. Every part of the island is watered by pleasant brooks and fresh-water springs, which, in all high tides, become brackish: the banks are covered with palms, from which the inhabitants obtain their wine by incision; and among other fruits, this island produces a species of black nut of a purgative quality. Most of the dwellings on this island are cane-huts: the inhabitants are meanly clothed; the women have the upper part of the body naked; they carry their children on their backs, and suckle them over the shoulder; the men wear a linen-girdle round the loins, with a small flap before. Mod. Un. Hist. vol. xi. p. 459.

ANNABURG, formerly called *Lochau*, a town of Germany, in the Electorate of Saxony, and in a prefecture of the same name. This town is situated on an island, and contains a citadel which Anne, consort to the elector Augustus, caused to be rebuilt in the year 1572; whence the name. N. lat. $51^{\circ} 42'$, E. long. $12^{\circ} 54'$.

ANNA COMNENA, in *Biography*, was the daughter of the emperor Alexius Comnenus I. by his wife Irene, and no less distinguished by her talents than her rank. She was born at Constantinople in 1083, and devoted herself to the study of literature and philosophy, by which she acquired the reputation of the most learned lady of her age. Upon the death of Constantine, the son of Michael Duas, her intended husband, she married Nicephorus Bryennius, a young nobleman of distinction; on whose behalf she joined with the empress Irene in soliciting her father, in his last illness, to disinherit his son. When this scheme failed, she excited a conspiracy for deposing her brother; and upon her husband's impeding its success, she lamented that nature had mistaken their sexes, as he ought to have been the woman. Her plot was defeated; and Anna was punished by the confiscation of her property, which, however, was restored to her by the emperor; but she lost her whole influence at court. Having lost her mother first, and afterwards her father in 1118 (see ALEXIUS I.), and her husband in 1137, she endeavoured to soothe her mind in retirement, by composing a history of her father's reign; a work that was finished in 1148, still extant, and preserved in the collection of Byzantine historians. "This history was written," says Mr. Gibbon (Hist. vol. ix. p. 83. Svo.), "with an elaborate affectation of rhetoric and science, that betrays in every page the vanity of a female author." Nevertheless, it forms an useful contrast to the degrading and partial statements of the Latin historians. Zonaras gives her an excellent character, and informs us, that she engaged vigorously in the pursuit of learning, and had a peculiar attic elegance in her style; and being endued with a genius suited to elevated contemplations, she improved her natural abilities by intense study, for she was perpetually reading, or conversing with men of learning. Gen. Dict.

ANNAGH, in *Geography*, an island on the west coast of Ireland, about five miles in circumference, between the isle of Achiland the main land of the county of Mayo. N. lat. $53^{\circ} 58'$, W. long. $9^{\circ} 39'$.

ANNAGH, a small island of Ireland, in Lough Conn, in the county of Mayo, eight miles from Killala.

ANNAGH island, a small peninsula on the west coast of Ireland, and west coast of the county of Mayo.

ANNAGH UAN, a small island on the south-west coast of the county of Galway, 22 miles west from Galway.

ANNA IVANOWNA, in *Biography*, the second daughter of the Czar Ivan Alexiowitch, elder brother of the Czar Peter the Great, was born in 1693, married in 1710 to Frederick-William, duke of Courland, left a widow in 1711, and advanced to the Russian empire on the decease of Peter II. in 1730. Her counsels were under the absolute direction and influence of Ernest John Biren, a favourite of mean descent. Notwithstanding attempts to prevent his coming to Russia, he appeared immediately upon her arrival at Moscow; and formed a party, by whose influence the crown was offered to Anna, with the despotic authority possessed by her predecessors. Biren governed with vigour and capacity; but with such rigour, that more than 20,000 persons are said to have been sent to Siberia during this reign, though the empress herself was of a gentle and merciful disposition. The influence of Biren was so great, that though he treated the empress with arrogance and disrespect, he was able to carry any measure by a mere threat of returning to Courland, of which she made him grand duke. He lived in a style of magnificence superior to her's; and she had no table of her own, but used to dine with his family. The election of a king of Poland, a treaty to be concluded with Persia, and a war with the Turks, were the transactions that occupied Anne in the first years of her reign. Augustus, elector of Saxony, supported by Russia and Austria, became king of Poland, under the name of Augustus III. In 1735, Russia made a formal surrender of all her Persian possessions, for which the Russian merchants obtained mercantile privileges, to a considerable extent, in the territories belonging to Persia. The empress also, on this occasion, concluded a defensive treaty with the Shah against the Turks. Although, during the reign of Anne, the Russians and Austrians combined their forces, and threatened to shake the Ottoman empire, yet the expectations that were formed from the united efforts of these two powers were utterly disappointed. The Austrians made overtures of peace to the Turks; and instead of having made new conquests, they were obliged to restore Belgrade, the rampart of Hungary against the Turks; and the articles agreed upon between the Porte and Austria, were signed at Belgrade, September the 11, 1739. Soon after this event, the vizier manifested a disposition to negotiate even with Russia, nor was the empress averse from the measure: accordingly, on the 18th of September, a peace was effected between the court of St. Petersburg and the Porte. The conditions of this peace were, that Azof should be evacuated, together with its territory, and lie waste as a boundary between the two empires. Russia, however, was allowed to build a fortress on the Don, and the Porte was at liberty to construct another in the Kuban. The Greater and the Less Kabardia were to remain unoccupied as a frontier. The Russians were prohibited from keeping a fleet either in the Palus Mæotis, or in the Euxine; and the Russian merchants had licence only to carry on commerce in Turkish bottoms, in the latter. The Moldau, and all the other conquests made by the Russians, were restored to the Turks. In this contest, so disadvantageously terminated, Russia had lost above 100,000 men, and expended prodigious sums of money. Soon after the conclusion of peace with the Turks, the Russians were threatened by Sweden; but before the storm could burst from these threatening appearances, the empress Anne died,

in 1740, aged 47; and left the crown to her grand-nephew, Ivan, under the regency of Biren. Anne, during her reign of 10 years, acquired some portion of fame, by completing many things that had been begun by her uncle Peter I. Although her war with the Turks did not redound to much benefit, yet it convinced the Porte of the superiority of the Russian arms. The canal along the Ladoga lake, commenced under Peter I. conducive to the easier conveyance of provisions to St. Petersburg, was completely finished under Anne, in 1738. Anne renewed the project for investigating whether any connexion subsisted between North America and Siberia, and for exploring those regions that were unknown. Anne likewise, by the advice and assistance of Count Munich, improved the discipline of the Russian army; and established a seminary for the military education of young men of good families. With a view to the extension of commerce, Anne was induced to relinquish the Persian provinces; she fought for expert and industrious artificers and manufacturers, and procured for the country a great number of manufacturers in woollen stuffs and silk. She executed a new treaty of commerce with Great Britain, and governed at home with gentleness and equanimity, except in cases where punishment was thought necessary, which she inflicted with severity. The manners of the court at Petersburg, during her reign, took a softer and politer turn; drunkenness was discouraged, and the more decent pleasures of music and dancing were promoted.

Under Anne, the number of subjects was augmented by the return of the Zaporogian Cossacks to their submission to the Russian sceptre; the territory of the empire was also enlarged by the submission of the Kirghises; and thus the commerce between Russia and China was secured against the interruption which had been occasioned by the hostilities of the neighbouring Russian tribes. The reign of Anne would have been more happy for Russia, and her memory had in greater honour, if her favourite Biren had not abused the confidence she reposed in him, and rendered a multitude of persons and families completely wretched. *Tooke's Hist. of Russia*, vol. ii. p. 207—239.

ANNALE, in some *Middle-Age Writers*, denotes a day held every year in commemoration of the dead. In which sense *annale* amounts to the same with what is otherwise called *anniversarium*.

ANNALE is more particularly applied to the masses celebrated, during the space of a year, for the dead.

ANNALES libri, in the *Civil Law*, denote books wherein the acts and proceeding of a whole year were contained.

In which sense *annales* stand opposed to *semestres libri*, wherein the acts and constitutions of six months were contained. See **ANNALS**.

ANNALES baculi, denote a kind of wooden almanacks used among our ancestors, called also *runstocks*, or *clogs*.

ANNALES, in *Middle Age Writers*, denote yearlings, or young cattle of a year old, or under two.

ANNALES also denote a kind of rent, or annual revenue.

ANNALIS Actio, in the *Civil Law*, denotes an action which may be put in practice any time within the year. In the like sense we meet with *annale decretum*, or *negatum*, *annalis rescissio*, &c.

ANNALIS clavus, in *Roman Antiquity*, the nail which the prætor, consul, or dictator, fixed every year in the wall of Jupiter's temple, on the ides of September, to shew the æra or number of years from the building of Rome. This custom was afterwards changed, and the years were reckoned by the **CONSULS**.

ANNALIS exceptio, a kind of privilege anciently granted the people of Italy, that whoever had made a contract could not be compelled to the performance or payment of what had

been agreed on within the year. Some extend this privilege so as to render it still more grievous, by computing the year exclusive of all holidays.

ANNALS *Lex*, a law fixing the age for enjoying the different offices at Rome, which was first made by L. Valerius or L. Julius, a tribune of the commons, A. U. 573; and hence his family had the surname of *Annales*. Liv. lib. xl. c. 47.

ANNALS, an historical account of the affairs of a state, digested in the order of years.

The difference between *annals* and *history* is variously assigned by various authors. Some say that history is properly a recital of things which the author has seen, or been a by-stander to. What they build upon is, the etymology of the word; history in the Greek, signifying the knowledge of things present; and, in effect, *historia* properly signifies *to see*. On the contrary, *annals*, say they, relate to the transactions of others, and such as the writer never saw.

Of this opinion the great annalist, Tacitus himself, seems to have been; because the first part of his work, which treats of former times, he calls *annals*; but when he comes down to his own times, he changes his title, and calls it *history*. According to Sempronius Asellio, *annals* are a bare relation of what passes each year; whereas *history* relates not only to the transactions themselves, but also to the causes, motives, and springs of them. The annalist merely states his facts, but the historian reasons and descants on them.

Of this last opinion Cicero appears to have been, because when speaking of annalists, he says, *Unam dicendi laudem putant esse breviter, non exornatores rerum, sed tantum narratores*. He adds that history, in its original, was the composition of annals. Cicero relates the origin of annals: to preserve the memory of transactions, the *pontifex maximus*, says he, wrote what passed each year; and exposed it on a table, in his own house, where every one was at liberty to read it. This they called *annales maximi*; and this custom was kept up till the year of Rome 620. *Annales maximi* consisted of eighty books. They were most of them destroyed in the burning of the city by the Gauls. After the time of Sylla the pontifices seem to have discontinued the custom of compiling annals; but several private persons composed historical accounts of the Roman affairs, which, from their resemblance to the pontifical accounts in the simplicity of their narration, they likewise styled *annales*; as Cato, Pictor, Piso, Hortensius, and Tacitus. The like annals were kept from the earliest ages by the Egyptians, Babylonians, Persians, Chaldeans, &c.

The *Annals of Grotius* is a book finely written, and contains excellent materials. Grotius is not so particular as Strada, but more profound, and comes much nearer to Tacitus.

ANNAMATIA, in *Ancient Geography*, a place of Lower Pannonia.

ANNAMETHUS, an island in the Indian ocean, according to Pliny, who makes it dependent on Arabia Felix.

ANNAMOOKA, in *Geography*. See АНАМОКА.

ANNAN, the capital of Annandale, in Scotland, is a small town, and royal borough, pleasantly situate on a river of the same name, which abounds with salmon, and is navigable, within half a mile of the town, for vessels of 250 tons burden. The river at the town is crossed by a bridge of five arches. It was formerly a place of trade, but lying contiguous to the English border, and in the track of their western incursions, it was often pillaged, destroyed, and burned: the last of these destructive inroads was in the reign of Edward VI. when Lord Wharton, president of the Marches, burned the town, and demolished the church. In this town, there

was formerly a castle which was built by the Bruces, after they became lords of Annandale. The export-trade of Annan at present consists of grain; and a building for carding and spinning of cotton has lately been erected, and there are some appearances of increase. N. lat. 54° 40'. W. long. 3°.

ANNAND, WILLIAM, in *Biography*, a Scots episcopalian divine, was the son of William Annand, minister of Ayr, and born in that town in 1633. His father was obliged to quit Scotland in 1638, on account of his loyalty to the king, and attachment to episcopalian government; and he was admitted, in 1651, a scholar in the university of Oxford. Having completed his education, and distinguished himself by his loyalty and zeal for episcopalianism, he removed to Scotland in 1662; and in 1676, he was nominated to the deanery of Edinburgh. He died in 1689, and was interred in the Greyfriars church at Edinburgh. The titles of his works, which he wrote in English, are as follows, *viz.* "Fides Catholica;" or, The Doctrine of the Catholic Church, in Eighteen Great Ordinances, &c. Lond. 1661-2, 4to. "Panem Quotidianum;" or, Daily Bread, in Defence of set Forms of Prayer. Lond. 1662, 4to. "Pater Noster;" or, Our Father, an explanation of the Lord's Prayer. Lond. 1670, 8vo. "Mysterium Pietatis;" or, The Mystery of Godliness, Lond. 1672, 8vo. "Doxologia." Lond. 1672, 8vo. "Dualitas;" including "Lex Loquens;" or, The Honour of Magistracy: and "Duum Unitas;" or, The Agrgement of Magistracy and Ministry, &c. Biog. Brit.

ANNANDALE, in *Geography*, a district or division of Dumfries-shire, in Scotland, the capital of which is ANNAN. Upon the death of David II. in 1371, the lordship of Annandale descended to Thomas Randolph, earl of Murray; and by his sister Agnes, was transferred to the Dunbars, earls of March: after their forfeiture, it passed to the Douglasses, who lost it in the same way; and from them it went to Alexander, duke of Albany, who lost it by his rebellion against his brother king James III. From his time, it continued in the hands of the king, and was the great key of the western border. This district is a fertile vale, about 24 miles long and 14 broad: it was formerly, on account of its vicinity to England, subject to depredation, so that it was left uncultivated; but of late, the culture it has undergone has given it a new aspect.

Annandale formerly constituted part of the Roman province of Valentia: and as the wall of Severus terminated here, it abounds with Roman stations and antiquities. Some of the Roman camps are preserved; and the traces of a military road are visible in different parts of the country. Annandale is a marquissate belonging to the Johnstones, and the chief of that name.

ANNANO, a strong fort of Italy in the duchy of Milan, situate on the river Tanaro; twice taken by the French, and restored to the Duke of Savoy in 1706. N. lat. 44° 40'. E. long. 8° 30'.

ANNANORE is a Portuguese factory, lying on the western coast of the peninsula of India, 21 leagues nearly S. E. from Goa.

ANNA PERENNA, in *Mythology*, the sister of Dido; of whom fable relates, that she fled with Æneas to Italy, where she fell a sacrifice to the jealousy of Lavinia, and was drowned by her in the river Numicus, whence she was denominated the Numician nymph. It is certain, that the Carthaginians and Romans paid her divine honours. It is said, that the surname *Perenna* was derived, "a perennitate cultus," from the perpetuity of her worship. The feast of this deity was celebrated by the Romans in the ides of March, on the banks of the Tiber; on which occasion the people

people devoted themselves to every kind of amusement and pleasure. Ovid refers to this goddess, in the third book of his *Faсти*. Some writers maintain, that Anna was the moon, because its revolutions formed "annum," the year.

ANNAPOLIS, in *Geography*, a river of Nova Scotia, rises in the east, and passes into the bay of Fundy, through the basin of its own name; on the south side of which, at the mouth of the river, stands *Annapolis Royal*. The tide flows up this river thirty miles; and it is navigable for ships of any burden 10 miles; for those of 100 tons, 15 miles; and for boats, within 20 miles of Horton.

ANNAPOLIS, a county on the above river, adjoining to King's county, having five townships, *viz.* Wilmot, Granville, Annapolis, the chief towns Clare and Morekton, and chiefly inhabited by Canadians, Irish, and New-Englanders.

ANNAPOLIS *Royal*, called by the French *Port Royal*, when a colony was settled here by M. de Ponts in 1605; is the chief town of a county of this name, and stands on the south side of the river and bay of Annapolis.

This is reckoned the finest harbour in the world: it is two leagues long, and one broad; and has a small island called Goat Island, almost in the middle of the basin, which is said to be large enough to contain several thousand ships; its depth of water is no where less than four or five fathoms; the bottom is good; and ships may be secured from all winds. The entrance, however, is difficult, so that only one ship can pass in or out at a time; and it must go stern foremost, on account of the strong current and tides: the fogs also are very great here. The gulf through which ships pass into the bay is about three quarters of a mile wide and about one and a half long; and on each side the land is rocky and mountainous. The town is not large, but has some very handsome buildings. It is fortified, and cannot be easily attacked except by bombardment. The fort in its present state is capable of containing about 100 men. Furs are here exchanged by the Indians for European goods. N. lat. 45° 10'. W. long. 64° 5'.

ANNAPOLIS is also the chief town of Ann-Arundel county, and the capital of the state of Maryland. It stands at the mouth of the Severn, 30 miles south of Baltimore, 32 east by north from the federal city, 72 south-west from Wilmington, and 132 south-west from Philadelphia. It was formerly called Severn; and in 1694, it was made a port and town. It is situated on a peninsula formed by the river and two small creeks; and affords a beautiful prospect of Chesapeake bay, and the eastern shore beyond it. This town is the wealthiest of its size in the United States. The houses, about 300 in number, are spacious and elegant, indicating great wealth: the state-house is a noble building, and stands in the centre of the city, whence the streets diverge in every direction. N. lat. 38° 56' 15". W. long. 75° 8'.

ANN-ARUNDEL, the name of a county in Maryland, which lies between Patuxent and Patuxent rivers, and has Chesapeake bay to the south-east. Its chief town is Annapolis. This county contains 22,598 inhabitants, of whom 10,131 are slaves.

ANNAT, or ANN, in *Scots Law*, denotes half a year's stipend, which the law allows to the executors of the ministers of the church of Scotland, over and above what was due to the minister himself, for his incumbency.

ANNAT, FRANCIS, in *Biography*, a French Jesuit, confessor to Louis XIV. was born at Rovergue, in 1590. Having taught philosophy six years, and theology seven years, in the University of Toulouse, he was invited to Rome to be censor-general of the books published by the society, and theologian-general. On his return to France, he was distinguished by successive offices of honour to which

he was appointed, and at length he was made confessor to the king, in which post he continued for 16 years; nor was he allowed to retire from court till within about four months of his death. It is said, though not with much authority, that when Madame de la Valiere was taken into the royal favour, he entreated permission to lay down his office. During his long connexion with the court, he never employed his interest in providing for his poor relations. He was chargeable, however, with the crime of persecuting those who professed new opinions, and particularly the Jansenists; and he has been reproachfully denominated "The Flail of Heretics." He died at Paris in 1670. His writings, chiefly on the controversy with the Jansenists, are numerous; and the principal of them were collected in three volumes, and printed at Paris in 1666. Gen. Dict.

ANNATES, ANNATA, in *Ecclesiastical Writers*, denote a year's income, due anciently to the pope upon the death of any bishop, abbot, or parish-priest; and to be paid by his successor.

ANNATES are also called from the Latin *annus*, YEAR; because their rate is after the value of one year's purchase; and they are the same with what of later days are called *primitie*, or *first-fruits*; with this only difference, that first-fruits with us are paid to the king.

The invention of annates is ascribed, by a late writer, to Anthonin, bishop of Ephesus, who exacted from all bishops consecrated by him, a sum proportionate to the annual revenues of their sees. The council of Ephesus, held in 400, condemned this exaction, but not till Anthonin was dead. It was long after that annates got footing in the western church. The time when they were first introduced is very obscure. Clement V. is said to have been the first pope who imposed annates on England for three years; to which Edward I. immediately consented; but the parliament boldly opposed it; the pope's bull was declared abusive, and the king revoked his consent. Polydore Virgil (*Inv. et Rer. lib. viii. c. 2.*) says, that the council of Vienne, which was held in 1311, under Clement V. made an effort to suppress the annates; a circumstance which shews they subsisted in his time. John XXII. the successor of Clement, published a bull, whereby he reserved the first year's fruits of all ecclesiastical benefices that continued vacant for three years, archbishoprics, bishoprics, and abbaties, being exempted; but by degrees the first fruits were exacted, without observing whether the benefices were vacant three years or not. Benedict XII. who succeeded John, followed his example; and it was also imitated by succeeding popes; but the authority of their bulls extended no farther than their own lives. In 1399, during the schism of the antipopes, Boniface IX. issued the first bull for establishing perpetual annates; not merely to be granted as a charitable supply on extraordinary occasions, but as a matter of right annexed to the dignity of the sovereign; so that he decreed what was local and particular, to be universal and perpetual. Before his time, the annates were not fixed, and the clergy often refused to pay them; but afterwards, the tax was not only imposed at pleasure, but frequently doubled, tripled, and quadrupled. However, it was always a grievance complained of and remonstrated against both by the people and the clergy. There were even popes who condemned annates; and the secular princes frequently objected to the payment of them, forbidding any money to be carried out of their dominions on this account. See Lefant's *Hist. of the Council of Constance*, vol. ii. p. 147, &c. Nic. de Clamangis, A. Massa, Gallelius, Campegius, and Fimandus Cordubensis, have written expressly concerning annates.

Matthew Paris, in his *History of England*, for the year

year 746, relates, that the archbishop of Canterbury, in virtue of a grant or concession of the pope, received annates of all the benefices that became vacant in England. Before this time, among the laws of king Iua, who began his reign in the year 712, there is an order for the payment of them. But, in after-times, the holy see thought fit to take these away from the bishops and archbishops, and appropriate them to themselves. And from the popes, the parliament under Henry VIII. took them, passing an act in 1532, against levying them, and gave them to the crown. 25 Hen. VIII. cap. 20. Finally, queen Anne restored them to the church by appropriating them to the augmentation of poor livings. See *FIRST FRUITS*.

ANNATTA, in *Geography*, the name of a river and bar in the island of Jamaica, nearly north from the town of Kingston, on the north side of the island. N. lat. 18° 32'. W. long. 76° 41'.

ANNATOM. See *ANATOM*.

ANNE, in *Biography and History*, queen of England, was the second daughter of king James II. by his first wife Anne Hyde, and was born in 1664. In 1683, she married prince George, brother to the king of Denmark, by whom she had several children, though none of them lived to maturity. Upon the progress of the prince of Orange, and the retreat of the king, prince George, who was under the influence of lord Churchill, afterwards duke of Marlborough, as well as some other persons of distinction, retired to the camp of the advancing prince. When this news reached London, the princess Anne, dreading the king's displeasure, withdrew herself, in company with the bishop of London and lady Churchill, and fled to Nottingham. The intelligence of her flight was the occasion of great distress to her father: because he foresaw, in this incident, the total expiration of his royal authority; and because he was abandoned by a child, whom he had always regarded with the most tender affection. "God help me," cried he, in the extremity of his agony, "my own children have forsaken me!" Upon her disappearance, so violent were the prejudices that prevailed, the unhappy father was thought to have put her to death; and if the truth had not been seasonably discovered, the populace, and even the king's guards themselves, might have been engaged, in revenge, to commence a massacre of the priests and Catholics. Upon the settlement of the crown, in 1689, on the prince and princess of Orange, it was enacted by the Convention-bill, that the princess of Denmark should succeed after the death of the prince and princess of Orange. Accordingly, she ascended the throne, on the death of king William III. in 1702. The splendour and importance of her reign were owing more to the circumstances of the times, and to the influence of her ministers and favourites, than to any display or exertion of talents on her own part: as she possessed no energy of mind, and her disposition was meek and timid, she surrendered herself to the direction of others, and distinguished herself merely, or principally, by a strong predilection for tory principles in church and state. "Mildness, timidity, and anxiety," says Dr. Somerville, "were constitutional ingredients in the temper of this princess; and to their influence chiefly we may ascribe most of the interesting occurrences in her government and private life." Under the guidance of the counsels of the duchess of Marlborough, to which she had been accustomed to surrender herself in the earlier period of her life and reign, she pursued the projects for reducing the power of Louis XIV. of France, which her predecessor had begun; and after a series of successes, more glorious to her arms than profitable to the nation, the war closed by the peace of Utrecht, in 1713. Much more important to the prosperity of the nation, than all the bril-

liant successes of Marlborough's campaign, was the union of England and Scotland, which took place on the 1st of May 1707. The contention of parties was very violent during almost the whole of the queen's reign; and more especially towards the close of it, when it was apprehended that the queen, and those in whom she confided, wished to secure the succession to her exiled family; and when she evidently favoured the tories in such measures, as justly alarmed the whigs and the friends of constitutional liberty. Of this kind was the *SCOTSM-BILL*, which, after violent debates during its progress through both houses, obtained the royal assent on the 25th of June 1714. But the death of the queen, August the 1st, in the same year, the very day in which this bill was to take effect, rendered it in a great measure ineffectual. The queen's death, in the 50th year of her age and 13th of her reign, was occasioned by a dropsy, contracted or aggravated by her habits of living. Although Queen Anne had no energy of mind, she was not deficient in understanding; and her private character was amiable. She has been charged, however, by some, with the crime of deserting her father in his distress. This charge has been obviated by the peculiar circumstances in which she was placed, and by the state of the nation, when her husband, by his example, countenanced this measure. "The habit (says Dr. Somerville) of a blind deference to the advice of lord and lady Churchill, and a conscientious anxiety for the Protestant religion, exposed to the extremity of danger, risted the emotions of filial tenderness, in a moment of singular perplexity and agitation, and precipitated her into an action which would have been inexcusable, if it had been the result of cool deliberation, and originated from motives of interest and ambition." In the management of her fortune this princess was economical, and yet she was not deficient in charity; and she even exceeded it in her bounty to her favourites. In the discharge of religious duties, she was regular and exemplary; and she manifested her zeal for the safety and prosperity of the church in various ways; some of which, indeed, were reckoned as impolitic and unjust; and particularly by augmenting, at her own expence, the livings of the poor clergy. See *AUGMENTATION*. "She possessed a considerable degree of taste for the fine arts, amused herself with music and painting, and delivered her public speeches with a melodious propriety, that charmed the ears of her audience. The deceitfulness of grandeur, as a criterion of happiness, was remarkably verified in the life and reign of queen Anne. We beheld a nation rising, under her auspices, to the summit of prosperity. Whilst signal successes crowned her military exertions abroad, agriculture, commerce, manufactures, science, and literature, advanced with rapid steps at home; every event, and every improvement, which contribute to the opulence, the power, and the renown of a nation, distinguish the reign of queen Anne as the most propitious and brilliant recorded in the annals of Britain. But when we follow this princess into retirement, and survey the incidents of her private life, how much are we struck with the distinction between external grandeur and personal felicity! She survived a numerous family of children; the Duke of Gloucester, destined by the act of settlement to succeed her, lived to the age of 12, and exhibited early blossoms of every accomplishment that could elevate the hopes of a nation, and delight the heart of a parent. The possession of a crown, held upon the condition of ratifying the degradation and exile of her own family, must have cost her many a pang, which she durst not impart to her most confidential friends. Whilst looked up to as the first potentate in Europe, and loaded with congratulations upon the success of her arms, she was a slave in her own house; and subjected to daily

daily affronts and mortifications, from the insolence and usurpations of her own servants. Emancipated, at length, from her chains, she only entered upon a new scene of vexation and trial; and all her remaining days were embittered by the jealousies of her people, the turbulence of faction, and the contentions and outrage of a distracted cabinet." By her subjects, whose prejudices coincided with her own, she was honoured with the title of the "Good Queen Anne." Without attaching much merit to the queen herself, as either a patron or promoter of literature, the period of her reign was distinguished as a kind of Augustan age of English learning, on account of the number of admirable and excellent writers who flourished at this time.

ANNE of Austria, queen of France, the daughter of Philip III. king of Spain, by Margaret of Austria, was born in 1604, and married to Louis XIII. in 1615. From this connexion, she did not derive much happiness; for Cardinal Richelieu contrived to persuade the king that she was concerned in conspiracies against his life. Suspicions were thus excited, which rendered it necessary for her to answer interrogatories; and on her confession, to ask pardon of the king, and promise to alter her conduct. When the king died, in 1643, she was declared sole regent during the minority of her son Louis XIV. Her whole confidence was reposed in Cardinal Mazarin; who ruled with such despotism, that discontents arose, which produced a civil war, and obliged her to fly with her son from Paris, and to solicit the assistance of the great Condé. In the conflicts and vicissitudes of this period, the queen manifested great firmness; at length, the young king assumed the reigns of government, in 1661; and the queen retired, to pass the remainder of her life in pious exercises. In 1666, she died of a cancer, after having endured the pains of it with exemplary patience. In early life, the court of France was much indebted to her for its characteristic politeness and amenity. *Nouv. Dict. Hist.*

ANNE BOLEYN, queen of Henry VIII. of England, was the daughter of sir Thomas Boleyn, employed by Henry in various embassies, by a daughter of the duke of Norfolk; and born in 1507. At an early age she was taken to Paris, and resided there for a considerable time. Here she acquired a vivacity of manners and conversation, which was further set off by her personal charms. Henry, whose attachments were very variable, was enamoured when he saw her; and as he could not obtain the favour he solicited on any other terms, he hastened to seek a divorce from Catharine of Arragon, and whilst the grant of it was delayed, he married Anne Boleyn in November 1532; and publicly declared her queen in the April following. In September she was delivered of a daughter, who was afterwards the famous queen Elizabeth. Anne Boleyn had imbibed the principles of the reformers during her residence with the duchess of Alençon; and her influence was for some time usefully employed in widening the breach between the king and the court of Rome; and in overthrowing the power of that haughty favourite cardinal Wolsey. But her enemies were assiduous in their endeavours to supplant her; and the king's new passion for lady Jane Seymour, tended to inflame those jealousies of her conjugal fidelity which the levity of her carriage had excited, and in some measure justified. Having been accused of adultery with several officers of the household, and with her own brother, lord Rochford, she was brought to her trial for high treason, found guilty on very insufficient evidence, and sentenced to be beheaded: the sentence was executed in May 1536. At her death, she confessed indiscretion, but persisted in denying any serious guilt. Her letter to the king, written after her condemnation, enhances her character and understanding

in our estimation. Many calumnies have been circulated against this queen, by the bigotry of the Catholics, on account of the service she rendered to the cause of the Reformation. It is not possible to ascertain her innocence with regard to the crime charged against her; but as an approved writer observes, "it seems much less certain that she was criminal, than that her husband was a capricious and bloody tyrant." *Burnet's Hist. Reformation*, vol. iii. p. 113. *Hume's Hist.* vol. iv. p. 79—159.

ANNE, ST. of *St. Swick Hollein*. This order was instituted in the year 1738, by Charles VI. emperor of Russia. The badge of the order is a cross, composed of four large rubies set in gold, the angles between the cross set with diamonds, and on the centre a medallion with the figure of St. Anne. It is worn pendant to a broad crimson velvet ribbon edged with yellow. The star of the order is of silver, with eight equal points or rays; on the centre a red cross on a gold ground, with the following motto written on a red ground, AMANTIBUS JUSTITIAM, PIETATEM, FIDEM.

ANNE'S, ST. Bay, in *Geography*. See ST ANN'S.

ANNE'S, ST. Bay, is a bay on the coast of Labrador, in North America, between Davis's inlet on the north, and Cape Charles, which is the north point of the entrance into the straits of Beileisle, on the south. It is about N. lat. 54°, and W. long. 57°.

ANNE'S, ST. Cape and Island, lie south by east from Sierra Leone river, on the west coast of Africa. The cape is the north-west point of the island, which is a narrow slip of land, near 80 miles in length from west by north to east by south. The inner passage within the channel is called Furno of St. Anne.

ANNE, ST. LARPANA, OR ROTA, is one of the Ladrões, or Marianne islands, at the distance of seven leagues from Guam, and is about 45 miles in circumference, situate in N. lat. 14°. This is a pleasant and fertile island, finely diversified with rising grounds, covered with lofty trees, and beautiful plains of a rich black soil, and very well watered. There are two excellent ports, one on the south, and the other on the north-west side of the island.

ANNE CHARÉS, Island and Road, lie on the east side of St. Thomas island, under the equator, and 40 leagues west from the mouth of the river Gabon, on the continent of Africa. This island is only a great rock, and the road is under its lee.

ANNE'S, ST. Gulf, is round Cape Blanco, the most westerly point of Africa, which forms a peninsula, as this gulf runs up northerly within the land, which bears away towards the east. It is a large bay, with good sandy ground.

ANNE, Cape Queen, lies on the coast of Greenland, in the Northern Ocean, in N. lat. 64° 15', and W. long. 50° 35'.

ANNE'S, QUEEN, Forland, lies on the northern main from Hudson's Straits, in N. lat. 64° 8', and W. long. 74° 41'.

ANNE'S, ST. Harbour, is in the island of Martinico, and has good anchorage and a safe port.

ANNE'S, ST. in *Ecclesiastical History*, is a festival of the Christian church, celebrated by the Latins on the 26th of July; but by the Greeks, on the 5th of December. It is kept in honour of Anne, or Anna, the mother of the Virgin Mary.

ANNEALING, or as it is popularly called, *Nealing*. See NEALING.

ANNEBAUT, in *Geography*, a town of France, in the province of Normandy, situate on the Rille, and enjoying the title of marquise.

ANNECY;

ANNECY is a city of Savoy, and capital of the Genevois, seated between Chambery and Geneva, on a lake to which it gives name, at the mouth of the river Sier, which passes through it. This lake is about 10 miles long and 3 wide. Annecy is the see of a bishop, whose diocese includes Faucigny, Chablais, the country of Gex, and part of Bugy. It has piazzas in several streets for sheltering the people from rain, several collegiate and parish churches, and convents for men and women. It is 10 miles south of Geneva, and 21 north-north-east of Chambery. N. lat. 45° 56'. W. long. 5° 57'.

ANNECY, OZ, is now a village half a league north-east of Annecy. It was formerly a considerable town.

ANNERY is the name of one of the tribes who inhabit the deserts round Palmyra, which is remarkable for the finest breed of horses in the world; the other is the Mowalli, who are much better soldiers, but fewer in number, and little inferior in the excellence of their horses. The Annery possess the country towards the south-west, at the back of Libanus, about Bozra, down the Hawran; and southward towards the borders of Arabia Petrea and mount Horeb. The Mowalli inhabit the plains east of Damascus to the Euphrates, and north to near Aleppo.

ANNESEI, in *Ancient Geography*, a place of Africa, situate, according to Antonine, in the track of the "Septis Magna," to Alexandria.

ANNESLEY, ARTHUR, in *Biography*, earl of Anglesey, and lord privy-seal in the reign of Charles II. was the son of Sir Francis Annesley, bart. Lord Mount-Morris, and Viscount Valentia in Ireland, and born at Dublin in 1614. At the age of 16 years, he was sent to the university of Oxford, where he pursued his studies with such assiduity, as to engage the esteem of several respectable persons, who considered him as an honour to Magdalen College, with which he was connected, and a young man of great hopes. At the commencement of the dispute between king Charles I. and his parliament, he inclined to the royal cause, and sat in the Oxford parliament in 1643. He afterwards abandoned the king's party, and was admitted into the confidence of the other; and was deputed in 1645, by the parliament, as one of the commissioners at Ullster, where he concluded the business with which he was entrusted, to universal satisfaction, and very much to the benefit of the Protestant cause in Ireland. In his negotiation with the Marquis of Ormond, lord lieutenant of that country, in 1647, he exercised prudence and temper, and brought the negotiation to a happy issue. On his return to England he steered a kind of middle course between the extremes of party violence; had no concern with the king's trial and death; and on account of his opposition to some of the illegal acts of Cromwell, he was put among the number of secluded members. After the death of Cromwell, when there were appearances of the revival of the old constitution, he joined with those who determined to recal the king, and entered into a correspondence with him. After the restoration, he was rewarded for his services on this occasion with a barony and an earldom; and he manifested his loyalty, by sitting as one of the judges on the trial of the regicides. Having been employed at home and in Ireland in several important offices, he was made privy-seal in 1673. At the time when it was the practice to contrive popish plots, he was charged by Dangerfield, at the bar of the house of commons, with an attempt to stifle evidence in this matter; and yet he was the only lord, who, in the house of peers, dissented from the vote of the commons, asserting the belief of an Irish popish plot. On this account, he was unjustly charged with being a secret papist. In 1682, when the succession produced a considerable degree of agita-

tion, he represented, in strong terms, and in a memorial to the king, the fatal consequences of the duke of Norfolk's attachment to popery; and freely enjoined on the king his obligation to govern according to law. This freedom and faithfulness were not well received; and he was dismissed from his office of privy-seal in 1682. From this time, he lived very much in retirement; but his ambition was not asleep; for it appears, that he conducted himself so as to secure the favour of the duke of York, when James II., to such a degree, that he designed him for the office of lord chancellor, if the design had not been prevented by his death, in April 1686, in the 73d year of his age. He left several children by his wife, who was one of the co-heiresses of sir James Altham.

The earl of Anglesey appears to have been possessed of distinguished talents, and extensive and various learning. He was a good writer, and the author of several publications in politics and religion, as well as history. He was a ready, but not a graceful speaker: he was indefatigable in business, and of a grave deportment, and sober manners. His versatility has been censured, and, perhaps, not unjustly; but we discover strong traces of integrity in his conduct. He succeeded, probably, in too great a degree in ingratiating himself with men of all parties; and it does not much add to his reputation, that he was designed for chancellor at a time when Jefferies was at the command of the king. *Biog. Brit.*

ANNESLEY, SAMUEL, a non-conformist minister, was born at Haxley, in Warwickshire, about the year 1620, and educated at Oxford. Whilst he was a student, he was distinguished by his temperance and industry. From Calamy, it appears that he was ordained after the Presbyterian mode; though Wood says, that he received episcopal ordination. He was chaplain to the earl of Warwick; and afterwards rector of Chiffe in Kent, a valuable living, with peculiar civil jurisdiction.

During the civil wars, he was zealously attached to the parliamentary interest; and, in 1648, preached a violent sermon before the parliament, in which he inveighed against the king, who was then a prisoner in the Isle of Wight.

Under the protectorate, he surrendered Cliffe, and was presented to the vicarage of St. Giles's, Cripplegate. He was ejected in 1662, but continued preaching till his death, which happened in 1696. Annesley had the reputation of being a pathetic preacher, as well as a pious, prudent, and very charitable divine, laying by the tenth part of his income for the use of the poor. Some of the sermons which he published are contained in the "Morning Exercise of Cripplegate;" printed in 1674. *Biog. Brit.*

ANNET, in *Geography*, one of the smaller Scilly islands, near the south-east coast of England, about half a league from St. Agnes island.

ANNESTUS, in *Ancient Geography*, or **ANNESTRUS**, in town of Arabia Felix.

ANNEXATION, in a *legal sense*, the act of joining or uniting some less considerable thing to a greater.

ANNEXED, something joined to, or dependent on another.—Thus, we say, such a farm, such an advowson, is annexed to such a fee, such a manor, &c. Charles VIII., in the year 1486, annexed Provence to the crown of France.

ANNIBALI, DOMENICO, in *Biography*. See **DOMENICO**.

ANNIENTED, or rather **ANNIENTED**, formed of the verb *aneantir*, to bring to nothing, or to annihilate, a term sometimes used in law-books, in the sense of frustrated, or annulled.

ANNIHILATION, compounded of *ad*, to, and *nihil*, nothing, the act of reducing a substance into nothing; or of totally

totally destroying and taking away its existence. Annihilations stands opposed to creation; the one supposes something made out of nothing, the other something reduced to nothing.

All annihilation must be metaphysical, or supernatural; bodies naturally admit of changes and alterations in their form, but not of annihilation.

The ancient philosophers in effect denied all annihilation as well as creation, resolving all the changes in the world into new modifications, without supposing the production of any thing new, or destruction of the old.

By daily experience they saw compounds dissolved, and in their dissolution nothing perished, but their union or connexion of parts: when in death the body and soul were separated, the man they held was gone, but the spirit remained in its original, the great soul of the world, and the body in its earth from whence it came; these were again wrought by nature into new compositions; and entered new states of being which had no relation to the former. According to some, nothing is so difficult as annihilation; it requires the infinite power of the Creator to effect it; some go farther, and seem to put it out of the power of God himself. According to others, nothing is so easy; existence is a state of violence; all things are continually endeavouring to return to their primitive nothing; it requires no power at all: nay, what is more, it requires an infinite power to prevent it.

The Talapoins hold it the supreme degree of happiness, to have the soul totally annihilated, and freed from the burden and slavery of transmigrations.

Some Christians maintain, that God will annihilate the souls of the damned, after a certain term of punishment; and this annihilation, they say, is the second death. Irenezus, according to M. du Pin, was of this opinion. See DEATH, HELL, and PUNISHMENT.

ANNIHILATION is also used, in *Political Arithmetic*: thus, when the capital stock of any public fund is reduced, so much as is reduced is said to be annihilated.

ANNI NUBILES, among *Law Writers*, the legal age at which a maid becomes fit for marriage; which is at twelve years.

ANNIS *Communibus*. See COMMUNIBUS.

ANNISEED. See ANISE-SEED.

ANNIVERSARY, is properly the yearly return of any remarkable day; anciently also called a *year-day*, or *mind-day*; that is, a memorial day.

The word is from *annus* and *verto*, on account of its returning every year.

ANNIVERSARY *days, dies anniversarii*, among our ancestors, more particularly denote those days on which the martyrdoms of the saints were yearly celebrated in the church; as also days whereon, at every year's end, men were wont to pray for the souls of their deceased friends. *Anniversaria dies ideo repetitur defunctis, quoniam nescimus qualiter eorum causa habeatur in alia vita*. This was the reason given by Alcuinus, in his Divine Offices. The first origin of anniversary days is referred by some writers to Pope Anacletus, and by others to Felix I.

ANNIVERSARY *winds*, are those which blow constantly at certain seasons of the year.

These are otherwise called *Etesian winds*; such are the *TRADE winds* and *MONSOONS*.

ANNIVERSARY is more particularly used for the *annale*, or *mass*, rehearsed daily for the space of a year after a person's death.

ANNIUS, of Viterbo, or JOHN NANNI, in *Biography*, a Dominican monk, was born, in 1427, and distinguished as an impudent impostor. Furnished with talents and learning,

he employed himself in writing books from his own invention, which he introduced to the world as genuine remains of several ancient authors, in "Seventeen books of Antiquities." This curious collection contained several tracts of Archilochus, Xenophon, Herodotus, Manetho, Megasthenes, Philo, Q. F. Picitor, M. Cato, Antoninus Pius, Sempromius, &c. &c. This work was first published at Rome in 1498; a second edition was published by Venetus at Venice; and in 1552, it was published in 8vo. at Antwerp. The editor pretended to have found the books at Mantua; and the imposition was for some time successful. Vossius and Bayle mention ten advocates for the genuineness of these writings. On the other hand, the most approved critics examined these pieces, and pronounced them spurious; and this judgment is now universally received. Annus died at Rome in the year 1502. Gen. Dict.

ANNOBON, in *Geography*. See ANNABON.

ANNO *Domini*, q. d. *in the year of our Lord*; the computation of time from the EPOCH of the incarnation of Jesus Christ. This is generally inserted in the dates of all public writings, with an addition of the year of the king's reign.

ANNOISANCE, in *Law*. See NUISANCE.

ANNOMINATION, *annominatio*, in *Rhetoric*, the same with what is otherwise called PARONOMASIA.

ANNONA, *Guanabanus* of Plum. in *Botany*, a genus of the *polyandrii polygynia* class and order, of the natural order of *coadunatae*, and the *anone* of Justieu: its characters are, that its *calyx* is a perianthium three-leaved and small, leaflets cordate, concave, and acuminate; the *corolla* has six petals, cordate, and sessile; the three alternate interior ones less; the stamina have scarcely any filaments, anthers very numerous, placed on the receptacle; the *pystilium* is a roundish germ, placed on a roundish receptacle; styles nine, stigmas obtuse, numerous, covering the whole germ; the *pericarpium* a berry, very large; roundish, clothed with a scaly bark, one-celled (or a compenna berry, as in *Vabus*); seeds very many, hard, ovate-oblong, placed in a ring, and netting. Martyn enumerates ten, Willdenow eighteen, and Gmelin nineteen species. 1. *A. muricata*, rough-fruited custard apple, or four lop, *guanabanus* of Plum. *Araticu-pouhe* of Mareg. Pif. and Ray, with leaves oval-lanceolate, smooth and acute, fruits muricate, petals ovate, the interior ones obtuse, shorter. This is a middle-sized tree, rarely above twelve or fourteen, or at most twenty feet high. It is a native of the West Indies, common in every savannah of Jamaica, and flowering in the spring. The smell and taste of the fruit, flowers, and whole plant, resemble very much those of black currants. There is a variety in Jamaica, with inodorous leaves, large flowers of a fulvous colour, and spherical mucronate fruits. It was cultivated here in 1656 by Mr. J. Tradescant, jun. 2. *A. tripetalu*, *A. charimolia* of Miller, broad-leaved custard apple, with leaves ovate, acute, pubescent beneath, flowers three-petalled, and petals lanceolate, coriaceous, and tomentose. This grows to a large tree, with numerous branches, in South America. The fruit is esteemed by the Peruvians as one of their most delicate sorts. It was cultivated, in 1739, by Mr. Müller. 3. *A. squamosa*, *A. tuberosa* of Rumph. *atamaram* of Rheed and Ray, undulated custard apple, or sweet lop, with leaves oblong, acute, and smooth, fruits obtusely scaled, outer petals lanceolate and inner ones minute. This is a small tree about eight feet high, and commonly a shrub; a native both of the East and West Indies; the fruit is sweet, and eaten in these countries; cultivated in 1739, by Miller. 4. *A. reticulata*, *guanabanus fructu aureo*, &c. of Plum. *Anonamaram* of Rheed and Ray, netted custard apple, with leaves oblong-lanceolate, acute and smooth, fruits ovate and reticulate-areolate, outer petals lanceolate, and inner minute.

This

This is a tree growing to the height of twenty-five feet and more, with spreading branches; a native both of the East and West Indies; and the fruit, according to Browne, is much esteemed by many people; but Swartz says, that it is seldom eaten; cultivated at Hampton court in 1690. 5. *A. hexafetala*, *A. fenfis* of Gmelin, long-leaved custard apple, with leaves elliptic-oblong, acute, and smooth, petals spatulate, equal and acute; a native of China, and cultivated in the East Indies; introduced in 1758, by Hugh, duke of Northumberland: suspected by Loureiro not to be different from the third sort. 6. *A. palustris*, guanabana palustris, &c. shining-leaved custard apple, with leaves oblong, rather obtuse and smooth, and fruits areolate. This is a small tree, about a fathom in height; growing wild in soft marshy places in Jamaica, and bears a fine sweet-scented fruit, of no disagreeable flavour; but it is said to be a strong narcotic, and on that account not eaten. It is called *alligator apple*: its wood is so soft, that it is used instead of corks to stop up their jugs and calabashes; and hence it is now universally denominated the *cork-wood* in Jamaica: introduced here in 1778, by Dr. T. Clarke. 7. *A. triloba*, trifid-fruited custard apple, with leaves elliptic, acute, and smooth; flowers pendulous and campanulate, calyxes ovate, and petals many and oval. This tree's trunk is about the size of a man's leg, and its height about ten or twelve feet. All parts of it have a rank, if not a fetid smell; and few, except negroes, relish the fruit; it usually grows in low shady swamps, and in a very fat soil. It is a native of the Bahama islands, Carolina, Maryland, and Virginia; and the seeds are frequently brought to England, under the name of *papaw-tree*; introduced in 1736, by P. Collinson, Esq. 8. *A. glabra*, smooth custard apple, with leaves lanceolate-ovate, and fruits conoid smooth: grows to the height of about sixteen feet, has an eatable fruit, sweet but somewhat insipid; it is the food of guanas, and many other wild creatures. A native of North America. 9. *A. asiatica*, Asiatic custard apple, with leaves lanceolate, smooth, shining, and marked with lines: a middle-sized tree, with spreading branches; a native of the East Indies; cultivated there and in China. 10. *A. africana*, African custard apple, with leaves lanceolate, pubescent: a native of America, though distinguished by the epithet *africana*.

These fruits are much esteemed by the natives of the countries where they naturally grow; are esteemed very cooling and wholesome, and are frequently given to sick persons. 11. *A. aegyptiaca*, with elliptic leaves and globose fruits. 12. *A. aperemou*, with leaves oblong, very entire, tomentose, and somewhat sessile, and smooth fruits. Aubl. pl. Guian. 13. *A. paludosa*, with leaves oblong, very entire, tormentose, under rutose, and tuberculated fruits. Aubl. pl. Gui. 14. *A. punctata*, with leaves oblong, smooth and very entire, and punctated fruits. Aubl. 15. *A. longifolia*, with leaves linear-oblong, very entire and smooth, and punctated reticulated fruits. Aubl. 16. *A. ambotai*, with leaves ovate, acute, very entire, beneath ferruginous-tomentose tube. 17. *A. rufescens*, with leaves ovate-cordate, petiolate, beneath tomentose, and tomentose fruits. Aubl. 18. *A. amara*, with leaves cordate, smooth, petiolate, under yellowish, and tomentose fruits. Aubl. 19. *A. mucosa*, with oblong leaves, areolated fruits, and external corolla monopetalous. Jacq. Obl. Bot. This is reckoned by Willdenow, a variety of the *A. reticulata*. To those species that have been above enumerated Willdenow adds—*A. pygmaea*, *A. pygmaea* of Bartram, with lanceolate acute leaves, and oblong acute petals, the interior the longer: a native of Florida: *A. obovata*, *A. grandiflora* of Bartram, with leaves obovate and somewhat obtuse, oblong smooth fruit, obovate

obtuse petals, the exterior the larger: a native of Florida. *A. grandiflora*, with leaves ovate-oblong and petiolate, of Vahl; with leaves ovate-lanceolate, smooth, and very large flower, of L. Marck; and with leaves ovate-oblong, fruit elliptic and somewhat rough, and petals pubescent and oblong, the interior the shorter, of Willdenow: *A. amplexicaulis*, with leaves cordate-oblong, acute, double-rowed, and embracing the stem, of L. Marck; or with leaves cordate-oblong and embracing, of Willdenow: a native of Madagascar and of the island of Mauritius.

Culture, &c. The seventh sort will thrive in the open air in England, if the situation be warm; but the plants must be trained up in pots, and sheltered in winter for two or three years; and in the spring they may be turned out of the pots, and planted in the open ground. The other sorts, which are natives of the hot parts of America, or the East Indies, are too tender to live in this country, unless they are preserved in warm stoves: the seeds that are brought over must be sown on a good hot-bed, or in pots of light earth, and plunged into a hot-bed of tanner's bark in February, which is the best time, that the plants may get strength before the colds of autumn. They should be kept in the bark-stove, and with careful management they will make great progress; but in warm weather, they should have plenty of fresh air. As they advance in their growth, they should be cautiously shifted into larger pots, constantly remain in the tan-bed; and they will thus be vigorous. They are preserved for the sake of the beauty of their leaves, as few of them flower, and none produce fruit in England. The stoves in which they are placed should, during the winter season, be kept to the ananas heat, as it is marked on the botanical thermometer. The earth should be light and rich, and the tan-bed frequently turned over and refreshed. In summer they should have frequent waterings; but in winter they should be seldom watered, not oftener than once a week in open weather; and in frost, it will be sufficient to water them once in two or three weeks. Martyn's Miller.

ANNOŒA, in *Ancient Writers*, denotes victuals, or provision, or corn for a year.

ANNOŒA civilis, the corn with which the granaries of cities were filled every year, for the subsistence of the citizens.

The tax, called the *annona*, or supply of corn for the use of the army and capital, was a grievous and arbitrary exaction, which, in the time of Justinian, exceeded, perhaps in a ten-fold proportion, the ability of the farmer, and his distress was aggravated by the partial injustice of weights and measures, and the expence and labour of distant carriage.

ANNOŒA militaris, the corn and other provision laid up in the magazines, for the subsistence of an army during the campaign.

In ancient writers we also meet with the phrases *singula annona*, *binæ annona*, *ternæ annona*: with regard to which Salmastius lays down this rule, that when *annona* occurs in the singular number, it includes not only corn, but flesh, wine, oil, and other necessaries; whereas, when it is used in the plural number, it imports bread alone. Aquinas is not contented with this rule, but instead of it advances another, *viz.* that *annona* in the singular number includes all kinds of provision; and, in the plural, imports so many rations or pittances of bread, flesh, and the like, distributed to so many men.

In this sense, soldiers are sometimes said to have risen to the benefit of five or more *annona*; that is, were entitled to so many rations. The Emperors Arcadius and Honorius took

great pains to reduce this profusion. Hence we read of *annonæ præfectus*, or *curator*, who superintended the sale of corn; *annonæ struitor*, who managed the military provisions; *annonarius*, an officer appointed to distribute provisions to the soldiers; and *annonarii*, denoting monopolists.

ANNONAGE, *annonagium*, a tax on corn.

ANNONAGE is much the same with *frumentage*.

ANNONAY, in *Geography*, a town of France, in the department of the Ardèche, and chief place of a canton in the district of Mezen, four leagues north-west of Tournon, and 11 north of Privas. N. lat. 45° 15'. E. long. 4° 52'.

ANNOT, or ANOT, a town of France, in the department of the lower Alps, and chief place of a canton, in the district of Castellane; two leagues west of Entrevaux, and three north-east of Castellane.

ANNOTATION, formed of *ad*, and *nota*, note, a succinct commentary, or remark on a book or writing; in order to clear up some passages, or to draw some induction or consequence from it.

ANNOTATION, in the *Civil Law*, denotes a kind of rescript or grant from the emperor, signed with his own hand. But this annotation differed from a mere rescript and a pragmatic sanction.

It took its name from the note or subscription at the bottom, which was in red letters.

ANNOTTO, in *Commerce*, a kind of red dye, brought from the West Indies. This is otherwise denominated *arnatto*, *anate*, *attole*, and *roucou*.

It is procured from the pulp of the seed-capsules of a shrub called *achiote* and *urucu*; the *Bixa orellana* of Linnæus, which grows seven or eight feet high, and produces oblong hairy pods, somewhat resembling those of a chestnut. Within each of these are thirty or forty irregularly figured seeds, which are enveloped in a pulp of a bright red colour, and unpleasent smell, somewhat resembling the paint called red lead when mixed up with oil; and it was used as paint by some of the Indians, in the same manner as woad was used by the ancient Britons. The seeds, together with the red tough matter that surrounds them, are softened in a wooden trough with water, until, by a kind of fermentation, which spreads a very nauseous smell, and by diligent stirring and pounding, the kernels are separated from the pulp. This mass is then strained through a sieve, and boiled; upon which a thick reddish scum, which is the pigment, separates. When skimmed off, it is carefully inspissated in another kettle; and after being completely cool, is moulded in roundish lumps, wrapt round with leaves of trees, and packed for sale. It seems to partake of the nature of vegetable albuminous matter. The method of extracting the pulp, and preparing it for market, is simply by boiling the seeds in clear water, till they are perfectly extricated; after which the seeds are taken out, and the water left undisturbed for the pulp to subside. It is then drained off, and the sediment distributed into shallow vessels, and dried generally in the shade. See *ROUcou*.

The annotto is now only prepared by the Spaniards. The English had formerly a manufacture at St. Angelo, now ruined. This drug is preferred by the dyers to indigo, and sold one-fourth dearer. The double Gloucester cheese is coloured with this dye, not with marygolds. Some of the Dutch farmers use it to give a rich colour to their butter, and great quantities are said to be applied to the same purpose in the English dairies. The poor people use it instead of saffron; and it is sometimes mixed as an ingredient in chocolate, during the grinding of the cocoa, in the quantity of about two drams to the pound, in order to give it a reddish

colour; but the opinion of its being an earth has brought it into disrepute, and this use of it has been discontinued. Some have recommended it as a good cordial, and a preventative against retention of urine. It is used by the Spaniards in America as a gentle laxative, as an antidote to the dysentery, and a stomachic. But it is never prescribed for medical purposes in Europe.

To water it gives only a pale brownish yellow colour, and is not soluble in that liquid, nor in spirit of wine; but, in order to be fit for dyeing, it requires an alkaline menstruum, to which it gives a bright orange colour; and hence it is useful as an ingredient in *VARNISHES* and *LACQUERS*, and in dyeing wax of a vermilion colour. Wool and silk, boiled in a solution of it by alkaline salts in water, acquire a deep, but not a durable orange dye; for though it is not changed by alum or acids, it is discharged by soaps, and destroyed by exposure to the air. It is said to be an antidote to the poisonous juice of *manibot*, or *castuda*. The liquid sold under the name of "Scott's nankeen dye," seems to be nothing but annotto dissolved in alkaline ley.

See more of this artificial preparation, and the manner of making it, in Dr. Lewis's *Commercium Phil. Techn.* p. 224, &c. or Neumann's Works, p. 433, &c. Murray, *Med.* vol. iii. p. 392. Gren's *Chem.* vol. i. p. 443.

ANNUAL, something which returns every year, or closes at the end of the year. Thus we say, an annual or yearly feast, office, commission, rent, revenue, income, &c.

The annual motion of the earth, see proved under *EARTH*.

ANNUAL is sometimes used for the yearly rent or income of a prebendary, &c.

In which sense *annuale* amounts to the same with what we otherwise call *annat*.

ANNUAL is also used, in *Ecclesiastical Writers*, to denote a yearly office, said for the soul of a person deceased on the day of his obit, or anniversary.

ANNUAL, in the *Scottish Law*, denotes any yearly revenue or due paid at certain times, either legal, as *Martinfests* and *Whitfuntide*; or conventional, as the parties agree.

In the acts of parliament made by Queen Mary, mention is made of *ground-annual*, *fee-annual*, and *top-annual*; the meaning whereof is somewhat uncertain. See *ANNUAL*.

ANNUAL argument of longitude. See *ARGUMENT*.

ANNUAL epacts. See *EFACT*.

ANNUAL equation of the mean motion of the sun and moon, and of the moon's apogee and nodes. See *EQUATION*.

ANNUAL leaves, are such leaves of plants as come up afresh in the spring, and perish in winter. These stand opposed to *ever-greens*.

ANNUAL plants, called also simply *annuals*, in *Gardening*, commonly signify such plants as are of one year's duration, or which continue for the summer season, or a few months only. In general, however, all such plants as rise from seed sown in the spring, arrive at maturity in the summer or autumn following, producing flowers and ripe seed; and which afterwards perish in their tops and roots, are considered as annuals. This last effect takes place in most sorts in the autumn and winter following; though some hardy kinds, when late sown, will stand over the winter until the ensuing spring, especially those of the esculent sorts; but very few of the flowering kinds remain longer than October or November, unless protected by a greenhouse, garden-frame, or some other covering of a similar nature.

The plants of this tribe are very numerous, as most of

those of the herbaceous kinds, consisting of uncultivated plants, weeds, &c.; and also a number of cultivated garden and field plants, both of the esculent and flowery ornamental kinds, are of this description. The last sort are often termed simply *annuals*. They are likewise very extensive, and both of the hardy and tender kinds, some of which, from the peculiarity of their nature, and others from their producing beautiful flowers, are cultivated as ornaments to the flower garden and pleasure ground, during the summer and autumnal seasons.

The flowering annual plants are distinguished by gardeners into the *hardy* and *tender* sorts; the former being such as are capable of being raised from seeds sown on beds, borders, or other places in the natural and open ground; while the latter constantly require to be sown, and to have in some degree the aid of hot-beds, in order to promote their healthy growth.

The first sort, or the hardy annuals, are also mostly sown in places where they are designed to remain and flower without being transplanted, as many of them do not succeed under such management; some, however, will answer in either method, and may be occasionally transplanted.

But the tender annuals, after being sown and brought to a proper state of growth in hot-beds, are generally to be transplanted about May or June, either into pots or borders in the open ground.

1. *Hardy Annuals*.—The following are some of the principal of the hardy sort of flowering annuals: *adonis*, or adonis flower; *alkekengi*, white flowered, blue, yellow berried, red berried; *amaranthus*, prince's feather, love lies bleeding, purple; *chrysan*, white, sweet scented; *amethystea*, blue; *bulm*, moldavian; *belvedere*, or summer cypress; *calendula*, or cape marigold; *candy tuft*, white flowered, purple, large white, crimson; *catch-fly*, lobels red flowered, white purple, caterpillar; *clary*, red topped, white topped; *convolvulus*, three coloured minor, minor blue and white, minor blue, major blue, great white, great striped blue, great purple, red; *cyanus*, or bluebottle, blue-flowered, purple, white, red, striped blue and white; *cucumber*, sporting; *devil in a bush*, blue flowered, white, nettle leaved; *fumatory*, yellow; *hawk-weed*, yellow, red; *hedge-hog trefoil*, snail-shaped, prickly, turbinate, globular, orbicular, long crooked twisted; *honeyswort*, greater, less; *holly-hock*, Chinese variegated, double flowered; *jacobsa*, or ragwort, purple flowered white; *Indian corn*, tall growing, dwarf; *kidney beans*, scarlet runner, dwarf scarlet, large white runner; *ketmia*, bladder; *larkspur*, upright blue, upright purple, upright white, upright rose-coloured, white rocket, rose rocket, dwarf rose rocket, dwarf white rocket, dwarf blue rocket, dwarf red rocket, branching, blue branching, white branching, double and single flowered of all the different sorts; *lavatera*, cretan red flowered, white, purple; *lupine*, dwarf yellow, large yellow, white, great hairy blue, great hairy rose coloured, narrow leaved blue; *lychnis*, dwarf; *marigold*, double orange coloured, double yellow, double lemon coloured, gold coloured, party coloured, yellow ranunculus flowered, childing or profliferous, cape marigold; *mallow*, curled leaved, oriental; *mignonette*, odoriferous or sweet scented; *nasturtium*, major or large growing, minor or dwarf; *nolana*, peruvian dwarf blue; *nigella*, or devil in a bush; *pansey*, or heart's ease, common small variegated, large Dutch variegated, large purple, yellow, purple and yellow, purple yellow and white; *peas*, sweet scented, purple, white, painted lady, scarlet, tangier; *pea*, winged; *pea*, crown, white blossomed crown, painted lady crown, rose coloured; *periscaria*, oriental, red flowered, white flowered; *poppy*, large double

purple, double red, white variegated, red and white spotted or carnation, dwarf red, dwarf purple, dwarf variegated, double and single of all the different sorts; *queen's balm*, *scabious*, purple sweet, red flowered, white, striped, hen and chicken flowered, Harry flowered; *snail trefoil*, *stock gillflower*, ten weeks, purple flowered, red, white, scarlet dwarf French, wall-flower leaved red, wall-flower leaved purple, wall-flower leaved white; *stock virgin*, purple white; *snap dragon*, annual with white flowers, purple flowers, major or greater with flowers, purple white, yellow, scarlet, red and white, purple and white, red and yellow, white and red, yellow and red, yellow and white, scarlet gold dotted; *strawberry spinach*, *sun-flower*, annual, tall growing dwarf, double flowered of each sort; *sweet sultan*, purple, red, white, yellow; *toad flux*, three-leaved yellow, three-leaved purple, three leaved blue, variegated, white, branching yellow, tobacco, hardy round leaved, Virginia long leaved, Virginia broad leaved; *Virginia* or *virgin's stock*, *Venus's looking glass*, purple, white; *Venus's navelwort*, blue flowered; *xeranthemum* or *eternal flower*, red, white, purple, double flowered.

The authors of the "Universal Gardener," in which the above list is contained, observe, that the general season for sowing all sorts of hardy annual plants is in the spring, from about the middle or latter end of February to the middle or latter end of April, for the principal *blow*; and also some in May and the beginning of June, for successive and late flowering, especially those of the quick flowering kinds of short duration, as *candy tuft* and *virgin stock*, &c.

The order or method of sowing all these is principally in little patches or clumps, to remain as mentioned above. These patches should be formed from about three or four, to five, six, or eight inches in diameter, at moderate distances, and in some sort of regularity, towards the front, middle, and back parts of the borders or beds; and also in a varied manner in respect to the plants; the smaller growing sorts being constantly sown more or less towards the fronts of the borders, according to their degrees of growth; and the larger kinds more backwards, in the same proportion. Some may likewise be occasionally sown in pots; and in all of which, each sort and respective varieties should be sown in separate patches, &c. from about a quarter of an inch to half an inch or an inch in depth, or but little more, according to the sizes of the different sorts of seeds; observing in this business to generally loosen and break the earth a little, so as to render it fine for each patch, especially if hard, stubborn, or cloddy; then drawing off a little depth of mould, according to circumstances, to one side, sow the seeds many or few together in the patches, proportionately to the sizes of the respective plants, covering them regularly with the earth drawn aside to the depth required; and thus proceed in general, always placing a small short stick, or some other mark, to each patch as the sowing goes on, in order to distinguish the places.

Some may also be occasionally sown in drills, either in beds separately, or on the borders; the low growing kinds towards the fronts, and the larger sorts towards the back parts; in which order of growing may be had *virgin stocks*, *candy tuft*, *larkspur*, *sweet peas* of the different sorts, *lupines*, *tenweek stocks*, &c.

After sowing, if it be dry warm weather, it will be beneficial to give occasional light waterings, both before and after the plants are come up, especially during their more early growth; and when they are come up about an inch or two in height, those in the patches will, in many sorts, require thinning, especially those of a large, tall growth, and bushy

bushy kind, such as *sun-flowers*, *persicaria*, *Indian corn*, *tobacco*, *belvedere*, *marigold*, &c.: some to one good plant in each patch; others to two or three plants, as *lavatera*, *curled and oriental mallow*, *strawberry*, *spinach*, *Chinese hollyhock*, *xeranthemum*, *amaranthus*, *scabious*, *sweet fultan*, and similar kinds; and some also left in small bunches, as *candy tuft*, *lupines*, *larkspurs*, *sweet peas*, *cyanus*, *nastrurtium*, *convolvulus*, *Venus's looking-glass*, and *navel wort*, *mignonette*, *virgin flock*, *moldavian balm*, and many others of similar growth. Or some tenweek stocks and mignonette may either remain thin in patches, or, where too thick, some of each sort be transplanted in that order, three, four, or five together, or as required; also in many of the other sorts, some may occasionally be thinned out for transplanting, when required to supply deficiencies, &c. always performing the business, as much as possible, in showery weather.

It is farther remarked by the same writers, that in the advancing growth of the plants, the principal culture is to keep them clean from weeds; and where any large sorts remain too close or crowded together, to thin them according to their growth in some regular order; and in the larger tall growing kinds, some will require the support of sticks, as also most of the climbing or trailing sorts, particularly the sweet peas, convolvulus major, and large nasturtium, &c.; and to the climbers, some upright small branching sticks, trimmed up a little regularly, should be placed; the convolvulus and scarlet bean being volubilate, or twining climbers, will ascend spirally upon any straight upright stick, pole, or stake.

If it should be required to have any desirable sorts of these hardy annuals of moderate growth to flower early, they may be forwarded by sowing the seeds in pots in February or March, and placing them in a hot-bed, or more successfully in a hot-house, &c.; such as *scarlet* and other *sweet peas*, *virgin flock*, *candy tuft*, *mignonette*, *tenweek stocks*, *dwarf lupines*, *dwarf larkspurs*, *queen's balm*, and several others, especially of similar moderate growth.

As all the plants of this tribe of annuals generally produce plenty of ripe seed in autumn, care should be taken to save proper supplies of the different best sorts, as it ripens in perfection, in order to have plenty for sowing the ensuing spring to raise a production of new plants for flowering the following summer. In some sorts the scattered, or self-sown seeds, disseminated from the plants on the borders, will often come up naturally early in the spring; such as *larkspur*, *prince's feather*, *persicaria*, &c.; and which, if permitted to stand, will flower sooner than the spring sown plants; but as many of these often rise irregularly, they should be transplanted while young into some regular order; and as they are only chance productions, they should not prevent the regular sowing.

2. *Tender Annuals*.—The principal sorts of which are contained in the following list: *African marigold*, orange coloured, lemon coloured, deep yellow fistulous or quilled, waved flowered, dwarf, sweet scented, double flowered of each sort; *amaranthus*, *greater or true, *bloody, trailing or love lies bleeding; **balsam*, red, scarlet, purple, striped, variegated, double; **basil*, common greater upright, sweet with broad leaves, fringed leaved, purple leaved, tricolor leaved, red flowered, purple flowered, long spiked, &c., least or bush basil with hoary leaves, dark purple leaved, variable leaved, &c.; *calendula*, or cape marigold; **capsicum*, long podded, short podded, heart podded, bell podded, angular podded, cherry podded, olive podded, red podded, scarlet podded, yellow podded; *China-aster*, blue flowered, purple, red, white, striped, variegated, bonnet flowered,

quilled flowered, double and single of each sort; *Chinese hollyhock*, variegated, double; *chrysanthemum*, yellow, white, cream coloured, sulphur coloured, fistular or quilled, double and single of each sort; *convolvulus*, major, with deep purple flowers, red, blue, white, deep blue; **cucumber*, snake shaped; **egg plant* or *melangena*, white, fruited, purple fruited; *French marigold*, deep yellow, golden yellow, crimson coloured velvety, crimson and yellow striped, variegated crimson and yellow, sweet scented dwarf, double and single of each sort; *gourd*, orange, pear shaped, striped pear shaped or squash, carbuncled, warted, long taper, long crooked, horn shaped, large barrel shaped, large globular, large oval, hemispherical yellow, stone coloured, flesh coloured, sandy coloured, party coloured, white, &c.; **globe amaranthus*, purple headed, white variegated, silver spiked; *Indian corn*, tall growing dwarf; *India pink*, bright red, purple white, red and white variegated, differently variegated, numerous, large imperial, double and single of each sort; **love apple*, red fruited yellow fruited, cherry shaped; **marvel of Peru*, red flowered, yellow, white, purple, striped, long tubed flowered; **melon*, snake shaped or serpent cucumber; *mignonette*, sweet scented; *nolana*, trailing blue; **palma christi*, major or tall growing, minor or lesser, most broad leaved, lesser leaved, &c.; *persicaria*, oriental, red flowered, white; *sultan flower* yellow; *stock gilliflower*, ten weeks, red, purple, white, scarlet, dwarf scarlet, dwarf white, wall flower leaved, white, wall flower leaved purple, double of each sort; *tobacco*, Virginia long leaved, Virginia broad leaved; **tree-amaranthus*, **zinnia*, red flowered, yellow.

In respect to the culture of the more tender annuals, it is remarked in the same work, that they should be mostly either sown in a moderate hot-bed in March or April, and the young plants forwarded a little in growth therein, till settled warm weather, in the middle or latter end of May; and then transplanted; or sown in a bed of natural earth or warm border in April, protected under a garden frame or glasses, or at least defended in cold nights by garden mats; and in either method to be transplanted, in May or beginning of June, into beds, borders, pots, &c. in the flower and pleasure garden, to remain for flowering in summer and autumn. But that, where the convenience of a hot-bed is attainable, it is always advisable to raise a principal supply by that means for earlier transplanting and flowering, as a portion of the different sorts may be sown and raised in one hot-bed, smaller or larger, according to the quantity required; such as a bed for one light, or for two or three light frames; or where considerable supplies are wanted, a larger extent of hot-bed will be necessary in proportion; making the bed or beds in March or the beginning of April, and defending them with a frame and lights, or hand-glasses; or in want of these, protecting them with an awning of mats in cold nights and bad weather, observing, in general, that only a moderate hot-bed, of about two feet thick in dung, will be sufficient; earthing it at top five or six inches deep, with fine rich mould; in which sow the seed in small drills crossways, drawn with the finger two or three inches asunder, from half an inch to an inch deep, according to the size of the different sorts of seeds, which should be sown regularly, each sort separately, and covered in evenly with the earth the same depth, giving them air occasionally, by raising one end of the glasses an inch or two; or if a covering of mats, by taking them off, or turning them up in front in the day time; and, according as the plants advance in growth, admitting a larger portion of fresh air to strengthen and harden them by degrees, giving also occasionally

sionally gentle waterings. Continue in this manner the care of the young plants until advanced two or three inches in growth, when it will be of advantage to prick out a quantity of the principal sorts into another moderate hot-bed, three, four, or five inches asunder; or others into natural beds of light earth under frames and glasses, or to be defended occasionally by mats; but in deficiency of hot-beds, frames, &c. they may, in general, be pricked out in the middle or latter end of May into natural beds in the open ground; all of which should be watered at the time, and afterwards occasionally; and shaded with mats from the sun, if convenient, till the plants have taken fresh root; observing also to give those in the hot-beds and under-glasses less or more air every mild day. When in three, four, or five weeks, in either of these beds, they have acquired a tolerable degree of strength and size, as four, five, or six inches growth, or more, according to the difference of the sorts, they should all be finally transplanted about the middle or latter end of May and beginning of June, into the open ground on the beds, borders, and other compartments, and into pots, to remain for flowering, taking the opportunity of moist weather, if possible, for the work; and, where convenient, to remove and replant some sorts with a little ball of earth adhering about the roots, as it will be of great advantage in their more early flowering; watering them as soon as planted out, and afterwards as occasion may require, till freshly rooted, and they discover signs of a renewal of growth.

It is added, that as where any of the above raised plants have remained some time in the seed bed not pricked out, they may probably have drawn one another up into a weekly growth, care should be taken to plant them out in May, as soon as the weather is settled and favourably temperate, especially the more tender species that have this mark * prefixed to them.

It is also observed, that tenweek stocks and mignonette may be sown in a hot-bed so early as February, or any time in March, in order to raise a few plants to prick out into pots, three or four in each, for the earliest flowering; or some may be sown in March in the natural earth, or a warm border, under glasses or other occasional shelter, for early transplanting in April or May, into pots and flower borders, &c.

In the gourd kinds, when designed to raise them in hot-beds, they should not be sown before April; for if sown earlier, they are apt to grow too large before the season becomes sufficiently warm to admit of planting them out in the open ground; or in the beginning or middle of May some may be sown in the natural ground, both for transplanting, and in patches to remain.

But where hot-beds, frames, glasses, and other similar conveniencies are deficient, many of the species and varieties of this class, as has been just observed, may be raised in the open ground, especially if not generally sown till the beginning, or towards the middle or latter end of April, according to the state of the season, sowing them in a warm border or other compartment, of light earth, or in pots placed in similar situations; and when the plants are advanced several inches in growth, pricking them out into beds, or finally planting them out in May and the beginning of June. In this way they will all flower in tolerable perfection, but not generally so soon by a few weeks, nor all in an equal degree of full growth and perfection, as those which are forwarded in hot-beds, or under the protection of frames, glasses, &c. to a proper size for earlier setting out.

The sorts that will occasionally the most readily succeed

without the assistance of hot-beds, &c. are the *African* and *French marigold*, *crisanthemum chinensis*, *polian flower*, *Indian pink*, *love lies bleeding*, *Chinje lily*, *persecaria*, *tobacco*, *tenweek stock*, *nolana*, *mignonette*, and *Indian corn*; also gourds, if not sown till May; and four times *palma christi* and the *love apple*, in a temperate warm season. All these may be sown in beds or borders of natural earth, in warm situations, as has been observed, but not in most of the sorts before the middle of April; the plants being pricked or planted out in May or June into beds, borders, and pots, to remain for flowering.

In sowing the above sorts in the natural ground for want of hot-beds, if the beds or borders in which they are sown be defended under frames or hand-glasses, or sheltered with mats, it will be of much advantage in raising the plants more successfully to a forwarder growth; and they will sooner attain proper strength for transplanting out and flowering.

There are some however of this kind, that cannot be raised in any tolerable perfection without hot-beds to bring them forward at first to a proper growth for transplanting. But when in want of hot-beds, sow some under glasses about the middle or latter end of April or beginning of May; and when the plants are advanced a few inches in growth, in the latter end of May or beginning of June, plant them out into borders, beds, and pots. The method by means of pots, beds, frames, and glasses, is, however, by much the best.

In finally pricking out the plants in May and June, where they are to remain for flowering, showery weather is also of great advantage; and where any particular sorts can be removed and replanted with little balls of earth about their roots, that method should not be omitted. The business may be performed in some with a garden trowel to make proper apertures, as for those with balls of earth or full roots; and others with a dibble, according to their growth. In most sorts, planting them singly, or one plant only in a place, and disposing them in the borders, &c. in a diversified manner, the smaller sorts more or less forward, and the larger kinds towards the middle and back parts, in some proportion to their different degrees of growth, as before directed. Some of the other principal sorts may also be placed in pots as required. But in the tenweek stocks, and other similar plants, it is always advisable to plant some in patches, three or four plants together, about three inches apart, both in the borders and in pots, in order that, as being of small growth, their flowers together may appear more conspicuous, and have a greater chance of producing some double flowered plants. Some mignonette and nolana, as being low plants, may also be planted in the same order. The love apple and gourd being of extensive rambling growth, may be planted against a south wall, paling, treillage, &c. especially the love apple, in order to have their extending branches trained thereto, that they may ripen their fruit more effectually in autumn. Gourds of the small fruited kinds may be planted in a similar manner, or against the railing of arbours, &c. in order to be trained up thereto in their advancing growth; others in capacious spaces, in large borders, &c. to have room to extend along the ground, or to be trained up to strong tall stakes. Moderate watering should be given directly in every case, especially in dry weather, and repeated occasionally till the plants have taken fresh root, and begun to grow.

The after-culture is chiefly to keep the plants clear from over-running weeds, and to give occasional support to those of large or tall growth; and sometimes where any branch

out very irregularly, or in a rambling manner, in their advanced growth, as often happens in the African and French marigolds and crysanthemum, &c. they should be trimmed to the regular order: and some sorts, as the love apple and the 'gourd' kinds, if planted any where in the borders, being of a very rampant growth, be trained up to strong stakes, as before observed, both to prevent their over-running the adjacent plants, and that their fruit may appear more conspicuous, and ripen in greater perfection, especially the love apple. And such plants as have been planted in pots, will now be ready for moving in their respective pots occasionally, when in flower, to adorn particular compartments of the garden or other places, as may be required; and as the earth in the pots dries very fast in hot weather, they will require watering every day or two during the season. All or most of these plants will be flowering in June or July, and continue, in general, till September or October; and the greater part of them are highly ornamental, though there are a few sorts that are of little or no value for their flowers, as the capficum, love apple, egg plant and gourd, being chiefly esteemed for the appearance of their fruit; and the palma chrilli for its majestic growth and large palmated leaves. All the sorts produce ripe seed in Autumn, and soon after wholly perish: particular attention should therefore be given to collect proper supplies of seed from the best flowering plants of the different sorts: when dry, to be preserved for use in the succeeding spring.

There is, in addition to the above, a still more tender kind of annual plants; and which, according to the writers already mentioned, are superiorly ornamental and curious; some in the beauty of their flowers, others in the singularity of their beautifully coloured leaves, as in the *amaranthus tricolor* and *bicolor*; some for the curiosity of their fruit, as in the *egg plant* and *snake melon*, &c.; and the *humble* and *sensitive plants*, from the singularly beautiful sensitive motion of their leaves; the *ice plant*, in its icy-like or crystalline appearance; and the *tree amaranthus*, both in its large tall growth branching widely around, and its vast pendulous flower-spikes often two or three feet long or more.

These are chiefly comprehended in the following list:

3. *Tendrest Annuals*.—*Amaranthus*, tricolor, bicolor, maximus or tree amaranthus, bloody, &c.; *balsamine* or *bal-sum*, double striped, double scarlet, double purple, double bizarre; *broualia*; *cock's comb*, tall purple headed, dwarf purple, crimson, buff coloured, yellow, branching; *convolvulus*, scarlet; *egg plant*; *globe amaranthus*; *humble plant*; *ice plant*, or diamond ficoides, oval leaved, pinnatifid leaved; *marvel of Peru*; *martynia*, purple flowered, red, white; *melon*, snake shaped; *stramonium*, double white, double purple, double striped; *sensitive plants*, double flowered annual, common shrubby, humble; *zimbia*.

These very tender annuals are all to be raised in hot-beds in the spring, under frames, &c. till May or June; and in order to obtain them in a tolerable degree of perfection, two different hot-beds, at three, four, or five weeks intervals, will be necessary for sowing or raising them in: one the latter end of February, or any time in March, but not later than the beginning of April; the young plants, when about one, two, or three inches in height, being pricked out, some into small pots singly, others in the earth of the bed, three or four inches asunder, the whole being in the same bed if there be room enough, if not, into another hot-bed; and when they have advanced in growth, so as to crowd one another, they should be removed into another hot-bed, under a deeper frame, or the frame raised at bottom

occasionally, as the plants rise in height. Some should be put in large pots, and others potted that were not so before, plunging the pots in the earth of the bed; or some may be put in the bed, six or eight inches asunder: water is then to be given in general, and the glasses put on. The whole from their first growth, must have an admission of fresh air every day, by raising the upper end of the glasses one, two or three inches, supplying them with moderate waterings. In this way they may be forwarded until the latter end of May, or some time in June, according to their growth or the temperature of the season, as before suggested; but in the mean time, in their advancing state, inure or harden them by degrees to the weather, particularly by gradually admitting a larger share of air, or by sometimes taking the glasses off entirely in warm days, &c.

The *humble* and *sensitive* plants should, in general, be continued constantly under glasses, in a green house, &c. or in a room window within, in the full sun; as, if fully exposed to the open air, it would deprive them of much of their lively sensitive motion, in which curious singularity their principal merit consists.

In order to raise some of the more curious sorts of this kind of annuals in the greatest perfection, such as the tall *cock's comb*, *tricolor*, *bicolor*, *double balsams*, *stramoniums*, *globe amaranthus*, *egg plants*, &c. it will be necessary to have two or three different successional hot-beds under frames and glasses, at a month's interval; that is, a small one in March, to sow the seeds, and raise the plants an inch or two high in; a second in April, of larger dimensions, in which to prick out the young plants from the seed bed, three, four, five, or six inches asunder; and sometimes a third in May, for a larger frame to receive them when transplanted in pots to remain till June, and they grow to full size; observing that while they are in the second and last hot-beds, the frames be occasionally raised or augmented in depth, according as the plants rise in height.

The first hot-bed for the seed should be made, as already directed, of suitable dimensions, and about two feet and a half deep in dung; the frame and glasses then put on, leaving one end of them open, to let out the rank steam of the dung; and in a few days, or when the first great steam and heat of the bed are gone off, the earth, which must be rich, light and dry, be put on four or five inches thick. The seeds of different sorts may now be sown, each kind separately, in small shallow drills, drawn with the finger, covering them with fine mould, from a quarter to half an inch deep, or with the very small seeds but very thinly. The glasses are then to be put on again, setting one end of them a little open, for the evaporation of the rising steam of the bed, covering them every night with garden mats. The plants mostly appear in a few days, when fresh air must be judiciously and with caution admitted, by propping up the ends of the glasses about an inch or two every mild day; and when the earth becomes dry, a very slight sprinkling of water be given in a sunny forenoon. The glasses should be mostly kept close in the nights; but if a strong steam and heat take place, they may be raised a little at one corner, for air to enter, and the steam to pass away, hanging the end of a mat over the tilted part, and continuing to cover the glasses with mats every night.

The care of the seedling plants is to be continued in the beds for about three weeks, or till they are advanced one, two, or three inches in growth, according to the different sorts; they are then to be pricked out into another new-made hot-bed.

When the plants in the seed hot-bed are advanced one, two,

two, or three inches, as above, another hot-bed should be put in readiness to receive them, making it for a two or three light frame according to the quantity of plants that are ready for the purpose. When the bed has imparted a proper degree of warmth to the earth, take up the plants with care, and in the same manner as directed above, prick them out into this, four or five inches distant, then give them a very light watering, and occasionally shade them in the middle of sunny days till they have struck fresh root; and admit air as before every fine day, by raising the upper ends of the glasses one or two inches; also occasional light waterings two or three times a week, in warm weather, and defend them in the nights with mats, and raise the frames, according as they extend in height, as before advised. After having had four or five weeks growth in this bed, if they have advanced considerably, so as to meet and crowd one another much, it will be adviseable, as already noticed, to remove them into a third and final hot-bed where it can be conveniently obtained; some being planted in the bed, others previously potted and placed in them, to be covered by glasses, as directed above.

The frames, glasses, or other conveniences for these uses should be sufficiently large, especially for the tall plants, and capable of being raised at pleasure, as they advance in growth. The other management being the same as directed above. (See HOT-BED.)

Before the plants are finally set out, they should always be occasionally exposed, and have the air freely admitted to them in the frames, at proper times, in order to harden them. And about the latter end of June, or beginning of July, when the weather is settled, they may be removed in their pots to the places where they are designed to remain for the summer.

This class of annual plants should always occupy the principal situations both in gardens and pleasure grounds, as in the most public and most frequented compartments in the front courts, &c.

The only culture that is necessary in any of the different sorts, when removed into the full air, is principally to supply them with suitable quantities of water, especially those in pots; and occasionally to such as are in borders, when first planted out, and till fast rooted; and to keep the whole clean from weeds, and supported with sticks, &c. where required.

They all flower from June or July till the end of autumn; and in August and September ripen seed, which should then be gathered from the best and most perfect plants, when the weather is quite dry.

The particular management of the different plants will be found under the *genera* to which they respectively belong.

ANNUAL meadow grass, called in some parts of England Suffolk grass, is a species of grass which makes the finest turfs, and seems well adapted to dairy-farms. See *POA ANNUA*.

ANNUALIA, yearly oblations anciently made by the relations of deceased persons on the day of their death.

This day they called *year-day*, &c. and on it mas was celebrated with great solemnity.

ANNUEL, *ground*, according to Skene, is when the property of any land, whether built or unbuilt, is let or sold for a yearly rent, to be paid either to the proprietor, or to some chaplain or priest.

ANNUEL, *free*, is either when the mail or due is disposed of as a yearly revenue; or, when the land or tenement is let in a fee-farm hereditary, for a certain yearly sum to be paid under the denomination of *feuda firma*.

ANNUEL, *top*, is a due given or assigned out of houses or buildings, where the property remains with the former owner, only with the condition of his paying the said *annuel*.

ANNUEL of Norway, of which mention is made in the acts of parliament of King James the Third, was an annuel payment of an hundred marks sterling, which the kings of Scotland were obliged to pay to the kings of Norway, in satisfaction for some pretensions which the latter had to the Scottish kingdom, by virtue of a conveyance made thereof by Malcolm Canmor, who usurped the crown after his brother's decease.

This *annuel* was first established in 1266; in consideration whereof the Norwegians renounced all title to the succession of the isles of Scotland. It was paid till the year 1468, when the *annuel*, with all its arrears, was renounced in the contract of marriage between King James the Third, and Margaret, daughter of Christian the First, king of Norway, Denmark and Sweden. See Skene de verb. Signif.

ANNUENTES Musculi, in *Anatomy*, a pair of transverse muscles, at the root of the *verteb æ* of the back, called also by Mr. Cowper *RECTI interni minores*, because they lie under the *RECTI majores*.

They are called *annuentes*, from *annuere*, to nod towards, because they help to nod the head, or draw it directly downwards and forwards.

ANNUITIES signify any interest of money, rents, or pensions, payable from time to time, at particular periods.

The most general division of annuities is into *annuities certain*; and annuities the payment of which depends on a *contingency*; such, in particular, as the continuance of a life.

Annuities have been also divided into annuities in *possession* and annuities in *reversion*; the former meaning such as either *have* commenced, or are to commence *immediately*; and the latter such as will not commence till some particular future event has happened, or till some given period of time has expired.

Annuities may be farther considered as *payable yearly*, *half-yearly*, or *quarterly*.

The present value of an annuity is that sum which, being improved at compound interest, will be sufficient to pay the annuity.

The present value of an *annuity certain*, payable yearly, and the first payment of which is to be made at the end of a year, is calculated in the following manner.

Let the annuity be supposed to be 100*l.* the present value of the first payment of it, or of an hundred pounds to be received a year hence, is that sum in hand, which being put out to interest, will increase to 100*l.* in a year. In like manner, the present value of the second payment, or of 100*l.* to be received two years hence, is that sum in hand, which being put out to interest, will increase to 100*l.* in two years. The like is true of the value of the 3d, 4th, 5th, &c. payments; and the sum of the values of all the payments is the value of the *annuity*.

Let the interest be supposed to be 4 *per cent.* The sum which improved at 4 *per cent.* interest for the year will produce 100*l.* at the end of the year, is the sum which bears the same proportion to 100*l.* that 100*l.* bears to 100*l.* with 4 added to it, that is, to 104*l.* Say then, as 104*l.* is to 100*l.* so is 100*l.* to a fourth proportional, which will be 96.15, or 96*l.* 3*s.* the value of the first payment.

Again, the sum which improved at 4 *per cent.* for two years,

ANNUITIES.

years, will produce 100*l.* at the end of 100 years, is the sum which being now put out to interest will produce in a year that sum which in one year more will produce 100*l.* that is, it is the sum that will produce in a year 96*l.* 3*s.*; for it has been just shewn, that 96*l.* 3*s.* will in a year produce 100*l.* Say then, as 104*l.* is to 100*l.* so is 96*l.* 3*s.* or 96.15, to a fourth proportional, which will be 92.45, or 92*l.* 9*s.* The value therefore of the second payment is 92*l.* 9*s.*

By proceeding in this method it will be found that the value of the 3d, 4th, 5th, &c. payments, are £88.89, £85.48, £82.19, &c. The sum of 10, 20, or 100 of these values, is £811, £1359, £2450, respectively, or the present value of an annuity of 100*l.* payable for 10, 20, or 100 years. The sum of an infinite number of these values is 2500*l.* or the value of a perpetual annuity of 100*l.* at 4 per cent.

In general: suppose r to denote 1*l.* increased by its interest for a year, or the amount of 1*l.* in a year. Then $\frac{1}{r}$ will be the present value of 1*l.* to be received a year

hence; for r is to 1 as 1 is to $\frac{1}{r}$. Also $\frac{1}{r^2}$ will be the value of 1*l.* to be received at the end of two years; for r is to 1 as $\frac{1}{r}$ is to $\frac{1}{r^2}$. In like manner, $\frac{1}{r^3}$,

$\frac{1}{r^4}$, $\frac{1}{r^5}$, &c. will be the values of 1*l.* to be received at

the end of 3, 4, 5, &c. years respectively; and $\frac{1}{r^n}$ will be the value of 1*l.* to be received at the end of n years. The value, therefore, of an annuity of 1*l.* for n years is

$\frac{1}{r} + \frac{1}{r^2} + \frac{1}{r^3} + \frac{1}{r^4}$ &c. continued to n terms. And the value of the perpetuity is the series continued in infinitum.

In order to find the sum of n terms of this series, put S equal to it, or $S = \frac{1}{r} + \frac{1}{r^2} + \frac{1}{r^3}$, &c. $+ \frac{1}{r^n}$.

Then,

$$S r = 1 + \frac{1}{r} + \frac{1}{r^2}, \text{ \&c. } + \frac{1}{r^{n-1}}. \text{ And}$$

$$S r - 1 = \frac{1}{r} + \frac{1}{r^2}, \text{ \&c. } + \frac{1}{r^{n-1}} = S - \frac{1}{r^n}. \text{ There-}$$

$$\text{fore } S r - 1 = S - \frac{1}{r^n}. \text{ And consequently}$$

$$S r - S = 1 - \frac{1}{r^n}, \text{ and } S = \frac{1}{r-1} - \frac{1}{r-1} \times \frac{1}{r^n}$$

This is the general theorem for finding the sum of any given number of the first terms of the series $\frac{1}{r} \times \frac{1}{r^2}$

$+ \frac{1}{r^3}$, &c. that is, for finding, from the rate of interest

given, the value of an annuity certain, payable yearly for any number of years. If the annuity is a perpetuity, it is plain

that $\frac{1}{r^n}$, or the last term vanishing, $\frac{1}{r-1} \times \frac{1}{r^n}$ also vanishes; and, consequently, that the expression becomes

$S = \frac{1}{r-1}$: from whence it results that the value of a perpetuity is always unity divided by the interest of 1*l.* for a year, or 100*l.* divided by the rate of interest.

Annuities certain differ in value as they are made payable, yearly, half-yearly, quarterly, or at shorter intervals. Let r , instead of denoting as before, 1*l.* increased by its interest for a year, denote the interest only of 1*l.* for a year, and let n denote the term or number of years during which the annuity is to be paid. By reasoning as in the former case, the

value of the annuity will be $\frac{1}{1+r} + \frac{1}{1+r}^2 + \frac{1}{1+r}^3 \dots$

$$\dots + \frac{1}{1+r}^{2n} \dots \text{ or } \frac{1}{1+r} + \frac{1}{1+r}^2 + \frac{1}{1+r}^3$$

$$\dots + \frac{1}{1+r}^{4n}, \text{ according as it is payable, either}$$

half-yearly or quarterly. The first of these series is $= \frac{1}{r}$

$$- \frac{1}{r} \times \frac{1}{1+r}^{2n} \dots \text{ and the second is } = \frac{1}{r} - \frac{1}{r} \times$$

$$\frac{1}{1+r}^{4n} \dots \text{ If the annuity is made payable at } m, \text{ any}$$

smaller fraction of a year, the sum of the series will be $= \frac{1}{r} - \frac{1}{r} \times \frac{1}{1+r}^{mn}$; so that when m becomes infinite, or

the annuity is made payable momentarily, the series will be $= \frac{1}{r} - \frac{1}{r} \times \frac{1}{1 + \frac{r}{1000, \text{ \&c. }}}$ n . By the Bino-

$$\text{mial Theorem } 1 + \frac{r}{1000, \text{ \&c. } } \Big|^{1000, \text{ \&c. } } n \text{ is } = 1 + r n +$$

$$\frac{r^2 n^2}{2} + \frac{r^3 n^3}{2 \times 3} + \frac{r^4 n^4}{2 \times 3 \times 4} \text{ \&c. which series is known to ex-}$$

press the number of which $r n$ is the hyperbolic logarithm. Let this number be called N , and the value of the annuity

in this case will be $= \frac{1}{r} - \frac{1}{r N} \dots$ If P be put for $\frac{1}{r}$

or the perpetuity, and $y, b, g,$ and $m,$ for the values of the annuity according as it is payable, yearly, half-yearly, quarterly, or momentarily, the general theorems will then be

$$y = P - P \times \frac{1}{1+r}^n$$

$$b = P - P \times \frac{1}{2 + \frac{r}{2}}^{2n}$$

$$g = P - P \times \frac{1}{1 + \frac{r}{4}}^{4n}$$

$$m = P - P \times \frac{1}{N}$$

ANNUITIES.

Example I.

Let the rate of interest be 4 per cent and the term five years; and consequently $r = .04$, $n = 5$, $P = 25$, then

$$y = 25 - 25 \times \frac{1}{1.04^5} = 4.4518$$

$$b = 25 - 25 \times \frac{1}{1.02^{10}} = 4.4913$$

$$q = 25 - 25 \times \frac{1}{1.01^{20}} = 4.5125$$

$$m = 25 - 25 \times \frac{1}{1.22198} = 4.5415$$

Example II.

Let the rate of interest be the same, and the term for which the annuity is payable 25 years.

Then,

$$y = 15.6220$$

$$b = 15.7118$$

$$q = 15.7694$$

$$m = 15.8010$$

Example III.

Interest being the same, let the term be 50 years.

Then,

$$y = 21.4822$$

$$b = 21.5491$$

$$q = 21.5820$$

$$m = 21.6160$$

Example IV.

Interest being the same, let the term be 100 years.

Then,

$$y = 24.595$$

$$b = 24.523$$

$$q = 24.532$$

$$m = 24.542$$

Sums may also be made payable at longer intervals than a year: such are fines required at stated times for the renewal of leases. Supposing those periods to be at the end of every n^{th} year, the series expressing their value will be

$$\frac{1}{1+r}n + \frac{1}{1+r}2n + \frac{1}{1+r}3n \dots \text{ad infinitum} = \frac{1}{1+r}n - 1,$$

that is, divide $1l.$ by the amount of $1l.$ in n years (see Tab. I.) lessened by unity, multiply the quotient by the fine, and the product will be the present value of all those fines for ever, if the first of them be payable at the end of n years. But if the fine be now due, unity must be added to the above-mentioned quotient, and the sum being multiplied by such fine, the product will be the value in this case.

Example. Supposing an estate of $10l.$ per annum held by lease, renewable every seven years at a certain fine of $20l.$: what is the value of such estate, computing at five per cent.?

Ans. The amount of $1l.$ in seven years, by Tab. I. is 1.628895 . Deducting unity from this number, and dividing $1l.$ by $.628895$, the remainder, we have 1.59 for the quotient, which, being multiplied into $20l.$ the given fine, produces $31.80l.$ for the present value of all such fines, supposing the first of them to be paid at the end of seven years. Now since the fee simple is worth 20 years purchase, or $200l.$ it follows that the difference between $200l.$ and $31.80l.$ or $168l. 4s.$ will be the value of this estate, subject to the payment of the fines every seven years. But if the fine be due, it will be worth $20l.$ less, or $148l. 4s.$

The value of the reversion of a perpetual annuity, to be entered upon after a particular term, is "the value of the annuity for the given term subtracted from the perpetuity."

For example; the value of an annuity, to be entered upon 10 years hence, is (reckoning interest at 4 per cent.) 8.11 (the value by Tab. III. of an annuity certain for 10 years,) subtracted from 25 (the perpetuity), or 16.89 ; that is, $16\frac{1}{2}\%$ years purchase nearly. If the annuity is to be entered upon at the end of 18 years, the value will be 12.66 subtracted from 25 , or 12.34 years purchase.

If the reversion be not a perpetuity, but an annuity, certain for a given term, to be entered upon after another given term, the value will be "the value of the annuity for the first term subtracted from its value for both terms, added together; that is, supposing the reversion an annuity for eight years, 10 to be entered upon after ten years, the value is (reckoning interest at 4 per cent.) the difference between 8.11 (the value of an annuity by Tab. III. for 10 years) and 12.659 (the value by the same Table of an annuity for 18 years) or 4.548 , which is little more than $4\frac{1}{2}\%$ years purchase.

The following Tables, together with the account of their construction and use, contain all that is most important on the subject of annuities certain.

TABLE I.

Shewing the amount of the principal in a given number of years, not exceeding 100, at any rate of compound interest, from three to six per cent.

Years.	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
1	1.030000	1.035000	1.040000	1.045000	1.050000	1.060000
2	1.060900	1.071225	1.081600	1.092025	1.102500	1.123600
3	1.092727	1.108718	1.124864	1.141166	1.157625	1.191016
4	1.125509	1.147523	1.169859	1.192519	1.215506	1.262477
5	1.159274	1.187686	1.216653	1.246182	1.276232	1.338226
6	1.194052	1.229255	1.265319	1.302260	1.340906	1.418519
7	1.229874	1.272279	1.315932	1.360862	1.407100	1.503630
8	1.266770	1.316809	1.368569	1.422101	1.477455	1.593345
9	1.304773	1.362899	1.423312	1.486095	1.551322	1.689479
10	1.343916	1.410599	1.480244	1.552960	1.628897	1.790848
11	1.384234	1.459970	1.539474	1.622357	1.710335	1.898299
12	1.425761	1.511060	1.601072	1.695881	1.795856	2.012196
13	1.468534	1.563956	1.665074	1.772197	1.885645	2.132228
14	1.512590	1.618695	1.731676	1.851945	1.979932	2.260904
15	1.557967	1.675349	1.800944	1.935222	2.078922	2.398555
16	1.604706	1.733986	1.872931	2.022350	2.182875	2.540352
17	1.652848	1.794676	1.947900	2.113377	2.292017	2.692773
18	1.702433	1.857486	2.025817	2.208479	2.406619	2.854339
19	1.753506	1.922501	2.106849	2.307360	2.526950	3.025599
20	1.806111	1.989729	2.191122	2.411714	2.653298	3.207135
21	1.860295	2.059431	2.278768	2.522041	2.785963	3.399564
22	1.916103	2.131812	2.369919	2.633652	2.925261	3.603537
23	1.973587	2.206114	2.464716	2.752166	3.071524	3.819750
24	2.032794	2.283328	2.563302	2.876614	3.225100	4.048935
25	2.093778	2.363245	2.665331	3.005434	3.386355	4.291871
26	2.156591	2.445959	2.772470	3.140679	3.555673	4.549383
27	2.221280	2.531567	2.883369	3.282096	3.733456	4.822246
28	2.287928	2.620172	2.998703	3.429700	3.920129	5.111637
29	2.356566	2.711878	3.118611	3.584036	4.116136	5.418388
30	2.427222	2.806791	3.243398	3.745318	4.321942	5.743491
31	2.500080	2.905031	3.373133	3.913857	4.538039	6.088101
32	2.575083	3.006702	3.508059	4.089981	4.764941	6.453387
33	2.652335	3.111942	3.648381	4.274030	5.003189	6.840590
34	2.731903	3.220860	3.794316	4.466362	5.253348	7.251025
35	2.813862	3.333590	3.946080	4.667348	5.516015	7.686087

ANNUITIES.

Table I. continued.

Construction of Table I.

The numbers in this Table are the powers of 1*l.* increased by its interest for a year: that is, they are the powers of the amount of 1*l.* in a year, at the several rates of interest: supposing *r* to be that amount, they are *r*, *r*², *r*³, *r*⁴, &c.

Use. To find the amount of any sum in any number of years, not exceeding 100. Ans. Opposite to the given number of years, and under the rate of interest, is the amount of 1*l.* in that time, which, multiplied by the given sum, produces the required amount.

Examples.

1. What will 10*l.* amount to in 100 years, at 4 per cent. per ann. compound interest? Ans. 50.504948, multiplied by 10, is 505*l.* 1*s.*
2. What will 250*l.* amount to in 50 years, at 5 per cent. per ann. compound interest? Ans. 11.4674 multiplied by 250, is 2866*l.* 17*s.*

TABLE II.

Shewing the principal that will amount to 1*l.* in any number of years not exceeding 100; or the present value of 1*l.* to be received at the end of any number of years not exceeding 100; discounting at any rate of compound interest from 3 to 6 per cent.

Years	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
36	2.898278	3.450266	4.103933	4.877378	5.791316	8.147252
37	2.975227	3.571025	4.268090	5.096860	6.081407	8.936087
38	3.047483	3.696011	4.388813	5.326220	6.385477	9.154257
39	3.167025	3.825572	4.616366	5.568899	6.704751	9.703502
40	3.262038	3.959260	4.801021	5.816365	7.039987	10.285718
41	3.359899	4.097834	4.995061	6.078101	7.391988	10.902861
42	3.460696	4.241258	5.192783	6.351615	7.761388	11.557033
43	3.564517	4.389702	5.400495	6.637438	8.149667	12.250455
44	3.671452	4.543342	5.616515	6.936123	8.557150	12.983482
45	3.781596	4.702359	5.841176	7.248238	8.985008	13.764611
46	3.895044	4.866941	6.074823	7.574420	9.434258	14.590487
47	4.011896	5.037284	6.317816	7.915268	9.905971	15.465917
48	4.132252	5.213589	6.570528	8.271456	10.401270	16.393872
49	4.256219	5.396065	6.833349	8.643671	10.921333	17.377504
50	4.383906	5.584927	7.106683	9.032636	11.467400	18.420154
51	4.515223	5.780399	7.390951	9.439105	12.040770	19.525364
52	4.650886	5.982713	7.686589	9.863805	12.642808	20.696885
53	4.790412	6.192108	7.994052	10.307739	13.274949	21.938698
54	4.934125	6.408832	8.313814	10.771877	13.938696	23.255020
55	5.082149	6.633141	8.646367	11.256308	14.635631	24.650322
56	5.234613	6.8655301	8.992222	11.742842	15.367412	26.129341
57	5.391651	7.105587	9.351910	12.242170	16.135783	27.697101
58	5.553401	7.354282	9.725987	12.75318	16.942572	29.358927
59	5.720003	7.611682	10.115026	13.283358	17.789701	31.120463
60	5.891603	7.878091	10.519627	13.827457	18.679186	32.983691
61	6.068351	8.153824	10.940412	14.385864	19.613145	34.966952
62	6.250402	8.439208	11.378029	14.958280	20.604960	37.064960
63	6.437914	8.734580	11.833150	15.546603	21.624393	39.288968
64	6.631051	9.040291	12.306476	16.172795	22.704667	41.646200
65	6.829983	9.356701	12.798735	16.844702	23.839900	44.144972
66	7.034882	9.684185	13.310685	17.563334	25.031896	46.793670
67	7.245929	10.023132	13.843120	18.328349	26.283490	49.601290
68	7.463307	10.373941	14.396866	19.148385	27.597665	52.577368
69	7.687206	10.737209	14.972710	20.024606	28.977548	55.732010
70	7.917822	11.112855	15.571618	20.958136	30.426426	59.075930
71	8.155357	11.501777	16.194483	21.94422	31.947747	62.620486
72	8.400017	11.904336	16.842262	22.988821	33.545134	66.377715
73	8.651018	12.320988	17.515953	24.09318	35.222391	70.360378
74	8.912578	12.752221	18.216591	25.27987	36.982001	74.582001
75	9.178926	13.198550	18.945255	26.58996	38.832686	79.056921
76	9.454293	13.660500	19.703065	27.958611	40.774320	83.800336
77	9.737922	14.138617	20.491187	29.485199	42.813036	88.828356
78	10.030060	14.633469	21.310835	30.979233	44.953688	94.18058
79	10.330962	15.145640	22.163268	32.373298	47.201372	99.80751
80	10.640891	15.675738	23.049799	33.830096	49.561441	105.795992
81	10.960117	16.224388	23.971791	35.352451	52.039513	112.143753
82	11.288921	16.792242	24.930663	36.943311	54.641489	118.872378
83	11.627588	17.379970	25.927889	38.605760	57.373563	126.004721
84	11.976416	17.988269	26.965005	40.343019	60.242241	133.565004
85	12.335709	18.617859	28.043605	42.158455	63.254353	141.578904
86	12.705780	19.269483	29.165349	44.055586	66.417071	150.073639
87	13.086953	19.943916	30.331963	46.038087	69.737925	159.078057
88	13.479562	20.641953	31.545242	48.109801	73.224822	168.622741
89	13.883944	21.364421	32.807051	50.274742	76.886062	178.740105
90	14.300467	22.112176	34.119333	52.537105	80.720365	189.464511
91	14.729481	22.886102	35.484107	54.901273	84.766883	200.832382
92	15.171366	23.687116	36.903471	57.371837	89.055227	212.882325
93	15.626507	24.516165	38.379610	59.953565	93.455489	225.655263
94	16.095302	25.374230	39.914794	62.651475	98.118263	239.194580
95	16.578161	26.262330	41.511386	65.470792	103.034676	253.546255
96	17.075706	27.181510	43.171841	68.416977	108.186414	268.759030
97	17.587771	28.132863	44.898715	71.495741	113.595731	284.884572
98	18.115404	29.117513	46.694664	74.713050	119.275517	301.977646
99	18.658866	30.136625	48.562450	78.075137	125.239293	320.096305
100	19.218632	31.191408	50.504948	81.588511	131.501258	339.302382

Years	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
1	.970874	.966184	.961538	.956938	.952381	.943316
2	.942596	.933511	.924556	.915730	.907029	.889996
3	.915142	.901943	.888996	.876297	.863838	.832619
4	.888487	.871442	.854800	.838561	.822702	.792092
5	.862600	.841973	.821927	.802451	.783526	.747258
6	.837484	.813501	.790315	.767896	.746215	.704961
7	.813092	.785991	.759918	.734288	.710681	.665057
8	.789409	.759411	.730690	.703185	.676839	.627412
9	.766417	.733731	.702587	.672904	.644609	.591898
10	.744094	.708919	.675564	.643928	.613913	.558395
11	.722421	.684946	.649581	.616199	.584679	.526788
12	.701380	.661783	.624597	.589664	.556837	.496969
13	.680958	.639404	.600574	.564272	.530321	.468840
14	.661118	.617782	.577473	.539973	.505068	.442301
15	.641862	.596891	.555264	.516720	.481017	.417265
16	.623167	.576706	.533908	.494469	.458112	.393646
17	.605016	.557204	.513373	.473116	.436297	.371364
18	.587395	.538361	.493628	.452800	.415521	.350344
19	.570286	.520156	.474642	.433302	.395734	.330513
20	.553616	.502566	.456387	.414643	.376889	.311805
21	.537549	.485571	.438834	.396787	.358942	.294155
22	.521892	.469151	.421955	.379701	.341850	.277505
23	.506692	.453286	.405726	.363350	.325571	.261797
24	.491934	.437957	.390121	.347703	.310066	.246979
25	.477606	.423147	.375117	.332731	.295303	.232999
26	.463695	.408838	.360689	.318402	.281241	.219816
27	.450189	.395012	.346817	.304691	.267848	.207368
28	.437077	.381654	.333477	.291571	.255094	.195630
29	.424346	.368748	.320651	.279015	.242946	.184557
30	.411987	.356278	.308319	.267000	.231377	.174110
31	.399987	.344230	.296460	.255502	.220359	.164255
32	.388337	.332590	.285058	.244500	.209866	.154957
33	.377026	.321343	.274094	.233971	.199873	.146186
34	.366045	.310476	.263552	.223896	.190250	.137912
35	.355383	.299977	.253445	.214135	.180395	.130105
36	.345032	.289833	.243609	.205028	.171265	.122741
37	.334983	.280032	.234300	.196199	.164436	.115793
38	.325226	.270562	.225285	.187750	.156605	.109239
39	.315754	.261412	.216621	.179665	.149148	.103056
40	.306557	.252572	.208289	.171929	.142046	.097222

ANNUITIES.

Table II. *continued.*

Construction of Table II.

Years.	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
41	.297628	.244031	.200178	.164525	.135282	.091719
42	.289259	.235779	.192575	.157440	.128840	.086527
43	.280543	.227806	.185168	.150661	.122704	.081630
44	.272371	.220102	.178046	.144173	.116861	.077009
45	.264439	.212659	.171198	.137964	.111297	.072650
46	.256731	.205468	.164614	.132023	.105997	.068538
47	.249259	.198520	.158283	.126338	.100949	.064658
48	.241997	.191806	.152195	.120898	.096142	.060998
49	.234950	.185320	.146341	.115692	.091564	.057546
50	.228107	.179055	.140713	.110710	.087204	.054288
51	.221463	.172998	.135301	.105942	.083051	.051215
52	.215013	.167148	.130097	.101380	.079096	.048316
53	.208750	.161496	.125093	.097014	.075330	.045582
54	.202670	.156035	.120282	.092837	.071743	.043001
55	.196767	.150758	.115656	.088839	.068316	.040567
56	.191036	.145660	.111207	.085013	.065073	.038271
57	.185472	.140734	.106930	.081353	.061974	.036105
58	.180070	.135975	.102817	.077849	.059023	.034061
59	.174825	.131377	.098863	.074497	.056212	.032133
60	.169733	.126934	.095060	.071289	.053536	.030314
61	.164789	.122642	.091404	.068219	.050986	.028598
62	.159990	.118495	.087889	.065281	.048558	.026980
63	.155330	.114487	.084508	.062470	.046246	.025452
64	.150806	.110616	.081258	.059780	.044044	.024012
65	.146413	.106875	.078135	.057206	.041946	.022653
66	.142149	.103261	.075128	.054743	.039949	.021370
67	.138009	.099769	.072238	.052385	.038047	.020161
68	.133989	.096395	.069460	.050129	.036235	.019020
69	.130086	.093136	.066788	.047971	.034509	.017943
70	.126297	.089986	.064219	.045905	.032866	.016927
71	.122619	.086943	.061749	.043928	.031301	.015969
72	.119047	.084003	.059374	.042073	.029811	.015065
73	.115580	.081162	.057091	.040226	.028391	.014213
74	.112214	.078418	.054895	.038494	.027039	.013408
75	.108945	.075766	.052784	.036836	.025751	.012649
76	.105772	.073204	.050754	.035250	.024525	.011933
77	.102691	.070728	.048801	.033732	.023357	.011258
78	.099700	.068336	.046924	.032280	.022245	.010620
79	.096796	.066026	.045120	.030890	.021186	.010019
80	.093977	.063793	.043384	.029559	.020177	.009452
81	.091240	.061636	.041716	.028287	.019216	.008917
82	.088582	.059551	.040111	.027068	.018301	.008412
83	.086002	.057537	.038569	.025903	.017430	.007936
84	.083497	.055592	.037085	.024787	.016600	.007487
85	.081065	.053712	.035659	.023720	.015809	.007063
86	.078704	.051896	.034287	.022699	.015056	.006663
87	.076412	.050141	.032969	.021721	.014339	.006286
88	.074186	.048445	.031700	.020786	.013657	.005930
89	.072026	.046807	.030481	.019891	.013006	.005595
90	.069928	.045224	.029309	.019034	.012387	.005278
91	.067891	.043695	.028182	.018215	.011797	.004979
92	.065914	.042217	.027098	.017430	.011235	.004697
93	.063994	.040789	.026055	.016680	.010700	.004432
94	.062130	.039410	.025053	.015961	.010200	.004181
95	.060320	.038077	.024090	.015274	.009705	.003944
96	.058563	.036790	.023163	.014616	.009243	.003721
97	.056858	.035546	.022272	.013987	.008803	.003510
98	.055202	.034344	.021416	.013385	.008384	.003311
99	.053594	.033182	.020592	.012808	.007985	.003124
100	.052033	.032060	.019800	.012257	.007604	.002947

The numbers in this Table are the reciprocals of the corresponding numbers in the last, or the quotients of unity divided, by those numbers; that is, $\frac{1}{r}, \frac{1}{r^2}, \frac{1}{r^3}, \frac{1}{r^4}$,

&c. Supposing r to denote $1l.$ with its interest for a year. Use. To find what the present value is of any sum payable in any future time: and also what principal will amount to a given sum in any number of years. *Ans.* Opposite to the given number of years, and under the rate of interest, is the present value of $1l.$ to be received at the end of the given time, or the sum that will amount to $1l.$ in that time, which, multiplied by the given sum, produces the required value or principal.

1. What is the present value of 1000*l.* to be received 10 years hence, reckoning compound interest at 5 per cent.? *Ans.* .613913, multiplied by 1000, is 613*l.* 18*s.* 3*d.* nearly.

2. What principal will amount to 1000*l.* in 10 years, at 5 per cent. per ann. compound interest? *Ans.* .613913, multiplied by 1000*l.*, is 613*l.* 18*s.* 3*d.*

3. What sum put out for 25 years at 4½ per cent. compound interest will clear a debt of 4000*l.*? *Ans.* .332731, multiplied by 4000, is 1330*l.* 18*s.* 6*d.*

ANNUITIES.

TABLE III.

The present value of an annuity of 1*l.* for any number of years not exceeding 100, at any rate of compound interest from 3 to 6 per cent.

Years.	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
1	.97084	.966184	.961538	.956938	.952381	.947869
2	1.913470	1.899694	1.886095	1.872668	1.859410	1.846333
3	2.828611	2.801637	2.775091	2.748966	2.723248	2.697912
4	3.717098	3.673079	3.629895	3.587526	3.545950	3.505066
5	4.579707	4.515052	4.451822	4.389077	4.326777	4.264964
6	5.417191	5.328553	5.242137	5.157872	5.075692	4.995534
7	6.232023	6.114544	6.002055	5.892701	5.786373	5.683081
8	7.019692	6.873956	6.732745	6.595883	6.462994	6.333679
9	7.786109	7.607688	7.435332	7.268790	7.107822	6.951969
10	8.532023	8.316605	8.110896	7.912718	7.721735	7.538087
11	9.252624	9.001551	8.760477	8.528917	8.306414	8.093875
12	9.954004	9.663334	9.385074	9.118481	8.863252	8.620384
13	10.634955	10.302778	9.985648	9.682532	9.393573	9.118683
14	11.296073	10.920520	10.563123	10.222825	9.893641	9.294984
15	11.937935	11.517411	11.118887	10.739546	10.379658	9.712249
16	12.561102	12.094117	11.652296	11.234051	10.837720	10.153895
17	13.166118	12.611321	12.165297	11.707191	11.274066	10.477262
18	13.753513	13.189682	12.659297	12.159992	11.689587	10.827603
19	14.333799	13.709857	13.133813	12.59294	12.085321	11.158116
20	14.9077475	14.212403	13.590326	13.007936	12.462210	11.466921
21	15.41504	14.697974	14.029160	13.404724	12.821153	11.764077
22	15.936917	15.167125	14.451115	13.784425	13.163003	12.041582
23	16.443688	15.620410	14.856842	14.147775	13.488574	12.303379
24	16.935542	16.058368	15.246963	14.495478	13.798842	12.550358
25	17.41148	16.483151	15.622080	14.828209	14.093945	12.813356
26	17.876842	16.890352	15.982769	15.146611	14.375185	13.003166
27	18.327031	17.285304	16.329580	15.451303	14.643034	13.210524
28	18.76408	17.667019	16.663063	15.742874	14.898127	13.406164
29	19.188455	18.037567	16.983715	16.021889	15.141074	13.590721
30	19.600441	18.392045	17.292033	16.288889	15.372451	13.764831
31	20.000428	18.736276	17.588494	16.544391	15.592810	13.929086
32	20.388765	19.068865	17.873551	16.788891	15.802677	14.084047
33	20.765792	19.390208	18.147646	17.022862	16.002549	14.230230
34	21.131837	19.700684	18.411198	17.246158	16.199064	14.368141
35	21.487220	20.000661	18.664613	17.461022	16.374194	14.498246
36	21.832252	20.290494	18.908282	17.666040	16.546852	14.620987
37	22.167235	20.570525	19.142579	17.862240	16.711287	14.736780
38	22.492462	20.841087	19.367864	18.049990	16.867893	14.846010
39	22.808215	21.102500	19.584485	18.229656	17.017031	14.949075
40	23.114772	21.355072	19.792774	18.401584	17.159086	15.046297
41	23.412400	21.599104	19.993052	18.566109	17.294368	15.138016
42	23.701359	21.834882	20.185627	18.723550	17.423208	15.224547
43	23.981902	22.062689	20.370795	18.874220	17.545912	15.306173
44	24.254274	22.282791	20.548841	19.018183	17.662273	15.383182
45	24.518713	22.495450	20.720040	19.156347	17.774070	15.455832
46	24.775449	22.700918	20.884652	19.288371	17.880066	15.524370
47	25.024708	22.899438	21.042936	19.414709	17.981016	15.588028
48	25.267707	23.091244	21.195131	19.535607	18.077158	15.650027
49	25.501657	23.276564	21.341472	19.651298	18.168722	15.707572
50	25.729764	23.455618	21.482185	19.762008	18.255925	15.761861
51	25.951227	23.628816	21.617485	19.867950	18.338977	15.813076
52	26.166240	23.795765	21.747582	19.969350	18.418073	15.861393
53	26.374990	23.957200	21.872675	20.066345	18.493405	15.906974
54	26.577660	24.113295	21.992957	20.159181	18.565146	15.949970
55	26.774420	24.264053	22.108612	20.248021	18.633472	15.990543
56	26.965464	24.409713	22.219819	20.333034	18.698545	16.028814
57	27.150966	24.550442	22.326749	20.414387	18.760519	16.064919
58	27.331005	24.686242	22.429567	20.492236	18.819541	16.098980
59	27.505831	24.817800	22.528430	20.567397	18.875750	16.131113
60	27.675584	24.944734	22.623450	20.639222	18.929290	16.161428

Table III. continued.

Years.	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
61	27.840355	25.067376	22.714894	20.706241	18.980276	16.190026
62	28.000343	25.185870	22.802783	20.771523	19.028834	16.217006
63	28.156673	25.300358	22.887291	20.833993	19.075080	16.242458
64	28.309478	25.410974	22.968549	20.893773	19.119124	16.266470
65	28.458289	25.517849	23.046682	20.950979	19.161070	16.289123
66	28.595040	25.621110	23.121810	21.005722	19.202019	16.310493
67	28.733049	25.720875	23.194048	21.058107	19.239606	16.330654
68	28.867038	25.817275	23.263507	21.108236	19.275301	16.349673
69	28.997124	25.910412	23.330296	21.156207	19.309810	16.367616
70	29.123421	26.000396	23.394515	21.202112	19.342677	16.384544
71	29.246040	26.087340	23.456264	21.246040	19.373978	16.400511
72	29.365087	26.171343	23.515639	21.288077	19.403788	16.415578
73	29.480667	26.252595	23.572730	21.328303	19.432170	16.429791
74	29.592831	26.330923	23.627624	21.366797	19.459218	16.443190
75	29.701826	26.406689	23.680408	21.403634	19.484970	16.455848
76	29.807598	26.479892	23.731162	21.438884	19.509495	16.467781
77	29.910290	26.550621	23.779963	21.472616	19.532855	16.479035
78	30.009990	26.618957	23.826588	21.504896	19.555099	16.489659
79	30.106986	26.684983	23.872007	21.535785	19.576284	16.499679
80	30.200763	26.748776	23.915392	21.565345	19.596460	16.509131
81	30.292003	26.810411	23.957108	21.593632	19.615677	16.518048
82	30.380580	26.869963	23.997219	21.620700	19.633978	16.526460
83	30.466588	26.927500	24.035787	21.646605	19.651407	16.534366
84	30.550086	26.983092	24.072872	21.671390	19.668007	16.541830
85	30.631111	27.036804	24.108531	21.695110	19.683816	16.548947
86	30.709855	27.088699	24.142318	21.717809	19.698873	16.555610
87	30.786267	27.138840	24.175787	21.739530	19.713212	16.561896
88	30.860454	27.187185	24.207487	21.760316	19.726869	16.567827
89	30.932479	27.234092	24.237604	21.780209	19.739875	16.573421
90	31.002407	27.279316	24.267278	21.799241	19.752262	16.578699
91	31.070298	27.323010	24.295459	21.817455	19.764059	16.583679
92	31.136212	27.365227	24.322557	21.834888	19.775294	16.588376
93	31.200206	27.406017	24.348601	21.851565	19.785994	16.592808
94	31.262336	27.445427	24.373666	21.867526	19.796185	16.596988
95	31.322656	27.483504	24.397756	21.882800	19.805891	16.600932
96	31.381216	27.520294	24.420919	21.897417	19.815134	16.604653
97	31.438077	27.555839	24.443161	21.911403	19.823937	16.608163
98	31.493270	27.590183	24.464607	21.924788	19.832321	16.611475
99	31.546872	27.623365	24.485199	21.937596	19.840306	16.614599
100	31.598905	27.655425	24.504999	21.949853	19.847910	16.617546
Fee Simple.	33.333333	28.571429	25.000000	22.222222	20.000000	16.666666

Construction of Table-III.

The 2d, 3d, 4th, &c. numbers in this Table, are the sums of the first 2, 3, 4, &c. numbers in the second; that is, the sums of $\frac{1}{r} + \frac{1}{r^2}$, of $\frac{1}{r} + \frac{1}{r^2} + \frac{1}{r^3}$, of $\frac{1}{r} + \frac{1}{r^2} + \frac{1}{r^3} + \frac{1}{r^4}$, &c.

Use. To find the present worth of an annuity for any given term. Multiply the present value opposite to the given number of years, and under the rate of interest, by the given annuity, and the product will be the answer.

Example.

What is the present value of an annuity of 40*l.* to continue 20 years, at 4 per cent? *Ans.* 13.590326, multiplied by 40, is 543*l.* 12*s.* nearly.

ANNUITIES.

TABLE IV.

The amount of an annuity of *1l.* in any number of years not exceeding 100, when improved at compound interest.

Years	At 3 per Cent.	$3\frac{1}{2}$ per Cent.	4 per Cent.	$4\frac{1}{2}$ per Cent.	5 per Cent.	6 per Cent.
1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
2	2.030000	2.035000	2.040000	2.045000	2.050000	2.060000
3	3.090900	3.106225	3.121600	3.137025	3.152500	3.183600
4	4.183027	4.214943	4.246464	4.278191	4.310125	4.374610
5	5.309136	5.362466	5.416323	5.470710	5.525631	5.637093
6	6.468410	6.550152	6.632975	6.716892	6.801913	6.975319
7	7.662462	7.779408	7.898294	8.019152	8.142008	8.393838
8	8.892336	9.051687	9.214226	9.380014	9.549109	9.897468
9	10.159106	10.368496	10.582795	10.802114	11.026564	11.491316
10	11.463879	11.731393	12.006107	12.288209	12.577893	13.180795
11	12.807796	13.141992	13.486351	13.841179	14.206787	14.971643
12	14.192030	14.601962	15.025805	15.464032	15.917127	16.869941
13	15.617790	16.113030	16.626838	17.159913	17.712983	18.882138
14	17.086324	17.676986	18.291911	18.932109	19.598632	21.015066
15	18.598914	19.295681	20.023588	20.784054	21.578564	23.275970
16	20.156881	20.971030	21.824531	22.719337	23.657492	25.672528
17	21.761588	22.705016	23.697512	24.741707	25.840366	28.212880
18	23.414435	24.499691	25.645413	26.855084	28.132385	30.905653
19	25.116808	26.357180	27.671229	29.063562	30.539004	33.759992
20	26.870374	28.279682	29.778079	31.371423	33.065954	36.785591
21	28.676486	30.269471	31.969202	33.783137	35.719252	39.992727
22	30.536780	32.328902	34.247970	36.303378	38.505214	43.392290
23	32.452884	34.460414	36.617889	38.937030	41.430475	46.995828
24	34.426470	36.666528	39.082604	41.689196	44.501959	50.815577
25	36.459264	38.949857	41.645908	44.565210	47.727099	54.864512
26	38.553042	41.313102	44.311745	47.570645	51.113454	59.156383
27	40.709634	43.759060	47.084214	50.711324	54.660126	63.705766
28	42.930923	46.290627	49.967583	53.993333	58.402583	68.528112
29	45.218850	48.910799	52.966286	57.423033	62.322712	73.639798
30	47.575416	51.622677	56.084938	61.007070	66.438847	79.058186
31	50.002678	54.429471	59.328335	64.752388	70.760790	84.801677
32	52.502759	57.334502	62.701469	68.666245	75.298829	90.889778
33	55.077841	60.341210	66.209527	72.756226	80.063771	97.343165
34	57.730177	63.453152	69.857909	77.030256	85.066959	104.183755
35	60.462082	66.674013	73.652225	81.496618	90.320307	111.434780
36	63.275944	70.007603	77.598314	86.163966	95.836323	119.120867
37	66.174223	73.457869	81.702246	91.041344	101.628139	127.268119
38	69.159449	77.028895	85.970336	96.138205	107.709546	135.904206
39	72.234233	80.724906	90.409150	101.464424	114.095023	145.058458
40	75.401260	84.550278	95.025516	107.030323	120.799774	154.761966
41	78.663298	88.509537	99.826536	112.846688	127.839763	165.047684
42	82.023196	92.607371	104.819598	118.924789	135.231751	175.650545
43	85.483892	96.848629	110.012382	125.276404	142.993339	187.507577
44	89.048409	101.238331	115.412877	131.913842	151.143006	199.758032
45	92.719861	105.781673	121.029392	138.849965	159.700156	212.743514
46	96.501457	110.484031	126.870568	146.098214	168.685164	226.508125
47	100.396501	115.350973	132.945390	153.672633	178.119422	241.098612
48	104.408396	120.388257	139.263206	161.587902	188.025393	256.564529
49	108.540618	125.601846	145.833734	169.859357	198.426663	272.958401
50	112.796867	130.997910	152.667084	178.503028	209.347996	290.335905

ANNUITIES.

Table IV. continued.

Years.	At 3 per Cent.	3½ per Cent.	4 per Cent.	4½ per Cent.	5 per Cent.	6 per Cent.
51	117.180773	136.582837	159.773767	187.535665	220.815395	308.75'059
52	121.696197	142.363236	167.164718	196.974769	232.856165	328.81422
53	126.347082	148.345950	174.851306	206.838634	245.498974	348.978308
54	131.137495	154.538058	182.845359	217.146373	258.773922	370.917006
55	136.071620	160.946890	191.159173	227.917959	272.712618	394.172027
56	141.153768	167.580031	199.805540	239.174268	287.348249	418.822340
57	146.388381	174.445332	208.797762	250.937110	302.715662	444.951689
58	151.780033	181.550919	218.149672	263.229280	318.851415	472.648790
59	157.333434	188.905201	227.875659	276.074597	335.794017	502.007718
60	163.053437	196.516882	237.992685	289.497954	353.583718	533.128181
61	168.945040	204.394974	248.510313	303.525362	372.262904	566.115872
62	175.013391	212.548798	259.450725	318.184003	391.876049	601.082824
63	181.263793	220.988006	270.828754	333.502283	412.469851	638.147793
64	187.701707	229.722586	282.661904	349.509886	434.093344	677.430661
65	194.332758	238.762876	294.968380	366.237831	456.798011	719.082861
66	201.162741	248.119577	307.767116	383.718533	480.637912	763.227832
67	208.197623	257.803762	321.077800	401.985867	505.609807	810.021502
68	215.443351	267.826894	334.920912	421.075232	531.953298	859.622792
69	222.906858	278.200835	349.317749	441.023617	559.550963	912.200160
70	230.594064	288.937865	364.290459	461.869680	588.528511	967.932170
71	238.511886	300.050690	379.862077	483.653815	618.954936	1027.008100
72	246.667242	311.552464	396.056560	506.418237	650.902683	1089.628586
73	255.062599	323.456800	412.898823	530.207057	684.447818	1156.006301
74	263.719277	335.777788	430.414776	555.066375	719.670208	1226.360679
75	272.630856	348.530011	448.631367	581.044362	756.653718	1300.948680
76	281.809781	361.728561	467.576621	608.191358	795.486404	1380.005601
77	291.264075	375.389061	487.279886	636.559969	836.260725	1463.805937
78	301.001997	389.527678	507.770874	666.205168	879.073761	1552.634293
79	311.032057	404.161147	529.081708	697.184401	924.027449	1646.792350
80	321.363019	419.306787	551.244977	729.557699	971.228821	1746.599891
81	332.003909	434.982524	574.294776	763.387795	1020.790262	1852.395885
82	342.964026	451.206913	598.266567	798.740246	1072.829775	1964.539638
83	354.252947	467.999155	623.197230	835.683557	1127.471264	2083.412016
84	365.880536	485.379125	649.125119	874.289317	1184.844827	2209.416737
85	377.856952	503.367394	676.090124	914.632336	1245.087069	2342.981741
86	390.192660	521.985253	704.133728	956.790791	1308.341422	2484.560646
87	402.898440	541.254737	733.299078	1000.846377	1374.758493	2634.634285
88	415.985393	561.198653	763.631041	1046.884464	1444.496418	2793.712342
89	429.464955	581.840606	795.176282	1094.994265	1517.721239	2962.335082
90	443.348904	603.205027	827.983334	1145.269007	1594.607301	3141.075187
91	457.649371	625.317203	862.102667	1197.806112	1675.337666	3330.539698
92	472.378852	648.203305	897.586774	1252.707387	1760.104549	3531.372080
93	487.550217	671.890421	934.490245	1310.079219	1849.109777	3744.254405
94	503.176724	696.306585	972.869854	1370.032784	1942.565265	3969.909669
95	519.272026	721.780816	1012.784649	1432.684259	2040.693529	4209.104250
96	535.850186	748.043145	1054.296035	1498.155051	2143.728205	4462.650505
97	552.925692	775.224655	1097.467876	1566.572028	2251.914615	4731.409535
98	570.513463	803.357517	1142.366591	1638.067770	2365.510346	5016.294107
99	588.628807	832.475031	1189.061255	1712.780819	2484.785864	5318.271753
100	607.287733	862.611657	1237.623705	1790.855956	2610.025157	5638.308059

Construction of Table IV.

The first number of each column in this Table is unity. The second is the first number in this Table added to the first number in the first Table. The third number is the second in this table added to the second in the first Table, and so on: that is, the numbers in this Table are 1, $1+r$, $1+r+r^2$, $1+r+r^2+r^3$, &c. which series, by proceeding in the same manner as in the case of $\frac{1}{r} + \frac{1}{r^2} + \frac{1}{r^3}$, &c. expressing the value of an annuity certain, may be found
$$= \frac{r-1}{r-1}$$

Use. To find the amount of an annuity forborne any number of years not exceeding 100. Multiply the amount in the Table opposite to the given number of years, and under the rate of interest, by the given annuity. The product is the answer.

Examples.

1. What will an annuity of 50*l.* amount to in 15 years, at $3\frac{1}{2}$ per cent. compound interest? *Ans.* 19.29581, multiplied by 50, is 964*l.* 15*s.* 8*d.*

2. What is the amount of an annuity of 20*l.* in 28 years, at 4 per cent? *Ans.* 49.9675, multiplied by 20, is 999*l.* 7*s.*

3. A person is possessed of 1000*l.* principal, bearing 4 per cent. interest, and in order to increase his income, resolves, in addition to the interest of 40*l.* to take out of his principal 20*l.* the first year, and afterwards as much more as will be necessary to make a constant income of 60*l.* per ann. in what time will he reduce his principal to nothing? *Ans.* In the same time that an annuity of 20*l.* would increase at 4 per cent. compound interest to 1000*l.* that is, in 28 years by the preceding question.

He that would gain farther information on this subject should consult Malcolm's Arithmetic, from page 595 to the end; Simpson's Algebra, sect. 16; Mr. Dodson's Mathematical Repository, p. 298, &c. Jones's Synopsis, ch. 10. Phil. Transf. vol. lxvii. p. 109, &c.

For an explanation of the doctrine of annuities on lives, see ASSURANCE, COMPLEMENT, EXPECTATION, LIFE ANNUITIES, MORTALITY, REVERSIONS, SURVIVORSHIPS.

ANNUITY, in Law, is a thing very distinct from a rent-charge, with which it is often confounded; because a rent-charge is a burden imposed upon, and issuing out of lands; whereas, an annuity is a yearly sum, chargeable only upon the person of the grantor. Therefore, if a man by deed grant to another the sum of 20*l.* per annum, without expressing out of what lands it shall issue, no land at all shall be charged with it; but it is a mere personal annuity; which is of so little account in the law, that if granted to an eleemosynary corporation, it is not within the statutes of mortmain: and yet a man may have a real estate in it, though his security is merely personal.

If the annuitant of an annuity payable half yearly, since the last term of payment, die before the half year is completed, nothing is due for the time he lives. There are now very few, if any grants of annuities, without a covenant for payment, expressed or implied; and therefore, where a distress cannot be made, or is not approved of, the grantee may bring an action of covenant, and recover the arrears in damages, with costs of suit. And that action is now usually brought, real actions, and writs of annuity, being much out of use.

The practice of purchasing annuities for lives, at a certain price or premium, instead of advancing the same

sum on an ordinary loan, arises usually from the inability of the borrower to give the lender a permanent security for the return of the money borrowed, at any one period of time. He therefore stipulates (in effect) to repay annually, during his life, some part of the money borrowed; together with legal interest for so much of the principal as annually remains unpaid, and an additional compensation for the extraordinary hazard run of losing that principal entirely by the contingency of the borrower's death; all which considerations, being calculated and blended together, will constitute the just proportion or quantum of the annuity which ought to be granted. If, by the terms of the contract, the lender's principal is *boni fide* (and not colourably) put in jeopardy, no inequality of price will make it an usurious bargain; though under some circumstances of imposition, it may be relieved against in equity. To throw, however, some check upon improvident transactions of this kind, which are usually carried on with great privacy, the statute 17 Geo. III. c. 26 usually called the "Annuity Act," has directed, that upon the sale of any life-annuity of more than the value of 10*l.* per annum (unless on a sufficient pledge of lands in fee-simple, or stock in the public funds), the true consideration, which shall be in money only, shall be set forth and described in the security itself; and a memorial of the date of the security, of the names of the parties, *cestuy que trusts*, *cestuy que vies*, and witnesses, and of the consideration money, shall, within 20 days after its execution, be enrolled in the court of Chancery, (the security shall be null and void; and in case of collusive practices respecting the consideration, the court in which any action is brought, or judgment obtained upon such collusive security, may order the same to be cancelled, and judgment (if any) to be vacated: if the security be set aside for want of complying with the formalities of the act, the consideration, if fair and legal, may be recovered back by the grantee, in action of "assumpsit" against the person *actually* receiving such consideration money, but not against a surety: and also all contracts for the purchase of annuities from infants, shall remain utterly void, and be incapable of confirmation after such infants arrive to the age of maturity. Blackst. Com. vol. ii. p. 40—461, &c.

ANNUITIES, *Publicæ*. See NATIONAL DEBT and FUND.

ANNULAR, ANNULARIS, something that relates to, or resembles a ring, by the Latins called *annulus*.

ANNULAR cartilage, or ANNULARIS, in Anatomy, is the second cartilage of the *larynx*, being round, in shape much resembling a ring, and invelling the whole *larynx*; called also *cricoides*. See LARYNX.

ANNULAR eclipse, in Astronomy. See ECLIPSE.

ANNULAR ligaments, *ligamenta annularia*, is a name given to those ligaments which confine the tendons of the CARPUS and TARSUS.

Add, that the sphincter muscle of the anus is also called *annularis*, or *annular* muscle, from its figure.

ANNULAR process, or protuberance, is a prominent part of the MEDULLA oblongata. See BRAIN.

ANNULAR is also an epithet given to the fourth finger; popularly called the ring finger.

ANNULARIA, in Entomology, a species of PHALÆNA, of the *geometra* section. The wings are cinereous, with a brown streak, a ring in the middle, and two brown bands behind: inhabits Germany. Fabricius, Gmelin, &c.

ANNULARIS, a species of CERAMBYX, in the section *callidium*, Gmelin's arrangement. The thorax is spotted with black, wing-cases bidentated and rather greenish, with three black bands, the first annular: inhabits Siam. Fabricius and Gmelin.

ANNULARIS,

ANNULARIS, is also a species of *TENTHREDO*, that inhabits Austria. It is shining black, tips of the antennæ white, shanks of the legs ferruginous. Fabricius.

ANNULARIS, in *Ichthyology*, a species of *CHÆTODON*. The body is striated, and has a small ring on the lateral line. Gmelin. The body is brown, with blue incurvated streaks, and covered with very small scales; the irides of the eyes are silvery; gill-covers of two pieces, the anterior one of which is toothed and spinous; lateral line parallel with the back, anus in the middle of the body; anal fin, round with a streak of blue; dorsal fin, black brown, the others white. This is ikan batoc jang aboe, and ikan pampus cambodia, of Valent. Ind. &c.

ANNULATA, in *Entomology*, a species of *CASSIDA*, found in India, and described by Fabricius. It is blue, with two rufous spots on the thorax, and rings of the same colour on the wing-cases. Fab. and Gmelin. *Obs.* This is a large species; the thorax is obscure, with a faint rufous spot on each side; wing-cases gibbous, dull blue, with six rufous annulations; beneath, black, with a rufous dot on both sides each segment of the abdomen.

ANNULATA, a species of *CHRYSOMELA*, in the section *altica*. It is brown bronzed; wing-cases striated and crenated; base of the antennæ rufous; shanks of the four anterior legs rufous, with a bronzy-brown annulation. Linnæus and Gmelin.

ANNULATA, a species of *NEPA*, that inhabits the coast of Coromandel. It is with a tail, subrotund, pale brown; shanks of the anterior legs pale, annulated with brown. Fabricius.

ANNULATA, a species of *SPHINX*, in the Linnæan arrangement; *ZYGAENA*, in that of Fabricius. It is black, with six yellow spots on the anterior wings; base of the posterior wings and spot yellow; abdomen annulated with yellow; inhabits New Holland.

ANNULATA, a species of *PHALÆNA*, found in Hamburg, and described by Fabricius. The wings are black, with snowy-white spots; shanks of the legs annulated with white.

ANNULATA, a species of *PHRYGANEÆ*, that inhabits Europe. It is brown, with long antennæ annulated with white; inner and posterior margins of the wings ciliated. Linnæus, Gmelin, &c.

ANNULATA, a name under which two different species of *TENTHREDO* are described by Gmelin in the *Systema Naturæ*; one is the Linnæan species of that name, but the other is adopted, with great impropriety, from the mantissa of Fabricius. To prevent in some measure the confusion which might evidently arise from the same name being assigned to two distinct insects, it is necessary to attend to the characters of the two sections to which they belong. *Tenthredo annulata*, Linn. is in the section "antennis filiformibus, articulis 7—9;" antennæ filiform, with from seven to nine articulations; and the other in that of "antennis ex-articulatis, extrorsum crassioribus;" antennæ without articulations, and thickest at the tip. The first species is yellow, with the antennæ somewhat clavated and black; tip of the shanks and ends of the feet annulated with black. The second is black, the abdomen yellow, feet of the posterior legs black, annulated with white. Fabricius Mantif. Both kinds inhabit Europe.

ANNULATA, a species of *APIS*, found in Europe. It is small, and smells like musk; the colour is black; front and rings on the legs white. Linnæus and Fabricius.

ANNULATA, a species of *TIPULA*. The wings are brown, variegated; thighs annulated with white; inhabits Europe. Linnæus, Fabricius, &c.

ANNULATA, a species of *CONOPS* that inhabits Europe. The thorax is black; abdomen cylindrical, varied with yellow and black; base of the wings and legs ferruginous, the latter annulated with brown. Linnæus and Gmelin.

ANNULATA, a species of *PODURA*. It is livid, with black rings; and inhabits Europe. Fabricius and Gmelin. This is a podura livida lutca, annulis transversis nigris of Geoffroy.

ANNULATA, in *Conchology*, a species of *OSTREA*, that inhabits the North Seas; and supposed by some to be a variety of *ostrea papyracea*. The shell is equivalve, orbicular, and white, with concentric semi-circles. Gmelin and Müll.

ANNULATA, a species of *VOLUTA*. It is white, smooth, with a carinated dorsal ring; its habitation is unknown, and there is a variety of it (β), undulated with pale red. Gmelin, Martini, &c.

ANNULATA, a species of *HELIX*. The shell is umbilicated, slightly depressed, and white; wreaths four, the first gibbous and bicarinated. Gmelin.

ANNULATORIUS, in *Entomology*, a species of *ICHNEUMON*, found in Great Britain, and described by Fabricius from a specimen in the cabinet of Sir Joseph Banks, Bart. The scutellum is yellowish; thorax spotted, and four first segments of the abdomen margined with yellow; wings transparent. Fabricius and Gmelin.

ANNULATUM, in *Conchology*, a species of *DENTALIUM*. It is round and striated obliquely: found in a fossil state. Gmelin, Guettard, &c.

ANNULATUS, in *Conchology*, a species of *TROCHUS*, found in the sands of the Indian sea. The wreaths are reversed, and ribbed on each side; aperture almost square. Gmelin, Chemn. &c. This is a small species, scarcely exceeding a quarter of an inch in length, and the number of wreaths are usually from twelve to fifteen.

ANNULATUS, is likewise the specific name of a shell of the *TURBO* genus; its native place is unknown: it is figured by Gualteri, and thus very concisely characterized by Gmelin; wreaths with a prominent and margined future: this shell is white, a quarter of an inch in length, aperture suboval.

ANNULATUS, in *Entomology*, a species of *CURCULIO*, that inhabits North America. It is pale, thorax and wing-cases streaked with black. Fabricius and Gmelin. The streaks are disposed transversely, one upon the thorax, and two on the wing-cases.

ANNULATUS, a species of *CERAMBYX*, in the section or family, *stenocorus*. The thorax is lineated, wing-cases unidentated, antennæ long, with three white rings. Fabricius and Gmelin. *Obs.* The thorax is grey, with four white lines; the wing-cases grey, brown at the tip, and edged with white; and the legs grey, with brown annulations. Cabinet of Sir Joseph Banks, Bart.

ANNULATUS, a species of *GRYLLUS*, in the section *locusta*, having a flattish thorax, gibbous front, wings bluish-black, and blue within: it inhabits America, and is of a reddish grey, and rough, with elevated dots; abdomen annulated, with a few greenish rings; antennæ yellow, with black rings.

ANNULATUS, a species of *CIMEX*, described by Fabricius and Gmelin as a native of Virginia. It is greyish, thighs annulated with white. This belongs to the family *spinofus*, in the Gmelinian arrangement of cimices, and must not be confounded with another of the same name in the family *oblongus*, which is an European insect. It is black, posterior part of the thorax and anterior of the wing-cases greyish; legs annulated with brown. Gmelin. There is also another

another species of cimex in the family *reduvius*, called **ANNULATUS**, which likewise inhabits Europe. The tips of the antennæ are capillary; body black, with sanguineous spots on the under side. Linnæus. This last is *cimex niger rutipes* of Degeer.

ANNULATUS, a species of *ICHNEUMON*, that inhabits Europe. It is black, with rufous legs; thighs and feet of the posterior pair annulated with white. Gmelin.

ANNULATUS, a species of *ASILUS*, that inhabits India. It is cinereous; abdomen black at the end; thighs testaceous, annulated with black. Fabricius and Gmelin.

ANNULATUS, a species of *CULEX*. It is brown; abdomen and legs annulated with white; wings spotted. Fabricius and Gmelin. In the size and shape, this resembles the common gnat (*culex pipiens*); the beak is half the length of the body. Inhabits Germany and Denmark.

ANNULATUS, in *Ornithology*, a species of *ORIOLEUS* that inhabits America, and is considered as a bird of prey. It is yellow; head and neck black; greater wing-coverts and quill-feathers blackish, edged with pale yellow; a blackish band across the tail. Gmelin, &c.

This is the ring-tailed oriole of Latham; *avis ocozinitzcan* of Seba; *arc-en-queue* of Buffon; *ïterus cauda annulata* of Brisson; and *cornix flava* of Klein. It is about the size of a pigeon; the bill yellow, and a little bent at the point; head and neck black; body yellow; tail yellow; each feather marked transversely with a broad blackish band; and which, when the tail is expanded, forms a crescent, with the concave part towards the body; legs grey.

ANNULATUS, in *Zoology*, a species of *COLUBER*; described by Linnæus and Gmelin, as having 190 abdominal scuta or plates on the belly, and 96 subcaudal scales; but it appears from synonymous authors, that the number of those plates and scales vary exceedingly in different specimens, and that its specific characters should rather be taken from the colour, form and disposition of the spots, which are less liable to variations: in one instance, for example, the abdominal scuta amounted to only 184, and the subcaudal scales to 60; in another to 186—84; and in a third to 196—95. Its general description is, back, cinereous grey, brownish, or brownish-white, with a band, or series of round, alternate, brown spots, that occasionally join or become confluent, especially at some distance down the neck, and are furrounded with pale margins; belly white. Dr. Shaw's specific character is, *C. griseus, maculis dorsalibus rotundis fuscis pallido marginatis*. Grey snake, with round, brown, dorsal spots, with pale margins. Vol. iii. p. 2. 490.

This creature inhabits America, is from a foot and an half to two or three feet in length; the head is rather large, as are also the scales that cover it; the tail gradually tapering.

ANNULATUS, a species of *ANGUIS*, of a white colour, with straight brown stripes that meet on the under side; tail tapering, and a double row of imbricated scales beneath. Laur. Gmelin.

ANNULET, from the Latin *annulus*, a ring, in *Heraldry*, granted in coat-armour to those who were in confidence, or entrusted with especial commissions by the king; the annulet, or ring, being the gage of the royal favour and protection. It is also borne as a mark of filiation for the fifth son. The colour of the *annulet* must always be expressed.

Annulets were anciently reputed a mark of nobility and jurisdiction; it being the custom of prelates to receive their investiture *per baculum & annulum*.

ANNULETS, in *Architecture*, are small square members, in

the Doric capital, placed under the quarter ground. They are also called *fillets*, *lyflets*, &c.

ANNULET is also used for a narrow flat moulding, common to other parts of a column; *viz.* the bases, &c. as well as the capital; so called, because it encompasses the column around. In which tense annulet is frequently used for *bagnette*, or *little astragal*.

ANNULLING, compounded of *ad* and *nullus*, none; *q. d.* *undoing*; the abolishing of an act, procedure, sentence, or the like.

ANNULOSUS, in *Entomology*, a species of *ICHNEUMON*, found in Europe. It is black; antennæ slightly annulated with black; legs rufous; sting short. Linnæus and Gmelin.

ANNULUS, in *Conchology*, a species of *CYPRITA*, very common about Amboyna, and also Alexandria. It is of an ochreous colour on the outside, and blue within. Its specific character is, shell furrounded on the back with a yellow ring. Linnæus and Gmelin. This is the *thoracicum quadratum* of Rumphius.

ANNULUS, in *Entomology*, a species of *CASSIDA*, that inhabits Cayenne. It is yellowish, brown in the disk, and annulated in the middle with yellow. Fabricius, *Spec. Inf.*

ANNULUS, a species of *APIS*, grey and downy, thorax black; and a black clouded band in the middle of the abdomen. Linnæus and Gmelin. Inhabits Europe.

ANNULUS, or *Ring*, in *Geometry*. The area of it may be had by finding the areas of the outer and inner circles, and their difference is the area required. Or, multiply the sum of the diameters by their difference, and the product by $\frac{7854}{10000}$.

ANNUNCIADE, or **ANNUNCIATION**. This order was instituted by Ame VI. earl of Savoy, under the title of the *Collar*, in 1362, in honour of the fifteen divine mysteries of the rosary. Favin, on a mistaken ground, calls it *The Order of the Manes of Love*, in regard its founder had received of his lady a bracelet made of the tresses of her hair, plaited in love-knots; and that the Founder should signify *frappes, entres, rompes tout*. It remained, however, as the collar, till Charles III. or Le-bon, duke of Savoy, who bestowed on it the title of the *Annunciation*, from the picture of the Annunciation which he annexed to the collar. The founder appointed the number of knights to be fifteen; among whom was Sir Richard Mufard, an English gentleman, in 1434; their number was increased in 1568, to twenty. Rienc castle, in Buger, was their principal seat. The ancient collar was of gold, three fingers broad; on which were engraved the letters F.E.R.T. and one Knot, called the *Savoy Knot*, at the end of each F.E.R.T. which, with three other Knots entwined one within the other, made up the circumference pendant at the collar, without any figure. The initials were supposed to be for the words *Fortitudo Ejus Rhodum Tenuit*, alluding to Amadeus le Grand, who so valiantly defended Rhodes against the Turks in 1310. This, however, was long after the house of Savoy took that device, as appears from the coins of Lewis de Savoy, baron de Vaud, who died in 1301; as also from the monument of Thomas de Savoy, who died in 1233, whereon was lying at the feet of his portraiture, a dog, bearing a collar about his neck, with the word *Fert*; also a silver coin of Peter de Savoy (who erected in England the building of that name in the Strand, temp. Hen. III.) whereon is the word *FERT*, in Gothic characters. Duke Charles III. surnamed the Good, in 1518, ordered that the badge or *mystery* of the Annunciation of the Blessed Virgin should be represented within a circle of gold, formed of true-

true-lover's knots, pendant to the collar, which was to be of gold, weighing two hundred gold crowns, and composed of the letters F. E. R. T. intermixed with true-lover's knots, separated by fifteen roses of gold, five of them enamelled *white*, five *red*, and five partly *white and red*, and edged with two thorns gold. The knights wear in common the badge pendant to three small chains of gold round the neck. The reigning king of Sardinia is sovereign of the order.

ANNUNCIATION, compounded of *ad* and *nuncio*, *I declare*, the tidings which the angel Gabriel brought to the Holy Virgin, of the incarnation of Christ.

The Greeks call it *ευαγγελισμοσ*, *good tidings*, and *χαριστισμοσ*, *salutation*.

ANNUNCIATION is also the name of a feast, celebrated annually on the 25th of March, popularly called *Lady-day*, in commemoration of that wonderful event.

Some authors are of opinion, that the feast was originally solemnized in honour of our Saviour; and that the holding it in the name and honour of the Virgin is of much later standing. This feast seems to be of great antiquity. Among the sermons of St. Augustin, who died in 430, we have two upon the Annunciation. Proculus, who died in 446, and Chrysostom in 407, have, in their works, discourses on this subject. But the Protestant writers reject these authorities, and the writings on which they are founded, as spurious. Bingham refers the commencement of this feast to the seventh century.

Several of the eastern churches celebrate the Annunciation at a different season from those of the west. The Syrians call it *Basfarach*, q. d. *search, inquiry*; and mark it in the calendar for the first day of December. The Armenians hold it on the fifth of January: thus anticipating the time, to prevent its falling in Lent; but the Greeks make no scruple of celebrating the festival even in Lent. In the west likewise, there has been some variation as to the time of keeping this feast. The tenth council of Toledo, in 636, ordained it to be celebrated eight days before Christmas.

The Jews also give the title Annunciation to part of the ceremony of their passover; *viz.* that, wherein they explain the origin and occasion of that solemnity. This explanation they call *הגדרה*, *Haggada*, q. d. the *Annunciation*.

ANNUNCIATOR, in the *Greek Church*, an officer whose business is to give notice of the feasts and holydays to be observed.

ANNUNTIATE, **ANNUNTIADA**, or **ANNUNTIATA**, a denomination common to several orders, both religious and military; instituted with a view to the Annunciation. The first religious order of this kind was instituted in 1232, by seven Florentine merchants. These are also called *servites*, q. d. *servants*.

The second was a nunnery at Bourges, founded in 1500, by Joan of Valois, queen of France, after her divorce from Lewis XII.

The third was also a nunnery, founded by a Genoese lady in 1604. The fourth was a friary, founded by Cardinal Torrecremata, at Rome, in 1460; which last became so very rich, that they gave fortunes of 60 Roman crowns to above four hundred girls, on the anniversary of the Annunciation.

ANNY, in *Geography*, a river of France, on the coast of the English channel, north of the river Soame, and south from Boulogne.

ANOA, in *Zoology*, *bos bubalus anoa*, a variety of the buffalo, mentioned by Pennant, *Hist. of Quadr.* vol. i.

p. 30. This animal is about the size of a middling sheep; it inhabits the mountains of Celebes; is very fierce, lives in small herds, sheltering itself in the caverns of the mountains; is caught with difficulty, and is very impatient of confinement.

ANOBIUM, in *Entomology*, a genus of **COLEOPTEROUS** insects, in the Fabrician system, having four clavate palpi, or feelers; jaws obtuse and dentated; lip entire; and antennæ filiform; with the three extreme joints elongated, and rather thicker than the others. Fabricius. This genus includes some insects of the **PTINUS** and **DERMESTES** genera, of the Linnæan system, and **BYRRHUS** of Geoffroy; besides some new species not described by either. In the *Species Infectorum*, the species of this genus are, *perlinax*, *molle*, *frumentarium*, *flavipes*, *nigrum*, *lineatum*, *cyaneum*, & *minutum*, in all eight species: the arrangement in the last system of that author, *Entomologia Systematica*, is somewhat different, being *tessellatum*, *striatum*, *rufipes*, *castaneum*, *perlinax*, *holcti*, *molle*, *paucicum*, *abictis*, *planum*, *capense*, *minutum*, *micans*, & *nitidum*.

Olivier adopts the genus **ANOBIUM** after Fabricius, describing the species *tessellatum*, *striatum*, *castaneum*, & *paniceum*, as insects of that genus; and Gmelin, in the *Systema Naturæ*, makes the first division of the **PTINUS** of Linnæus, "palpis clavatis," (clavate feelers), **ANOBIUM** of Fab. to distinguish them from the true *ptini* which have the feelers filiform. Professor Thunberg has also described several species of anobium in his *Nov. Inf.* as *rutipes*, *cœruleum*, &c. but which Gmelin consigns to the **DERMESTES** genus in the Linnæan system.

ANOCCHUS, an imaginary name of a *medicine*, concerning which many fruitless conjectures have been made. The word occurs only in Gaza's translation of the account which Theophrastus has left us of the **EUONYMUS** of those times. The author says, that the goats which eat the leaves and fruit of the euonymus were killed by it, and that they died of a stoppage of the bowels, which he has expressed by the word *ανοχος*, derived from the verb *ανεσχεν*, which signifies a retention of the stools.

It is to be observed by the way, that the euonymus of the Greeks could not be the same plant known at this time by that name, since the cattle eat our euonymus or *jusquiam* whenever they can get it, and that without any danger; but the descriptions of these plants in the ancient and modern authors shew also that they were very different.

ANOCTORON, in *Ecclesiastical History*, a name used by some writers for a church.

Anoctora properly import Roman halls, divers of which were converted into churches. In which sense *anoctora* amount to much the same with **BASILICÆ**.

ANOCYSTI, in *Natural History*, the name of one of the subdivisions of the **ECHINUS** genus, in the arrangement of Klein and other naturalists; consisting of such as have the vent at the top of the shell, and all the tentacula simple, (auro verticali, tentaculis undique simplicibus). This is the first of the three principal divisions of the echini in the Linnæan system, by Gmelin; the second is **BRISSEI** of Müller, in which the vent is situated at the bottom of the shell, and the mouth destitute of tentacula; the third is **SPATANGI** of Müller, having the vent on the side, and the mouth furnished with pencilled tentacula. Each of those divisions are again subdivided according to the shape of the shell. See **ECHINUS**.

ANODA, in *Botany*. See **SIDA**.

In Gmelin's edition of Linnæus, *anoda* is a genus of the *monadelphia polyandria* class and order; the characters of which

which are, that the *calyx* is simple, semiquinquefid, permanent, and very much dilated by the ripe fruit; and the *capsule* is many-celled, above hemispherical, beneath flattened, with single-seeded cells. There are three species. 1. *A. dilectiana*, with triangular leaves, the lower crenated, the upper obsoletely crenated and petiolated, with peduncles axillary, single-flowered, and very long. 2. *A. hastata*, lida eriolata, with cordate, angulate leaves; the upper elongated and bilobed, with very long, axillary, and single-flowered peduncles. 3. *A. triloba*, with the inferior leaves cordate, somewhat angulate and crenated; the upper trilobed, with axillary, solitary, very long, and single-flowered peduncles.

ANODYNE, derived from the privative α , and *oduvau*, *dolo*, to be in pain, in *Physic*, is understood of such remedies, as calm and alluage pain. It is now generally employed for those medicines which relieve pain by diminishing or destroying sensibility; and in this sense, the general term is allowable.

Anodynes are of two kinds; the first proper, called also *palegorics*. The second spurious, or improper, which rather stupefy than alleviate; acting only by inducing a stupor, drowsiness, or sleep. These are more properly called *narcotics*, *hypnotics*, or *opiates*.

The true *anodynes* are applied externally to the part affected. Such, among the class of simples, are the onion, lily, root of mallows, leaves of violets, elder, &c. Camphor is said to be the best anodyne in nervous cases, and at the decline of fevers.

Anodynes should not be given without great caution, nor on a full stomach, nor in dropries. Hemlock procures ease and sleep, without causing that head-ach next morning, usually complained of after taking opium. If the pulse be strong, a larger dose is safe; if weak, a less dose must be given.

We have also certain compound medicines in the shops, prepared with this intention, and called by this name. Such is the *anodyne liniment*, commonly called *anodyne balsam*, prepared in the following manner: take of opium one ounce, white Castile soap four ounces, camphor two ounces, essential oil of rosemary half an ounce, and rectified spirit of wine two pounds; digest the opium and soap in the spirit for three days; then to the strained liquor add the camphor and oil, diligently shaking the vessel. It is recommended not only for procuring ease in the most racking extremities of pain, but also for assisting in discharging the peccant matters that occasioned it. This balsam is much the same with the modern *opodeldoc*. A ready way of preparing an useful, safe, and efficacious *anodyne*, is as follows: take half an ounce of opium, dissolve it in a gentle heat in three ounces of water, strain the solution, and evaporate it to a dry substance; grind this to powder in a glass mortar with twice the quantity of loaf-sugar, and you have an excellent preparation of opium, to be given three or four grains for a dose. Shaw's Lect. p. 233.

By dissolving the opium thus in water, we get rid, not only of its gross and foul parts, but also of its resinous, which are found much more pernicious than the rest; and by dividing its parts afterwards with sugar, the medicine is rendered more uniform, resoluble, and miscible with animal fluids.

But however opium is prepared, it still must be acknowledged, that it retains qualities that make it little less than a poison in a very large dose; whence it were much to be wished something could be found that would be more innocent, and yet answer the same purpose. And this camphor and nitre will do on many, though not on all occasions,

An *anodyne* ointment may be prepared, by mixing ten dram. of olive oil, half an ounce of yellow wax, and one dram of crude opium. Opium, thus externally applied, will in some degree produce the same effect, as when it is used under the form of anodyne balsam, in which state it produces effects more immediately; but under this form, its effects are more permanent. The present ointment also furnishes an useful dressing for sores attended with severe pain. For Hoffman's anodyne, see LIQUOR *Mineralis Anodynus*.

ANOINTED. See CHRIST, and MESSIAH.

ANOINTERS, in *Ecclesiastical History*, a religious sect formerly subsisting in some parts of England, so called from the ceremony they used in anointing all persons before they admitted them into their church. They founded their opinion of anointing upon the fifth of James, verses 14 and 15. See Plot's Oxfordsh. 208.

ANOINTING, a term used by painters. It implies their method of restoring the effect of the colours, after the oil has been drained out of them, by the absorption of the ground of the picture, or the former coat or layer of colours, whilst they were drying, termed improperly the sinking of the colours. This anointing is performed by means of varnish, oil, or both together, rubbed in with an hard hogs hair tool. Besides restoring the appearance of the colours, it has another effect; that of disposing the picture to receive with advantage the future touches of the brush or pencil. When the anointing is newly laid on, it promotes softness and union; and when almost, but not perfectly dry, it disposes the picture to receive smart or crank touches. Some painters have been more liberal in the quantity of varnish, &c. in anointing than may be judicious; too much oil should not be applied to the more brilliant and lighter parts of pictures; nor should japanners' gold-size be introduced in anointing, unless with great caution.

Without an application of this nature, it would be almost impossible for the painter of delicate works to proceed with any degree of certainty. The best mixture for this purpose, is an equal quantity of strong drying oil and mastic varnish united. This will retain its clammy nature long enough for the purpose of the artist, while he covers with paint the anointed portion.

Those who proceed more slowly with the pencil than is usual, will do well to use a little fat linseed oil with the mixture we have mentioned, which will not so soon grow hard or dry. Gerard Lairesse, whose pictures retain their colours, has recommended this mixture with fat oil, upon retouching pictures; and this in a plentiful manner, in order that the picture may not require varnishing. On the contrary, Mr. Bardwell recommends the anointing as necessary, but that almost the whole should be wiped off with an old silk handkerchief, before the paint is applied to the picture. The glazing colours should in general be applied with a liberal use of the anointing mixture; and those colours which are used in the scumbling of pictures should be employed more sparingly. See GLAZING and SCUMBLING. Titian appears to have proceeded in this manner with his pictures, and to have thus produced his most admirable effects.

ANOLE, in *Zoology*, the name of a species of lizard common in the West Indies, about houses and plantations. It is of the size of the common lizard of Europe, but its head is longer; its skin is of a yellowish colour, and its back variegated with green, blue, and grey lines running from the neck to the tail. They creep into holes for the night, and there make a continual and very disagreeable noise; in the day time, they are always in motion.

ANOLYMPIADES, in *Antiquity*, a name given by the Eleans to those Olympic games which had been celebrated under

under the direction of the Pisæans and Arcadians. The Eleans claimed the sole right of managing the Olympic games, in which they sometimes met with competitors. The hundred and fourth Olympiad was celebrated by order of the Arcadians, by whom the Eleans were at that time reduced very low; this, as well as those managed by the inhabitants of Pisa, they called *ανολυμπιαδας*, unlawful Olympiads, and left them out of their annals, wherein the names of the victors, and other occurrences, were registered. Potter, Arch. Græc.

ANOMALA, in *Conchology*, a species of PATELLA, in the family "integerrimæ abique vertice mucronato." It is a coarse, brown, orbicular shell, with the vertex submarginal; and inhabits the deeps of the Norway seas. Müll. This shell is minute and rough, with fine elevated dots; sometimes of a cinereous colour, and blue beneath. The animal consists of two reddish, tough, twisted masses, which are fringed the whole length; the fringes are yellow, composed of rigid hairs, and connected with the rest of the body by a blue tendon; the ovaries are ramose, and orange; the eggs globose. It is uncertain whether this shell belongs to the patella genus or not. Müll. Gmelin.

ANOMALISTICAL Year, in *Astronomy*, called also *periodical year*, is the space of time in which the earth passes through her orbit.

The anomalistical, or common year, is somewhat longer than the tropical year; by reason of the PRECESSION of the equinox. The apses of all the planets have a similar progressive motion; whence they take a longer time in arriving at the aphelion, which has advanced a little, than in attaining to the same fixed star. E. G. The tropical revolution of the sun, with respect to the equinox, is $365^d 5^h 48' 45''$; but the sidereal revolution, or return to the same fixed star, is $365^d 6^h 9' 10\frac{1}{2}''$; and the anomalistic revolution is $365^d 6^h 15' 20''$, because the sun's apogee advances each year $65\frac{1}{2}''$ with respect to the equinoxes; and the sun cannot arrive at the apogee till he has passed over $65\frac{1}{2}''$ more than the revolution of the year answering to the equinoxes. To find the anomalistic revolution, use this proportion: As the whole secular motion of a planet, minus the motion of its aphelion, is to 100 years, or 3155760000 seconds, so is 360° to the duration of the anomalistic revolution.

ANOMALOUS, *irregular*, something that deviates from the ordinary rule and method of other things of the same kind.

The word is not compounded of the privative α and $\nu\omicron\mu\omicron\varsigma$, *λατν*, as is usually imagined; for whence, on such supposition, should the last syllable *al*, arise? But it comes from the Greek *ανωμαλις*, *uneven*, *rough*, *irregular*, formed of the privative α and *ομαλος*, *plain*, *even*.

ANOMALOUS verbs, in *Grammar*; are such as are irregular in their conjugations; deviating from the rules or formulas observed by others.

There are anomalous verbs, or irregular inflexions of verbs, in all languages. In the English, the chief irregularity of our anomalous verbs lies in the formation of the preter tense, and passive participle; though this only holds of the native Teutonic or Saxon words, and not of the foreign words, borrowed from the Latin, French, &c.

The principal irregularity arises from the quickness of our pronunciation, whereby we change the consonant *d* into *t*, cutting off the regular ending *ed*.

Thus for *mixed*, we write *mixt* or *mix'd*; for *dweltled*, *dwelt*, or *dwell'd*; for *snatched*, *snatcht*, &c. But this property is rather of the nature of a contraction than an irregularity; and is complained of by some of our politer writers

as an abuse, to the disadvantage of our language, tending to disfigure it, and turn a tenth part of our smoothest words into clusters of consonants; which is the more inexcusable, because our want of vowels has been the general complaint of the best writers.

Another irregularity relates to the preter tense, and passive participle. Thus *give*, if it were regular, or formed according to the rule, would make *gived*, in the preter tense, and the passive participle; whereas it makes *gave* in the preter tense, and *given* in the passive participle.

ANOMALY, in *Grammar*, denotes an irregularity in the accidents of a word, whereby it deviates from the common rules of paradigms, whereby other words of the like kind are governed.

ANOMALY, in *Astronomy*, is an irregularity in the motion of a planet, whereby it deviates from the *aphelion* or *apogee*, or the angular distance of a planet from the APHELION or APOGEE; that is, the angle formed by the line of the apses, and another line drawn through the planet.

Kepler distinguishes three kinds of *anomaly*; *mean*, *eccentric*, and *true*.

ANOMALY, *mean*, or *simple*, in the *Ancient Astronomy*, is the distance of a planet's mean place from the apogee, which Ptolemy calls the angle of mean motion.

In the modern astronomy, it is the time in which a planet, describing an ellipse APQ (*Plate I. Astronomy, fig. 9.*), round the sun in the focus, moves from its aphelion A, to the mean place or point of its orbit P; or, it is the angular distance of the planet at a given time from the aphelion, supposing that it had moved uniformly with its mean angular velocity.

Hence, as the elliptic area ASP, is proportional to the time in which the planet describes the arc AP; the area may represent the mean anomaly. Or thus, the area ASN, found by drawing a line IP through the planet's place, perpendicular to the line of the apses AQ, till it cuts the circle AVQ, and drawing the line SN, may represent the mean anomaly; for this area is every where proportional to the former area ASP, as is demonstrated by Dr. Gregory, Phil. Transf. N^o 447. Or, if ST be drawn perpendicular to the radius NC produced, then the mean anomaly will be proportional to ST + the circular arc AN, as Keil has demonstrated in his "Astronomical Lectures," Lect. II. Hence, if ND be taken equal to ST, the arc AD, or the angle ACD, will be the mean anomaly for practical purposes, expressed in the degrees of a circle; the number of those degrees being to 360° , as the elliptic trilineal area ASP, is to the whole area of the ellipse; and the degrees of mean anomaly are those contained in the arc AD, or angle ACD.

ANOMALY of the *eccentric*, or of the *centre*, in the *Modern Astronomy*, is an arc AK, of the eccentric circle (*fig. 9.*), included between the aphelion A, and a right line NI, drawn through the centre of the planet P, perpendicularly to the line of the apses AQ; or, it is the angle ACN at the centre of the circle. Hence the eccentric anomaly is to the mean anomaly, as AN to AN + ST; or, as AN to AD; or, as the angle ACN to the angle ACD.

In the *Ancient Astronomy*, it is an arc of the zodiac, terminated by the line of the apses, and the line of the mean motion of the centre. See the methods of finding the *anomaly of the eccentric*, in Phil. Transf. N^o 447.

ANOMALY, *true*, or *equated*, is the angle at the sun ASP, under which a planet's distance AP from the aphelion appears; or, it is the angle or area, taken proportional to the time in which the planet moves from the mean place P, to its aphelion A; or, in other words, it is the angle formed by

the radius vector, or line SP, drawn from the sun to the planet, with the line of the apsidæ.

Hence, in the sun's motion, it will be the distance of his true place from the apogee.

The true anomaly being given, the mean one is easily found. But it is much more difficult to find the true anomaly from the mean anomaly given, at least by any direct process. Kepler, who first proposed this problem, and from whom it is called "Kepler's Problem," could not find a direct method of resolving it, and therefore used an indirect one, by the rule of false position; as may be seen in Kepler's Epitomæ Astron. Copern. p. 695. See also Wolfius's Elem. Astron. apud Oper. § 692, &c. tom. iii. p. 47. For the angle ASP, which is the true anomaly, being given, the point P will be given, and consequently the proportion of the area ASP to the whole ellipse, or of the mean anomaly to 360°. For the further illustration of this subject, let a body move uniformly in the circle from A to D with the mean angular velocity of the body in the ellipse, whilst the body moves in the ellipse from A to P; then, from what has been above stated, the angle ACD is the mean, and the angle ASP the true anomaly; and the difference of these two angles is called the equation of the planet's centre, or PROSTHAPHERESIS. Let p = the periodic time in the ellipse or circle (the periodic times being supposed equal), and t = the time of describing AP or AD; then, as the bodies in the ellipse and circle describe equal areas in equal times, about S and C respectively, we have the area ADC : area of the circle :: $t : p$, and area of the ellipse : area ASP :: $p : t$; also the area of the circle : area of the ellipse :: area ASN : area ASP; consequently the area ADC : area ASP :: area ASN : area ASP, and hence ADC = ASN; from which, let the area DCN, which is common, be taken away, and the area DNC = SNC; but DCN = $\frac{1}{2}$ DN × CN, and SNC = $\frac{1}{2}$ ST × CN; therefore ST = DN. Now if t be given, the arc AD will be given; for as the body in the circle moves uniformly, we have $p : t :: 360^\circ : AD$. Thus we always find the mean anomaly at any given time, provided that the time be known when the body was in the aphelion; hence, by finding ST or ND, we shall know the angle NCA, called the eccentric anomaly, from whence, by one proportion, we shall be able to find the angle ASP the true anomaly. The problem is therefore reduced to this; to find a triangle CST, such, that the angle C + the degrees of an arc equal to ST may be equal to the given angle ACD. This may be expeditiously done by trial in the following manner, given by M. de la Caille in his Astronomy. Find what arc of the circumference of the circle ADQE is equal to CA, by saying, 355 : 113 :: 180° : 57° 17' 44", 8 the number of degrees of an arc equal in length to the radius CA : hence CA : CS :: 57° 17' 44", 8 : the degrees of an arc equal to CS. Assume, therefore, the angle SCT, multiply its sine into the degrees in CS, and add it to the angle SCT, and if it equal the given angle ACD, the supposition was right; if not, add or subtract the difference to or from the first supposition, according as the result is less or greater than ACD, and repeat the operation, and in a very few trials you will obtain the accurate value of the angle SCT. The degrees in ST may be most readily obtained by adding the logarithm of CS to the logarithm of the sine of the angle SCT, and subtracting 10 from the index, and the remainder will be the logarithm of the degrees of ST.

Having found the value of AN, or of the angle ACN, the eccentric anomaly, we may proceed to find the angle ASP, or the true anomaly.

Let v be the other focus, and put AC = 1; then by Eucl. b. ii. prop. 12. $SP^2 - Pv^2 = vS^2 + 2vS \times vI = \frac{vS + 2vI}{vS} \times vS = \frac{2Cv + 2vI}{2C} \times 2SC = 2CI \times 2SC$; hence $SP + Pv : 2CI :: 2SC : SP - Pv$; or $2 : 2CI :: 2SC : SP - 2 - SP$, or $1 : CI :: SC : SP - 1$; hence $SP = 1 + CS \times CI = 1 + CS \times \text{cof. ACN}$. By plain trigonometry, $\frac{1 - \text{cof. ASP}}{1 + \text{cof. ASP}} = \text{tang. } \frac{1}{2} \text{ASP}$. See Mauduit's Trig. or Crackelt's Transl. ch. i. Th. 6. But SP , or $1 + CS \times \text{cof. ACN} : \text{rad.} = 1 : SI$, or $CS + CI$, or $CS + \text{cof. ACN} : \text{cof. ASP} = \frac{CS + \text{cof. ACN}}{1 + CS \times \text{cof. ACN}}$. Hence $\text{tang. } \frac{1}{2} \text{ASP} = \left(\frac{1 - \text{cof. ASP}}{1 + \text{cof. ASP}} \right) = \frac{1 + CS \times \text{cof. ACN} - CS - \text{cof. ACN}}{1 + CS \times \text{cof. ACN} + CS + \text{cof. ACN}} = \frac{1 - CS + \text{cof. ACN} \times CS - 1}{1 + CS + \text{cof. ACN} \times CS + 1} = \frac{SQ - \text{cof. ACN} \times SQ}{SA + \text{cof. ACN} \times SA} = \frac{1 - \text{cof. ACN}}{1 + \text{cof. ACN}} \times \frac{SQ}{SA} = (\text{by the above theorem in Trigon.}) \text{tang. } \frac{1}{2} \text{ACN} \times \frac{SQ}{SA}$; therefore $\sqrt{SA} : \sqrt{SQ} :: \text{tang. } \frac{1}{2} \text{ACN} : \text{tang. } \frac{1}{2} \text{ASP}$; consequently, as ACN is known, we obtain ASP the true anomaly. E. G. Required the true place of Mercury on August 26, 1740, at noon, the equation of the centre, and its distance from the sun. By M. de la Caille's Astronomy, Mercury was in its aphelion on August the 9th at 6^h 37'. Hence, on August the 26th, it had passed its aphelion 16^d 17^h 23'; therefore, 87^d 23^h 15' 32" (the time of one revolution) : 16^d 17^h 23' :: 360° : 68° 26' 28", the arc AD, or mean anomaly. Now (according to this author), CA : CS :: 1011276 : 211165 :: 57° 17' 44", 8 : 11° 57' 50" = 43070", the value of CS reduced to the arc of a circle, the log. of which is 4.6341749. Also, 68° 26' 28" = 246388". Assume the angle SCT to be 60° = 216000", and the operation to find the angle ACN will stand thus:

	4.6341749		
	9.9375306	log. of	216000 = a
	4.5717055	-	37300

		253300	
		246388	

		6912 = b	
	4.6341749	-	209088 = a - b = 58° 4' 48" = c
	9.9287987	-	36557
	4.5629736	-	245645
		-----	246388
		-----	743 = d
	4.6341749	-	209831 = c + d = 58° 17' 11" = e
	9.9297694	-	36639
	4.5639443	-	246470
		-----	246388
		-----	82 = f

$$f_3 - \frac{e^3}{2} + \frac{f_1^3}{2 \cdot 3} + \frac{cy^4}{2 \cdot 3 \cdot 4} - \&c. \text{ Also rad.} = 1 : \sin.$$

$$AN \text{ or } \angle SCF :: SC = g : ST \text{ or } ND \text{ or } y = ge - \frac{g^2 f}{2} -$$

$$\frac{\frac{1}{2} g^3}{2} + \frac{\frac{1}{2} f^3}{3} + \frac{\frac{1}{2} cy^4}{2 \cdot 3 \cdot 4} - \&c. \text{ hence } ge = y + \frac{g^2 f}{2} + \frac{\frac{1}{2} g^3}{2} -$$

$$- \frac{\frac{1}{2} f^3}{2 \cdot 3} - \frac{\frac{1}{2} cy^4}{2 \cdot 3 \cdot 4} + \&c. \text{ Put } g^2 = e, 1 + gf = a, \frac{g^2 e}{2} = b,$$

$$\frac{gf}{2 \cdot 3} = c, \frac{g^3}{2 \cdot 3 \cdot 4} = d, \&c. \text{ hence } e = ay + by^2 - cy^3 -$$

$$dy^4 + \&c. \text{ and by the reversion of series, } y = \frac{z}{a} -$$

$$\frac{bz^2}{a^2} + \frac{2b^2 + ac}{a^3} \times z^3 - \frac{5abc - 3b^2 + a^2 d}{a^4} \times z^4 \&c. \text{ but}$$

$$b = \frac{g^2 e}{2} = \frac{e}{2}, d = \frac{e}{2 \cdot 3 \cdot 4}, \&c. \text{ therefore } y = \frac{z}{a} -$$

$$\frac{z^2}{2a} + \frac{ez^4}{a^3} - \frac{5ez^5}{2a^6} \&c. \text{ If the arc AN be greater than}$$

90° and less than 270°, *f* becomes negative, and therefore *gf* or *e* will be negative; hence $y = \frac{z}{a} - \frac{z^3}{2a^3} - \frac{ez^3}{a^4} + \frac{5ez^5}{2a^6} \&c.$ Now to reduce the value of *y* into degrees, we know that an arc equal to radius, or unity, is equal to 57.29578 degrees = *r*; hence $1 : r :: \frac{z}{a} - \frac{z^3}{2a^3} + \frac{ez^3}{a^4}$

- &c. : the degrees of the arc $y = \frac{rz}{a} - \frac{rz^3}{2a^3} + \frac{rcz^3}{a^4}$ - &c. For the orbit of the earth, the first term will be sufficient, not differing from the truth the ten thousandth part of a degree. In other cases it may be necessary to take more terms.

Ex. Let the eccentricity of the earth's orbit be 0.01691, the mean distance being = 1, and the mean anomaly 30°; to find the true anomaly.

Log. of <i>g</i>	-	-	-	8.2281436
Log. sin. of <i>e</i> = 30°	-	-	-	9.6989700
Log. of <i>r</i>	-	-	-	1.7581226
<hr/>				
Log. of <i>rgz</i> , or <i>rz</i>	-	-	-	9.6852362
Log. of <i>a</i>	-	-	-	0.0063137
<hr/>				

Log. of $\frac{rz}{a}$ - - - 9.6789225 - - the

natural number corresponding to which, being a decimal, is 0°, 47744 = 28' 38" = *y*, which is true to a second; therefore AN = 29° 31' 22"; hence

Log. tan. 14° 45' 41"	-	9.4207653
$\frac{1}{2}$ Log. SQ = 98309	-	2.4962966
<hr/>		

$\frac{1}{2}$ Log. SA = 101691	-	11.9170617
	-	2.5031412
<hr/>		

Log. tan. 14° 32' 25" - - 9.4139205

Hence the true anomaly is 29° 4' 50"; consequently the equation of the centre is 55' 10". See Keill's Astronomical Lectures, Lecture xxii. Vince's Astronomy, vol. i. p. 104-112.

ANOMIA, in *Conchology*, the name of an extensive genus of bivalves, of which some of the fossil species were first described by Columna, as conchæ rariores anomix. The name *anomia* was retained by Woodward in his arrangement of fossil shells; after which three of the recent species were

figured and described by Gualteri, in his new genus terebratula; but Linnæus adopted the name Columna had given to the fossil kinds in preference to terebratula; and it has been in general adhered to by later conchologists, in describing the recent as well as fossil kinds of this family of shells.

The genus anomia is concisely defined by some authors as a shell inequivalve, one valve gibbous towards the beak, the other flat, and perforated near the hinge. The character in the *Sytema Nature*, is the shell inequivalve, one valve being flattish, and the other gibbous at the base, and one of them usually perforated near the base; the hinge has a linear prominent cicatrix, and a lateral tooth within on the margin of the flat valve, and there are two bony rays for the base of the animal. The animal, which had been very imperfectly known, is described by Gmelin, from which it appears to be of a new genus; the body is thin and slender, emarginated, and ciliated or fringed; the hairs affixed to the upper valve; and it has two arms, which are linear and longer than the body. Some conchologists separate the fossil kinds from those which are found in a recent state. Linnæus, and after him, Gmelin, arrange them together in the following order: craniolaris, pectinata, ephippium, cepa, electrica, squamula, patelliformis, scobinata, aurita, retusa, gryphus, pecten, striatula, truncata, reticularis, plicatella, crispa, lacunosa, pubescens, faretta, caput serpentis, terebratula, angulata, hylterita, biloba, placenta, sella, spinosa, aculeata, muricata, squama, punctata, undulata, capensis, detrun-cata, sanguinolenta, vitrea, cranium, dorsata, psittacea, tridentata, spondyloces, ventricosa, gryphoides, flexuosa, rugosa, cylindrica, nucleus, avenacea, & sandalium, which see respectively.

ANOMOEANS, ΑΝΟΜΟΕΙ, in *Church History*, a sect of Christians who denied any similitude between the essence of the Father and that of the Son. See TRINITY.

The word is composed of the privative α, and ομοιος, similar, resembling; q. d. different, dissimilar.

Anomæans was the name whereby the pure Arians were distinguished in the fourth century, because they not only denied the consubstantiality of the Word, but even asserted, that he was of a nature different from that of the Father; in contradistinction to the Semi-Arians, who indeed denied the consubstantiality of the Word, but who owned, at the same time, that he was like the Father. The Semi-Arians condemned the Anomæans in the council of Seleucia; and the Anomæans condemned the Semi-Arians in the council of Constantinople and Antioch, erasing the word ομοιος, like, out of the formula of Rimini and that of Constantinople.

ANOMORHOMBOIDA, in *Natural History*, the name of a genus of spars.

The word is derived from ανωμαλος, irregular; and ρημοειδης, a rhomboidal figure.

The bodies of this genus are pellucid crystalline spars of no determinate regular external form, but always breaking into regularly rhomboidal masses; easily fissile, and composed of plates running both horizontally and perpendicularly through the masses, but cleaving more readily and evenly in an horizontal than in a perpendicular direction; the plates being ever composed of irregular arrangements or rhomboidal concretions.

Of this genus there are five known species, which have all, in some degree, the double refraction of the island crystal.

ANONA, in *Botany*. See ACHRAS, ANNONA, CHRISOPHYLLUM, CRATÆVA, and SLOANEA.

ANONIS, see GLYCINE, HEDISARUM, ONONIS, and SOPHORA.

ANONIUM, in *Ancient Geography*, a town of the northern part of Italy, belonging to the Euganians, to the west of Venetia.

ANONUS *Fons*, a fountain of Laconia, according to Pausanias, situate near mount Taygeta.

ANONYMA, in *Conchology*, a species of *OSTREA*. The shell is rather oblong, with narrow scaly rays; the interstices broad, with perpendicular lines; and the ears with perpendicular wrinkles. Lift. Gmelin. It is variegated with angular streaks and spots.

ANONYMOS. See CHELONE.

ANONYMOUS, formed of the privative α , and $\omega\nu\mu\alpha$, name, something that is nameless, or to which no name is affixed.

The term is chiefly applied to books which do not express their author's name, and to authors whose names are unknown. Decker, advocate of the imperial chamber of Spire, and Placcius of Hamburg, have given treatises of anonymous books. Burc. Gotth. Struvius treats of the learned men who have endeavoured to investigate the authors of anonymous books.

ANONYMOUS, in *Anatomy*, a name sometimes given to parts newly discovered, or first taken notice of.

ANONYMOUS is also an appellation anciently given to the second cartilage of the throat, by later writers, called *cricoides*, or *annuliformis*.

ANONYMOUS, in *Commerce*. Partnerships in trade in France are styled anonymous, when they are not carried on under any particular name, but wherein each of the partners trades visibly on his own account, and in his own name; after which all the partners give one another an account of their profit or loss in trade. These sorts of partnerships are concealed, and known only to the parties themselves.

ANONYMOUS *partnerships in trade*, are also in France such wherein persons of fortune and quality deposit sums of money, in order to share the profits and loss. To this end those who furnish the capital have no trouble in carrying on the trade, nor do their names appear to be any way interested therein.

ANONYMOUS, in *Law*. The sending *anonymous* letters, or letters with a fictitious name, demanding money, &c. or threatening, without any demand, to kill any of the king's subjects, or to fire their houses, out-houses, barns, or ricks, is felony by the *BLACK Act*, 9 Geo. I. cap. 22. Amended by statute 27 Geo. II. cap. 15. This offence was formerly high treason by the statute 8 Hen. 5. c. 6.

ANOPOEA, in *Ancient Geography*, a mountain of Greece, being part of the chain of mountains, called Oeta. A small pass in this mountain formed a communication between Thessaly and the country of the Epicnemidian Locrians.

ANOPOLIS, an appellation given to the town of Arcaea in the isle of Crete. Steph. Byz.

ANOPSHEER, in *Geography*, a town of Hindostan, in the province of Oude, 50 miles east-south-east of Delhi. N. lat. 28° 20'. E. long. 78° 38'.

ANOREXY, ANOREXIA, in *Medicine*, loss of appetite, or loathing of food.

The word is compounded of the privative α , and $\alpha\pi\epsilon\sigma\omega$, *appeto*, I desire.

Anorexia is seldom an idiopathic disease, but a frequent attendant on many.

Causes.—It is present, in some degree, in all febrile complaints, and then usually attended by a furr on the upper surface of the tongue, which commonly indicates its intensity; for, as the furr disappears, the appetite returns. It occurs in jaundice; and accompanies a weakness in the organs subservient to digestion and chylication. Persons addicted to the abuse of spirituous liquors are seldom free from it. The sight of any shocking accident, distressing news, depressing passions, or the being present at any surgical opera-

tion, will often abolish the appetite of a person, even when longing for his dinner.

A symptom depending, on so many causes, must require considerable diversity in the

Treatment.—When it is symptomatic of other diseases, the cure cannot be effected without that of the original complaint. When it arises from the habit of drinking spirits, taking opium, tobacco, or any other poison, the custom must be relinquished, and the digestive organs invigorated by stomachics. See *DYSPEPSIA*.

ANOSMIA, denotes a diminution or abolition of the sense of smell. It is either organic, owing to a disease in the membrane lining the internal parts of the nostrils, and varying according to the nature of the disease; or atonic, without any evident disease of the membrane of the nose. See *SMELLING*.

ANOSSI, CARCAUSSI, or ANDROBEIZAHA, in *Geography*, a province of Madagascar, situate in S. lat. 23° 18'; and extending from the province of Manatenga to the river Mandrerei in 26°. This province is watered by several rivers, that run into the Franchere, Ramevate, or Immour, which rises in the mountain Manghage, and discharges itself into the sea, in S. lat. 25° 18', two small leagues from Port Dauphin. At its mouth is formed a lake, called Amboue, half a league wide, and of sufficient depth for any ship. Crocodiles breed in this river, and in every other in the island. The cape, which is half a league distant from the mouth of the Franchere, is called by the French St. Romain, and by the negroes, Cape Ramevate, or Hehoale. The coast beyond this cape forms a bay, in the middle of which the land runs out in a peninsula, to the north of which lies Fort Dauphin, and over against it Port Dauphin: this bay is called by the French Dauphin Bay; and it is convenient for shipping and boats, which may ride here very safely. This province includes several islands and peninsulas along the coast. The country is beautiful, and fertile in pastures for cattle, abounds in fruit-trees, and, if carefully cultivated, would afford every necessary of life. It is surrounded by high mountains, and diversified by numerous hillocks and fruitful plains. The most remarkable towns are Franchere, Imanhal, Cocombes, Andravoule, Ambonnetanha, Maromamou, Imours, Marufoutouts, and Fananghaa, besides several villages and hamlets throughout the country. The mountains are covered with wood and shrubs; but about four leagues distant from Fort Dauphin, the adjacent hills are quite destitute of trees. The inhabitants of the province are whites and negroes. The whites form three estates, or different degrees; and are distinguished by the names of Rohandrians, Anacandrians, and Ondzathi; the negroes are also subdivided into four classes, *viz.* Voadziri, Lohavohits, Ontsoa, and Ondeves. These people have neither religion nor temple; they keep up a custom of immolating beasts on particular occasions, in sickness, on planting yams or rice, on the circumcision of children, declarations of war, first entry into new-built houses, and on the funerals of their parents. They offer the first born-beast to the devil and to God, naming the devil first in this manner, "Dianbilis Aminan-habare, or lord-devil and God." The country seems to have been originally inhabited by negroes; and the whites took possession of it about 200 years ago; but they were subdued by the French. In 1642, Capt. Rivault obtained leave from Cardinal Richelieu to establish a colony here; and the French, who, after some opposition, settled here, built Fort Dauphin, which is advantageously situated, as it is sheltered from dangerous winds, and its entrance is convenient for all sorts of shipping. The natives, however, after some years of tranquillity and social intercourse, became jealous of the French, and formed a conspiracy to cut off all the French in

one day, which they carried into effect. The Fort Dauphin, which was erected in 1644, was accidentally destroyed by fire in 1656, but it was soon after repaired; and its garrison is thus enabled to carry on frequent wars with the natives. *Mod. Un. Hist.* vol. xi. p. 397, &c. See MADAGASCAR.

ANOTTA, in *Botany*. See BIXA.

ANOTTA Bay, in *Geography*, a bay on the north coast of the island of Jamaica. N. lat. 18° 19'. W. long. 76° 33'.

ANOUEC, the name of a range of mountains in the Birman empire, between Ava and Arracan.

ANOUT. See ANHOLT.

ANPITS, in the *Military Art*, in some *Middle Age Writers*, denotes a breast-work, answering to what is otherwise called *barbacan*.

ANREDERA, in *Botany*, a genus of the *pentandria digynia* class and order: the characters of which are, that the *calyx* is bipartite, with the lacinie carinated at the back; and it has one *seed* covered by a membranaceous, compressed, and two winged *calyx*. There is one species, viz. *andredera spicata*.

ANSA, or AISA, in *Geography*, a river which passes by Aquilea, in the country of Friuli; and runs into the Adriatic, between Grado and Marano.

ANSÆ, ANSES, in *Astronomy*, those apparently prominent parts of the planet Saturn's ring, discovered in its opening, and appearing like handles to the body of that planet. The Latin word literally signifies *handles*, or *ears*, of divers utensils.

ANSANI, GIOVANI, in *Biography*. See GIOVANI.

ANSARS, or ANSARIANS, in *Geography*, a people of Syria, employed in cultivation; and called in that country by the plural name *Ansaria*; in Delisle's maps, *Ensyrrians*; and in those of D'Anville, *Nassaris*. The territory which these people occupy, is that chain of mountains which extends from Antakia to the rivulet called *Nahr-el-Kabir*, or the great river. The history of their origin, though little known, is instructive. The following account is given in the words of a writer (*Affemani*, *Biblioth. Orient.*), who has drawn his materials from the best authorities. "In the year of the Greeks, 1202 (A. D. 891), there lived, at the village of Nafar, in the environs of Koufa, an old man, who, from his fastings, his continual prayers, and his poverty, passed for a faint: several of the common people declaring themselves his partisans, he selected from among them twelve disciples to propagate his doctrine. But the magistrate of the place, alarmed at his proceedings, seized the old man, and confined him in prison. In this reverse of fortune, his situation excited the pity of a girl who was slave to the gaoler, and she determined to give him his liberty. An opportunity soon offered to effect her design. One day, when the gaoler was gone to bed intoxicated, and in a profound sleep, she gently took the keys from under his pillow, and, after opening the door to the old man, returned them to their place unperceived by her master: the next day, when the gaoler went to visit his prisoner, he was extremely astonished at finding he had made his escape; and the more so, since he could perceive no marks of violence. He therefore judiciously concluded he had been delivered by an angel, and eagerly spread the report, to avoid the reprehension he merited; the old man, on the other hand, asserted the same thing to his disciples, and preached his doctrines with more earnestness than ever. He even wrote a book, in which, among other things, he says: 'I, such a one, of the village of Nafar, have seen Christ, who is the word of God, who is Ahmad, son of Mohammad, son of Hanafa, of the race of Ali; who also is Gabriel; and he said to me: Thou art he who readeth with understanding; thou art the man who speaketh truth; thou art the camel which preserveth the faithful from wrath;

thou art the beast which carrieth the burden; thou art the Holy Spirit, and John the son of Zachary; go, and preach to men that they make four genuflexions in praying; two before the rising of the sun, and two before his setting, turning their faces towards Jerusalem; and let them say three times, God Almighty, God most high, God most great; let them observe only the second and third festival; let them fast but two days annually; let them not wash the prepuce, nor drink beer, but as much wine as they think proper; and, lastly, let them abstain from the flesh of carnivorous animals.' This old man, passing into Syria, propagated his opinions among the lower orders of the country people, numbers of whom believed in him. And, after a few years, he went away, and nobody ever knew what became of him."

Such was the origin of the Ansarians, who are, for the most part, inhabitants of the mountains before mentioned. They are divided into several tribes or sects; such as the *Shamsia*, or adorers of the sun; the *Keibia*, or worshippers of the dog; and the *Kadmoufia*, who pay a particular homage to that part in woman which corresponds to the priapus; and who hold nocturnal assemblies, in which, it is said, after certain discourses, they extinguish the light, and indulge promiscuous lust. Many of the Ansarians believe in the metempsychosis; others reject the immortality of the soul; and, in general, such are the anarchy and ignorance that prevail among them, they adopt any opinions which they think proper, following the sect they like best, and frequently attaching themselves to none.

Their country is divided into three principal districts, farmed by the chiefs called *Mokaddamin*. Their tribute is paid to the pacha of Tripoli, from whom they annually receive their title. Their mountains are, in general, not so steep as Lebanon, and, consequently, are better adapted to cultivation; but they are also more exposed to the Turks; and hence it happens, that, with greater plenty of corn, tobacco, wines, and olives, they are more thinly inhabited than those of their neighbours the Maronites and the Druzes. Volney's *Travels in Egypt and Syria*, vol. ii. § 1. p. 1—8.

ANSARIUM, in the *Civil Law*, a duty imposed on all provisions carried in vessels with *anse*. This was otherwise called *ansurium*, and the collectors of it *ansuri*.

ANSATUM *Telum*, according to some, denotes a dart or javelin, with an *amentum* fastened to it.

Others rather take the *anse* of a javelin to be those two eminaences about the middle of the *cuspis*, or point, which hinders the weapon from piercing through the whole body. The Tartars are obliged to put their names to their arrows, that the hand which shoots them may be known. When Philip of Macedon was wounded at the siege of a certain town, these words were found on the javelin, "After has given this mortal wound to Philip."

ANSATUS, in *Conchology*, a species of MUREX. It is brown, transversely striated; spire sharp-pointed; whorls convex, distant, and knotty at the base; beak long. Gmelin. The length of this shell is about five inches and an half, and the striae are large and small alternately.

ANSAUVILLERS, in *Geography*, a town of France, in the department of the Oise, and chief place of a canton, in the district of Breteuil, five miles south-south-east of Breteuil.

ANSCHARIUS, in *Biography*, bishop of Hamburg and Bremen, was born in Sor, in France, at Corbia, in the diocese of Amiens. He was recommended by the emperor Louis as apostolic missionary to Harold king of Denmark, who had been lately converted to the Christian faith; and by his preaching he made many profelytes among the Danes. Under the authority of Olave, king of Sweden, he undertook the instruction of his subjects in the Christian religion,

religion, but with less success. By the council held at Aix-la-Chapelle, in 832, an episcopal see was instituted at Hamburgh, and Ansharius was its first bishop. When his church was burnt by the Normans, in 845, the see of Breinen was added to that of Hamburgh; and Ansharius removed to Bremen, where he resided till his death, in 865. He wrote the life of Willihad, the first bishop of Bremen; and his own life written by Mabillon, is reprinted by Fabricius, in his "Memoires pour l'Histoire de Hamburgh."

ANSCOTE, in our *Ancient Law Books*, the same with *ansbote*. See SCOT.

ANSE, in *Geography*, a town of France in the department of the Rhone and Loire, and chief place of a canton in the district of Villefranche; four leagues north of Lyons.

ANSEL *Weight*, See ANCEL *weight*.

ANSELM, in *Biography*, archbishop of Canterbury, was born at Aoulla in Piedmont, A. D. 1034, of noble and pious parents, who were at great pains to give him a good education. Having lost his mother Ermengarda when he was about seventeen years of age, he abandoned his studies, and indulged his youthful passions to such a degree, that his father refused to see him, or admit him into his house, on which he left his native country, and travelled into France. After some time, attracted by the fame of Lanfranc, he settled at the abbey of Bec, and prosecuted his studies with such ardour under that great master, that he soon excelled all his fellow students in learning. In the year 1060, he became a monk of the Benedictine order, and in three years after he succeeded Lanfranc, both as prior and teacher of the sciences; in both which stations he acquitted himself so much to the satisfaction of the society, that he was unanimously elected abbot on the first vacancy, A. D. 1078. The abbey of Bec had several estates in England, which obliged Anselm sometimes to visit this kingdom; and in these visits he gained the friendship of several of the greatest men. He happened to be here in the year 1093, when William II., in a fit of sickness, was prevailed upon to fill the see of Canterbury, which had been kept four years vacant, and nominated him to that high office. After a long and obstinate opposition to his own advancement, in which his sincerity has been suspected, he was forced into the chamber of the sick monarch, who, in a very pathetic manner, asked "Why he endeavoured to ruin him in the next world, which would infallibly follow, in case he died before the archbishopric was filled?" The abbot still persisted in his refusal, kneeling, weeping, and entreating the prince to change his purpose. The pastoral staff was at length forced into his hand, and he suffered himself to be invested with his office; not, however, before he had obtained a promise of the restitution of all the lands which were in the see in the time of Lanfranc. The temporalities of the archbishop being secured, Anselm submitted to do homage to the king, and was consecrated on the fourth of December 1093. Soon after his consecration, the king intending to wrest the duchy of Normandy from his brother Robert, and endeavouring to raise what money he could for the purpose, Anselm offered him a voluntary gift of five hundred pounds, which the king thought too small, and refused to accept. "I entreat your highness," said Anselm, "to accept the present; it will be more honourable in you to receive a less sum with my consent than to extort a greater by force. If your highness allow me the freedom and privilege of my station, my person and fortune shall be at your service; but if I am treated like a slave, I shall be obliged to stand aloof, and keep my fortune to myself." The offer was, however, for the present, rejected; and when it was afterwards hinted to Anselm, that a repetition of it might conciliate the royal favour, he answered, "God forbid that I should suppose my

sovereign's favour may be purchased with a small sum of money, like a horse at a fair! Persuade the king not to set a price on his favour, but to treat me, on honourable terms, as his spiritual father, and I am ready to pay him the duty of a subject. As for the five hundred pounds, which he was pleased to refuse, they are given to the poor." The king, upon being informed of what had passed, was much displeas'd, and declared he would never acknowledge Anselm for his ghostly father; he wanted neither his prayers nor his benedictions, and he might go whither he pleased. At another time, when William required from the archbishop his quota of men for an expedition against Wales, he sent them out so wretchedly equipped, that he threatened him with a prosecution. Anselm, on his part, considered the demand as oppressive, treated the king's complaint with silent contempt, and demanded the restitution of all the revenues of his see, and made his appeal to Rome. In opposition to the king's express prohibition, but not without repairing to the court of Rome to attempt his justification, he left England, and the king instantly confiscated the temporalities of the archbishopric.

At Rome, Anselm was received with great respect, as a defender of the rights of the holy see, and a meritorious sufferer in the cause of religion. He accompanied the Pope to his country seat near Capua, and received from him numerous proofs of friendship: but upon their return to Rome the pope's friendship for Anselm was put to a severe trial. In consequence of a letter sent from Urban II. to William, soon after Anselm's arrival at Rome, demanding his reinstatement in all the emoluments and privileges of his see, an ambassador arrived from England to vindicate the conduct of the king. The ambassador was at first received with haughtiness, and was commanded by the pope to return and inform his master, that unless he would hazard the highest censure of the church, he must instantly reinstate Anselm in the archiepiscopal rights. Notwithstanding this, after some struggle between duty and interest, the pope accepted a large present, and abandoned the cause of his friend. Finding himself deserted by the court of Rome, Anselm left the city in disgust, and went to Lyons, where he remained till the death of William Rufus.

Henry I. who, on his accession to the throne, employed every expedient to support the authority which he had usurped; and being well acquainted with the interest which Anselm's piety and zeal had obtained in the affections of the people, immediately after his coronation recalled their favourite from exile, who landed at Dover, Sept. 23, 1100. A few days after, he was received at Salisbury by the king with every possible mark of respect and affection. But this cordiality was not of long continuance. As soon as Anselm was commanded to do homage to the king for the temporalities of his see, he returned a flat refusal, and produced the canon of the late council of Rome in vindication of his conduct; declaring, that if the king insisted upon his pretensions to the homage of the clergy, he could keep no communion with him, but must instantly leave the kingdom. The king, unwilling to resign the right of bestowing ecclesiastical benefices, and of receiving the homage of his prelates, but at the same time, dreading the departure of the primate, proposed, or rather solicited a truce, till both the parties could send ambassadors to the pope, to know his final determination: to this Anselm, at the earnest entreaty of the nobility, at last agreed.

During this interval, Anselm performed many services for the king. In a synod which was summoned at Lambeth, he obtained a decision in favour of the king's intended marriage with Matilda, although she had already worn the veil, without taking the vows. When the kingdom was invaded

by Robert duke of Normandy, in July 1101, Anselm contributed more than any man, by his example, his exhortations, and his authority, to keep the nobility steady in their attachment to King Henry, and thereby preserved him on the throne. In return, the king professed great reverence for the wisdom and sanctity of Anselm, and promised to pay a strict regard to the rights and privileges of the church. But when the dinner was over, and the messenger from pope Paschal II. returned with a peremptory negative upon lay-investiture, the contest between the king and the archbishop was renewed. Henry resolved not to relinquish the important prerogative of granting church preferment within his own dominions, yet desirous to avoid a rupture with the pope and Anselm, sent three bishops to Rome, while the archbishop, on his part, dispatched two messengers to submit the affair to the consideration of the pontiff. The pope's letter confirmed his former resolution, declaring, that the church, and all its revenues, belonged to the successors of St. Peter; and that emperors and kings had no right to give the investiture of benefices to the clergy, or to exact homage from them. Some of the arguments adduced in defence of this position were either blasphemy or nonsense: "How abominable is it," said he, "for a son to beget his father, and a man to create his God? and are not priests your fathers and your gods?" But this formal declaration was contradicted by the oral testimony of the king's bishops; who asserted, that Paschal had privately expressed to them his acquiescence in their master's claim, but had not given it under his hand, lest other princes should insist upon the same privilege. Anselm and his messengers regarded this story as a designed pervarication, prompted by the king; but the first time the primate appeared at court, he required him in a peremptory tone to do him homage according to ancient custom, or leave the kingdom; adding, "I will suffer no subject to live in my dominions who refuses to do me homage." The archbishop boldly replied, "I am prohibited by the canons of the council of Rome to do what you require. I will not leave the kingdom, but stay in my province, and perform my duty; and let me see who dares to do me any injury." Immediately he left the court, and returned to Canterbury. Soon after, the king granted him permission to make a journey to Rome, in order to learn the pope's final pleasure. He was attended to the sea-coast by crowds of people of all ranks, whom his austere piety and zeal for the church had attached to his interest. From Rome the archbishop retired to Lyons, and afterwards to his monastery at Bec in Normandy. The king, still desirous of an accommodation, sent a message to invite Anselm into England; and upon receiving information that he was ill at the abbey of Bec, went in person into Normandy to settle every remaining point of difference between them. Anselm recovered from his indisposition, and embarked for England, where he was received with singular expressions of a joyful welcome. The queen herself even travelled before him on the road, and gave orders for his accommodation. The popularity of this prelate may be imputed principally to the severity of his manners, and to the zeal with which he opposed abuses, and encouraged superstitious austerities among the clergy and laity. He rigorously enforced clerical celibacy; and was the first who prescribed this absurd, unnatural, and mischievous practice in England. By one canon of a national synod, held by him during his disputes with the monarch, at Westminster, in 1102, it was determined that no priest should marry; and those who were already married, were commanded to put away their wives. By another canon, it was decreed that the sons of priests should not be heirs to their father's churches. By a third, marriage is prohibited to those who are within the seventh degree of

kindred; and the twenty-sixth canon forbade the worship of fountains, which was probably a relic of druidical superstition. Anselm was ever a violent opposer of all innovation, even in articles of dress and ornament; and preached zealously against the long and curled hair then coming into fashion; and his authority and eloquence had such influence, that the young men universally abandoned that ornament, and appeared in cropt hair, which was recommended to them by the sermons of the primate. One of his adherents writing to him about this time, concluded his letter by saying, that religion was ruined by his absence; that seducery and wearing long hair, which he seems to have regarded as equal crimes, were become very common, and nobody had the courage to reprove them.

In a council held at Whitfuntide, A. D. 1108, at which the king and principal clergy, with Anselm at their head, were present, it was resolved to enforce the canons made six years before, relative to the celibacy of the clergy. Ten others were also added, by which all priests were commanded to put away their wives instantly; not to suffer them to live on any of the lands belonging to the church; never to see them except in cases of great necessity, and in the presence of two or three witnesses. Those who put away their wives were ordered to abstain from meat for forty days, and to perform certain penances; but those who refused to put away their wives were to be excommunicated, and their goods, together with the persons and goods of their wives, were to be forfeited to the bishop of the diocese. These ecclesiastical and wicked decrees afford sufficient proof, that it was then found no easy task to dissolve the natural and virtuous affection that subsisted between the clergy of England and their wives.

One of the last disputes in which Anselm was engaged, was with Thomas elect of York, who, hoping for the death of the primate, delayed to come to Canterbury to receive consecration; but he was at length obliged to submit, make the usual professions of obedience, and render to his superior the accustomed homage. This, in fact, is the only material occurrence mentioned during the three last years of Anselm's life. This celebrated prelate died at Canterbury on the 20th of April 1109, in the 67th year of his age, and the 16th of his primacy.

The superstitious reverence which was paid to the memory of Anselm, and the characteristic credulity of the age, are shewn in the account of his miracles recorded by John of Salisbury. He relates, that while he was living, a Flemish nobleman was cured of a leprosy by drinking the water in which Anselm had washed his hands in celebrating mass: that he extinguished fires, calmed tempests, and healed diseases, by making the sign of the cross: that two soldiers were cured of an ague by tasting crumbs fallen from the bread which he had been eating: that by prayer to God, he produced a spring of excellent water at the top of a hill for the relief of certain villagers: and that a ship in which he sailed, having a large hole in one of her planks, nevertheless took in no water as long as the holy man was on board. The same author adds, that miracles were wrought at Anselm's tomb after his death: that one born deaf, dumb, and blind, obtained his hearing, speech, and sight, by paying his devotions at his tomb: that a soldier was cured of the dropy by winding the saint's girdle about his body; and that the same girdle was successfully applied to the assistance of women in child-birth.

Without examining the powers of Anselm as a saint, his merit as a man may be fairly estimated, if, with great allowance for the narrow prejudices of a monastic education, and for principles and habits generated by a debasing system of superstition, we give him credit for honest zeal, and manly resolution,

resolution, in support of what he conceived to be the cause of religion. Considering the period in which he lived, Anselm was a learned man. He contributed to the introduction of the scholastic method of writing, in which the subtleties of logic were applied to theology. Among his metaphysical works is a treatise on the existence of God, in the manner afterwards resumed by Des Cartes.

The largest edition of his works, which are very numerous, is that published by Father Gerberon, at Paris, in 1675. It is divided into three parts. The first contains dogmatical tracts, entitled, "Monologia." The second contains practical and devotional pieces. The third is composed of his letters. See Biog. Brit. Gen. Dict. Hume's and Henry's Hist. of Great Britain.

ANSELM'S art. See ART.

ANSELM of Paris, an Augustine monk, was born in 1025, and devoted almost his whole life to genealogical and biographical researches. His "Palace of Honour, or Historical Genealogies of the illustrious House of France, and of several noble families of Europe," was published in French at Paris, in 1647, in two vols. 4to. His "Genealogical and Chronological History of the House of France, and of the great Officers of the Crown," was first published at Paris, in 4to. in 1694; but the author, dying this year, did not complete his design. Fourni enlarged this work, and republished it in two volumes folio, in 1711; and it has since been continued by the Augustine fathers, Auge and Simplicien; and in 1726, &c. it was published in nine volumes folio. Biographers have been much indebted to this collection. Nouv. Dict. Hist.

ANSELMUS, *De Janua*, flourished in the thirteenth century. Aitric supposes he was of the faculty of medicine at Montpellier: that he was in repute in his time, is proved by the notice taken of him by Lanfranc, and afterwards by Gui de Chauliac, who recommended his practice in certain cases; but there are no works now remaining bearing his name.

ANSER, in *Astronomy*, a small star, of the fifth or sixth magnitude, in the Milky Way, between the Swan and Eagle: first brought into order by Hevelius.

ANSER *Americanus*. See TOUCAN.

ANSER, in *Natural History*, a species of VIBRIO in the *vermes infusoria*. It is elliptical, with a long neck and tubercle on the back. Gmelin. This kind is found in water where duck-weeds grow: it is between the vibrio proteus and vibrio falx, and is chiefly distinguished by the protuberance on the back. The body is elliptical, round, without any lateral inequality, and full of molecules; the hind part is sharp and bright, the forepart produced into a bending neck, which is longer than the body; the apex even and whole, blue canals passing between the marginal edges, and occupying the whole length of the neck: in one of those canals a vehement descent of water to the beginning of the trunk may be perceived. The motion of the body is slow, that of the neck is more lively and flexuous, and sometimes spiral. See Adams, Microf.

ANSER, in *Ornithology*, a species of ANAS, or duck, called in England the grey-lag, or wild goose, and generally admitted as the origin of the domestic goose. The character of this species is, bill semi-cylindrical; body above cinereous, beneath paler; neck streaked. Linnæus, Gmelin, &c. The length of the bird is usually about two feet nine inches, breadth five feet, weight ten pounds. The bill is large and elevated, yellowish flesh colour, with the nail white. The head and neck are cinereous, mixed with dirty yellow; neck striated downwards; back and primaries dusky, the last tipped with black; shafts white; secondaries black, edged with white; lesser coverts dusky, edged with white;

breast and belly whitish, clouded with ash colour; rump and vent white; middle feathers of the tail dusky, tipped and edged with white; the outmost almost entirely white; legs flesh-coloured; claws black. Penn. Arct. Zool. Lath. Gen. Syn. &c.

"This species," says Dr. Latham, "inhabits the fens of England; and it is believed, does not migrate, as in many countries on the continent, as they are not only met with in the summer, but also known to breed in Lincolnshire, Cambridgeshire, and other places: they have seven or eight young, which are often taken, and easily become tame. They however, unite into flocks during the winter season, as numbers are met with together. On the continent they are migratory, changing place in large flocks, often five hundred or more: in this case the flock is triangular in shape, with one point foremost; and as the goose which is first is tired soonest, it has been seen to drop behind, and another to take its place. In very small flocks, however, they are sometimes seen to follow one another in a direct line. Geese seem to be general inhabitants of the globe: they are met with in Iceland; and on the continent, from Lapland to the Cape of Good Hope; they are frequent in Arabia, Persia, and China, as well as indigenous to Japan; and on the American continent from Hudson's bay to South Carolina. Our voyagers meet with them in the Straits of Magellan, Port Egmont in Falkland Isles, and Terra del Fuego; also in New Holland, though not at New Zealand, as we find capt. Cook making the inhabitants a present of a pair in order to breed." Gen. Syn.

The same author remarks, that the grey-lag goose, in a state of domestication, varies in colour from the wild ones, though much less so than either the mallard or cock, being ever found mere or less verging to grey; though in all cases the whiteness of the vent and upper tail coverts is visible, and very often those parts are quite white, especially in the males. See GOOSE, *domestic*.

ANSERES, in *Ornithology*, the third order in the Linnean arrangement of birds. The character, according to that author, is, the bill smooth, covered with skin, and broadest towards the tip: feet formed for swimming, toes palmated, and connected by a membrane; shanks compressed and short. The body is fat, and flesh rather rancid. These live chiefly on the water, and feed on plants, fish, frogs, worms, &c. The nest is generally formed on the ground; the mother takes little care of the young; and they are frequently polygamous.

The birds of this order are divided into two sections, one having the beak denticulated, or toothed, and the other being destitute of these teeth: the genera of the first section are anas, mergus, phaeton, and plotus; and those of the second section, rhyncops, diomedea, aptenodya, alca, procellaria, pelicanus, larus, sterca, and colymbus.

ANSERIFERA, in *Conchology*, a species of LEPAS. The shell is compressed, and has five valves, which are striated, and seated on a pedicle. Gmelin. This kind inhabits the American and Atlantic seas.

ANSERINA, in *Botany*. See POTENTILLA.

ANSERIS, in *Entomology*, a species of PEDICULUS found on both the wild and tame goose; it is filiform, pale, with black dots on the margin. Linnæus, Fabricius, Redi, &c.

ANSERIS, in *Natural History*, is also a species of FASCIOLA in the *Vermes intestina*. The body is oblong-oval; beneath, two rows of opposite papillæ, with approximate pores. Froelich, Gmelin, &c. Found in the rectum of the common goose.

ANSERIS is also the specific name of a creature in the TÆNIA genus, that infests the intestines of the domestic goose. It is minute and very narrow, the anterior part capillary. Goetz and Gmelin.

ANSES. See ANSER.

ANSIANCE, in *Geography*, a people of the island of Madagascar, towards the isle of St. Mary.

ANSIBARII, or ANSIVARII, in *Ancient Geography*, the name of a people of Germany, mentioned by Tacitus. According to this historian, they were driven, in the time of Nero, from their own territory by the Chauci, and then took possession of certain lands, previously occupied by the Frisians, which had belonged to the Romans, and used as pasture for their horses and cattle. In this acquisition, they were conducted by Boioacalus, a person of distinguished reputation, and of a proved fidelity to the Romans. When the Romans demurred in allowing them to possess these lands, Boioacalus pleaded the merit of 50 years service; and he remonstrated, that the territory was large, and applied to no useful purpose; that an unhappy people, driven from their own habitations, might be accommodated without encroaching on wide tracts, in which the Roman horses and cattle might range; that humanity forbade their suffering men to perish, whilst beasts were amply provided for; that it was incompatible with religion to devote to deserts and solitude parts of the earth which were designed by the gods for the use of men; and that such parts as had no possessor were free and common to all. Then lifting up his eyes to the sun and other celestial luminaries, he asked them, how they could bear to behold a desolate soil, and if they would not, in justice, command the sea to swallow up usurpers, who thus engrossed the earth? To this spirited remonstrance, Avitus, the Roman commander, indignantly replied, that the weakest must submit to the most powerful; and that as the gods had entrusted the Romans with sovereign judgment, they could not permit any other judges to interfere. At the same time, lands were privately offered to Boioacalus, in recompence of his long attachment to the Romans. This offer the brave general considered as the price of his honour, and as a bribe for betraying his people, and he rejected it with disdain and indignation, alleging, "We may want a place to live in, but a place to die in we cannot want." Upon this the Ansibarii invited the neighbouring nations into a confederacy against the Romans, but they were awed by the Roman generals and their forces; so that at length these unhappy people, applying in vain for settlements in neighbouring territories, were under a necessity of making long and various peregrinations, which terminated in their utter destruction. Tacit. *Annal.* lib. xiii. c. 53—57. These people have been known under the other denominations of *Amsivarii*, *Ampsvarii*, and *Ampscarii*. Some have thought that their name is derived from *Anser*, the *Ems*, and *baner*, a German word, which signifies *to inhabit*.

ANSIKO, or ANZIKO, called also MAKOKO, in *Geography*, a kingdom of Africa, is bounded on the west by the river Umbre, which runs into the Zaire, the kingdom of Wangua and the Amboes, who border on Loango; on the north by some deserts of Nubia; and on the south by the provinces of Congo, called Songo and Soada. This country has several mines of copper; it produces a great quantity of sanders wood, both red and grey; and it abounds with rhinoceroses, lions, and other wild beasts. The inhabitants have neither fixed lands nor inheritance; they neither sow nor reap, but live like the wandering Arabs, and subsist by plunder and slaughter. They are said to be the remains of the Gages, who came originally from Sierra Leona, but being weakened by their marches and battles, they were unable to return, and reduced to the necessity of residing, principally, in the kingdom of Anliko, and also on the south-east of Angola. In their undertakings and exploits, they are valiant and intrepid, and altogether regardless of life. Their language is barbarous, and difficult

to be acquired, even by the inhabitants of Congo. Their food is said to be human flesh, and human bodies are hung up for sale in their shambles. Conceiving that they have an absolute right to dispose of their slaves at pleasure, their prisoners of war are fattened, killed, and either eaten, or sold to butchers. It is also said, that discontented slaves offer themselves for food to their masters; and that persons of the nearest relation feed upon each other without the least horror. They have no graves for the dead, who are devoured as soon as they have expired. Persons of the principal distinction wear red and black caps of Portuguese velvet, and those of inferior condition, of both sexes, go barefooted, and are naked from the waist upwards. In order to preserve their health, they anoint their bodies with a composition of pounded white sandal-wood and palm oil. The king of Anliko, or the great Macoe, is esteemed the most powerful monarch of Africa, and his dominion extends over 13 kingdoms. The zimbis, or shell silver found at Loango and Angola, is the current coin of the country, and exchanged by the natives for slaves from Nubia, and also for salt, silk, glass, linens, and other merchandises. The arms of these people are battle-axes, and small but very strong bows, adorned and strengthened with serpents skins, and furnished with strings made of supple and slender shoots of trees, like reeds, which never break, and short arrows of hard and light wood. In the use of their bows and arrows, they are so dextrous, that they kill birds flying, and discharge as many as 28 arrows from the bow before the first falls to the ground. Besides their bows and battle-axes, they have also daggers in serpent-skin scabbards, which they carry in ivory belts. With respect to religion, they are idolaters; worshipping the sun as their chief deity, whom they represent under the form of a man, and the moon under that of a woman; and an infinite number of inferior deities, each man having a peculiar idol to whom he offers sacrifices, and whom he constantly invokes in dangerous enterprises. They practise circumcision, but from what motives, whether religious or otherwise, it is not known. These barbarous people are much extolled for their singular fidelity and loyalty, so that they will sacrifice their lives in defence of their princes, or of their friends and allies. *Mod. Un. Hist.* vol. xiii. p. 266, &c.

ANSLO, or OPSLO, a sea-port town of Norway, in the prefecture of Aggerthuys, upon the bay of Anflo. See CHRISTIANIA.

ANSON, GEORGE, LORD, in *Biography*, an eminent English naval commander, was the third son of William Anson, Esq. of Shuckborough in Staffordshire. He was born in 1697. The navy being Mr. Anson's choice, he went early to sea; and in the year 1716, having passed regularly through the inferior stations, he was made second lieutenant of his majesty's ship the *Hampshire*; and in 1724, he was raised to the rank of post-captain, and to the command of the Scarborough man of war. Between this time and 1733, he went, with ships under his command, three times to South Carolina, where he acquired considerable property, and erected a town bearing his name, the country around which has been ever since called Anson County. Between 1738 and 1739, he made a fourth voyage to the coast of Guinea and to America, in the course of which, by his prudence, he engaged the French to desist from interrupting the English Guinea trade, without coming to acts of hostility.

On the breaking out of the Spanish war in 1739, Mr. Anson was pitched upon as a proper person to command a fleet destined to attack the Spanish settlements in the Pacific Ocean. He set sail in September 1740, with a squadron of five men of war, a sloop, and two victualling ships. The whole business of fitting out this expedition had been managed

waged with extreme negligence and incapacity, which rendered the exertion of all the commander's talents necessary. After a long and tedious voyage, he arrived at Madeira, thence he proceeded to St. Catherine's on the coast of Brazil, and afterwards to St. Julian in Patagonia. In doubling Cape Horn, he experienced prodigious difficulties from storms and tempestuous weather: some of his fleet were separated from him, of which only a small part ever rejoined him. At length he arrived at the island of Juan Fernandes, where he refitted, assisted with his own hands in landing the sick sailors, and for the benefit of future navigators, sowed the seeds of a variety of garden vegetables and fruit-trees. Thence he proceeded to the coast of Peru, and took the rich town of Païta; which, on the refusal of the Spaniards to ransom it, he was obliged, according to the practice of war, to reduce to ashes. When the English were about to embark, one of their company was missing, who, however, soon arrived, and acknowledged, that by taking too copious a dose of brandy, he had fallen into a profound sleep, from which he was awakened by the scorching heat of the town on fire. Upon opening his eyes, he was amazed to behold on the one hand all the houses in a blaze, and on the other, the Spaniards and Indians near him. The greatness and suddenness of the terror instantly brought him back to a state of sobriety, and gave him presence of mind to push through the thickest of the smoke, and thus escape the hands of the enemy. This was the only instance of neglect of duty through the effects of liquor, which might have been obtained in almost every warehouse in the town. On this coast, Commodore Anson took some valuable prizes, on board of which were several passengers of distinction of both sexes; his treatment of whom was to honourable, and consistent with the most delicate decorum, that it left the most favourable impressions of himself and his country. He afterwards sailed to the coast of Mexico; thence with a view of intercepting the annual Acapulco ship, he took his departure across the Pacific Ocean, with his own vessel the Centurion, and the Gloucester. In this passage the Gloucester became leaky, and was abandoned; and the united crews, reduced by sickness, with difficulty reached Tinian, one of the Ladrones. Here while the commodore and the greater part of his crew were on shore, the Centurion was by a strong gale driven out to sea; and so little prospect was there of her being able to reach the island again, that much labour was spent in fitting up a small vessel found on the island, Anson himself taking the axe like a common sailor. The only occasion in which marks of emotion broke through the uniform equanimity of his demeanor, was when he received news of the Centurion's coming again in sight. From Tinian he went to Macao; and in returning from Macao, he took a rich Manilla galleon: but at the moment of victory he had a call for the exertion of all his courage and presence of mind, in consequence of a fire which broke out near the Centurion's powder-room, but which his orders, given with all the calmness of one conversant with danger in every shape, soon got under. He sailed back to Canton with his prize; and there exhibited equal dexterity and firmness in transacting affairs with the Chinese, and maintaining the rights of his own country. Returning from thence by the Cape of Good Hope, he arrived at Spichead on the 15th of June 1744, having completed the circumnavigation of the globe, and brought back great riches taken from the enemy, though unforeseen disasters had defeated some of the principal purposes of the enterprise. Thus was the expedition finished, after having by its event strongly evinced this important truth, that though prudence, intrepidity, and perseverance united, are not exempted from the blows of adverse fortune, yet in a long series of transactions, they

usually rise superior to its power, and in the end rarely fail of proving successful.

In a few days after his return, Mr. Anson was made rear-admiral of the blue; and in a short time after a commissioner of the admiralty, and rear admiral of the white; and in the year 1746, vice admiral. During the winter of 1746 and 7, he was appointed to the command of the channel fleet; and in the following May he captured, off Cape Finisterre, six men of war bound from France to the West and East Indies, laden with warlike stores and merchandise, and four East-Indiamen.

By this successful enterprise, he defeated the pernicious designs of two hostile expeditions, made a considerable addition to the force and wealth of our own kingdom, and thus converted into a public benefit, the intended means of a public calamity. M. St. George, one of the French captains, in allusion to the names of two ships (L'Invincible and La Gloire) which had been taken, said, when he presented his sword to the conqueror; "*Monsieur, vous avez vaincu L'INVINCIBLE, et LA GLOIRE vous suit.*"

For this and other important services, he was with great propriety, in the June following, raised to the English peerage by the title of Lord Anson, baron of Soberton in the county of Southampton. And on the occasion, his lordship made choice of a motto very happily adapted to the dangers he had gone through, and the successes he had obtained, NIL DESPERANDUM. On the 25th of April 1748, he married the eldest daughter of Lord Hardwicke, at that time lord high chancellor of Great Britain: this lady died without issue on the first of June 1760.

Lord Anson had frequently the honour of convoying the late king from England to Holland. The first time was in the year 1748; and ever after he constantly attended his majesty on his going abroad, and on his return to this kingdom. In July 1749, his Lordship was made vice admiral of Great Britain; in 1751, he was preferred to be first commissioner of the Admiralty in the room of Lord Sandwich; and in the years 1752 and 1755, he was one of the lords justices of the kingdom during his majesty's absence. Under him, on the prospect of a war with France, the squadrons were fitted out with great promptitude; and that more success did not attend them was owing to accidents. He was exposed to some censure in consequence of the loss of Minorea at the beginning of the war 1755; and in the following year he resigned his post. On a parliamentary inquiry, however, he, and the persons with whom he had acted, were acquitted of all blame respecting Minorea. In the year 1757, he was again placed at the head of the admiralty board, where he continued during the remainder of his life, which included almost all the glorious periods of that war.

The last time he commanded a fleet was in 1758, when he covered the expedition against the coast of France, and kept the enemy's fleet in port. In 1761, he was raised to the principal naval dignity, that of admiral and commander in chief of the fleet, for the purpose of bringing over the present queen of England, whom, after a rough and tedious passage, he landed on the 7th of September. In February 1762, he accompanied the queen's brother to Portsmouth to shew him the arsenal, and the fleet that was then on the point of sailing, under Sir George Pocock, for the Havannah. Lord Anson, in attending the prince, caught a violent cold, under which he languished for three months. At length it settled on his lungs, and was the immediate occasion of his death. Full of honours and reputation, he died at Moor Park, Hertfordshire, on the 6th of June 1762, leaving his whole property to his brother, Thomas Anson, Esq. of Staffordshire.

Lord Anson was one of his majesty's most honourable

privy council, an elder brother of the Trinity House, and a governor of the Charter House. He was remarkably assiduous at the Admiralty Board, and very ready in making naval dispositions of every kind, and in appropriating the proper strength and proper sort of ships to the different services. Among the various and distinguished merits of this eminent person, was that of having bred up several excellent officers, who were afterwards renowned for signal services achieved for their country. He may, in general, be said to have been a true friend and liberal patron to men of real merit and capacity in his profession. Till later voyages had multiplied the circumstances of the globe, "to have been round the world with commodore Anson," was esteemed a great and honourable distinction to a seaman. *Biog. Britan. Gen. Biog. Dict. Walter's Account of Anson's Voyage.*

ANSON, in *Geography*, an interior county of North Carolina in Fayette district, having Mecklenburgh county to the north, and Bladen and Cumberland counties on the east. It contains 513 inhabitants, including 828 slaves.

ANSON'S ISLE, the *Banka* of Bougainville, an island of the Pacific Ocean, being one of the groupe called *SOLOMON ISLES*. S. lat. 5° 15'. E. long. 153° 30'.

ANSPACH, or *OXOLBACH*, a marquisate or principality of Germany, in the circle of Franconia, bounded by the principality of Bayreuth, and the bishopric of Bamberg and Wurtzburg. The country is mountainous and sandy, but in general it is fertile, and produces considerable quantities of corn and tobacco, and along the Mayn good wine. It has good pastures, and the breed of cattle is excellent. The chief mines are those of iron, those of other kinds being neglected. It has several medicinal springs. Anspach, together with Bayreuth, maintains a population of 320,000 on 2,320 square miles. The principal rivers are the Retzat, Under or Rednitz, the Altmuhl, the Jagst, the Wormitz, the Tauber, and the Mayn. It has 16 boroughs, and 17 market towns, the principal of which are Anspach, Swabach, Kornburg, Cadolzburg, Roth, Gunzenhausen, Wassertrudingen, Windt bach, Feuchtwang, Creiltheim, Colmberg, and Uffenheim. The reigning margrave of this principality has a seat and a voice in the council of the princes of the empire, and is also co-suzerain prince of the circle of Franconia.

ANSPACH, a city of Germany, the capital of the above-mentioned marquisate, situate on the river Retzat, about 13 miles south-west of Nuremberg. This city was rebuilt and enlarged in 1710; it has a public library established in 1738, and a good cabinet of medals and curiosities. N. lat. 49° 14'. E. long. 10° 42'.

ANSPESSADES, or *LANSPESSADES*, in the *French Military*, a kind of inferior officers in the foot, below the corporals, and yet above the common sentinels.

The word is formed of the Italian *lancia spezzata*, q. d. *broken lance*; which was occasioned hence, that they were originally disbanded *gendarmes*, who, for want of other subsistence, sued for a place of some distinction in the infantry. There are usually four or five in each company.

ANSTRUTHER, in *Geography*, a sea port town of Scotland, and a royal borough, situate in the eastern part of the county of Fife, towards the German sea. It is divided into two towns, *East* and *West* (which are royal boroughs) by a small river: the harbour is capable of receiving only small vessels, employed principally in the fishery of the place. N. lat. 56° 12'. West. long. 2° 16'.

ANSWER, in *Law*. See *REJOINDER*.

ANT, in *Entomology*, the common English name of the *formica* of Linnaeus, and synonymous with emmet. That destructive creature termed *fatalis* is also called an ant. See *FORMICA*, and *TERMES*.

This is an insect extremely injurious to pasture lands and

gardens; in the former, by throwing up hills, and, in the latter, by feeding on the fruit, &c. The best methods of keeping them from trees, are those of having the earth round them constantly dug up; and the application of saw-dust, coal-ashes, or other matters of the same kind, about their roots. The same purpose may also be effected by covering the bottom part of the trees with tar; but as this substance is prejudicial to trees, night-soil may perhaps answer better, as it is found to destroy them when spread upon, or put into the little hills which they throw up. A liquor, prepared by boiling rain water with black soap and sulphur, has lately been made use of by M. Tatin, for destroying these animals, it is said, with considerable success. Where this liquor is employed, care should, however, be taken that the ground where they inhabit be perfectly saturated with it.

ANT-BEAR, or ANT-EATER, in *Zoology*. See *MYRMECOPHAGA*.

ANT-EGG is a name popularly given to a kind of little white baills found in the banks or nests of ants, ordinarily supposed to be the ova of this insect. These are not properly the eggs of ants, but the young brood in their incipient state; when they appear like vermicles or little worms, wrapped up in a film or skin, composed of a sort of silk, which they spin out of themselves in the manner of filk-worms and caterpillars. At first they appear motionless, and after a few days, they manifest some symptoms of flexion and extension; then they seem yellowish and hairy, and in the form of small maggots which they assume, they continue to grow till they are almost as large as ants. After having passed their metamorphosis, and when they appear in their proper shape, they exhibit a black speck near the anus, which Mr. Leewenheek and also Mr. Gould imagine to be their faeces or digested food.

Sir Ed. King opened several of these vulgarly reputed eggs, in some of which he found only a maggot in the circumstances as above described; while in another, the maggot had begun to put on the shape of an ant about the head, having two little yellow specks, where the eyes were to be. And in others, a farther progress was observed, the included maggot being furnished with every thing to complete the shape of ant, but wholly transparent, the eyes only excepted, which were as black as bugles. Lastly, in others, he took out every way perfect and complete ants, which immediately crept about among the rest.

The true ants eggs are the white substance which, upon opening their banks, appears to the eye like the scatterings of fine white sugar, or salt, but very soft, and tender. Examined by a microscope, it is found to consist of several pure white appearances in distinct membranes, all figured like the lesser sort of birds eggs, and as clear as a fish's bladder. The same substance is found in the bodies of the ants themselves. This spawn, when emitted, they lie in multitudes on, to brood; till in some time it is turned into little vermicles, as small as mites, commonly called ant-eggs. See *FORMICA*.

ANT-HILLS are little hillocks of earth, which the ants throw up for their habitation and the breeding of their young.

These hills are very detrimental to the farmer, depriving him of as much land as the hills cover, which may, in many cases, be computed at a tenth part or more of his grafs lands; and in some places, where negligence has suffered them to multiply, almost half of it has been rendered useless in this way. In order to remove nuisances of this kind in lands, it has been a custom in some places at the beginning of winter, and often when the weather was not very cold, to dig up the ant-hills, three or four inches below the surface of the ground, and then to cut them in pieces, and scatter the fragments about. But this practice only disseminates the ants, instead of destroying them, as they hide

hide themselves among the roots of the grafs for a little time, and then collect together again upon any little eminence, of which there are generally great numbers ready for their purpose; such as the circular ridges round the hollows where the hills stood before. It is therefore a much better method to cut the hills entirely off rather lower than the surface of the land, and to let them lie whole at a little distance with their bottoms upwards; as by this means the ants, which are known to be very tenacious of their abodes, continue in their habitations, until the rains, by running into their holes of communication, and stagnating in the hollows formed by the removals of the hills, and the frosts, which now readily penetrate, destroy them. If a little foot were sown on the places, and washed in with the rains, it would probably contribute greatly to the effect intended. The hills, when rendered mellow by the frosts, may be broken and dispersed about the land, or removed for the purpose of forming into compost with dung, lime, or other substances. By this method of cutting the hills one other advantage is gained, the land soon becomes even and fit for mowing. In wet seasons, heaps of sandy particles are formed by these insects among the grafs, called by labourers *sprout-hills*, which quickly take off the edge of the scythe. These, which are very light and compressible, may be conveniently removed by frequent heavy rolling in the early spring months. In the rural economy of Norfolk, a practice of cutting and burning the ant-hill: that are formed on grafs land is mentioned by Mr. Marshall. The process is, to cut them up with a heart-shaped sharp spade or shovel, in irregular lumps of from ten to fifteen inches diameter, and from two to five or six inches thick. These are to be turned the grafs side downwards, until the mould side is thoroughly dry, and then to be set the grafs side outwards, until they are dry enough to burn. The fire may be kindled with brush wood, and kept smothering, by laying the sods or lumps on gradually, as the fire breaks out, until ten or fifteen loads of ashes are raised in one heap, which the workmen there complete for a shilling or eighteen pence each load of ashes. The places from which the hills have been removed may be sown with grafs seeds. Besides the destruction of the ant, this is a ready, though by no means an economical way of raising manure.

But in the sixteenth volume of the *Annals of Agriculture*, Mr. Young recommends the method of rolling down the ant-hills, instead of cutting them, as the best practice; and says, that he rode over a large pasture, which he should not have known had ever been infested with these hills, if he had not been assured that it was once covered with them. No other method had been used but that of repeated rollings with a very heavy roller.

ANT *lin.* See *FORMICA-LEO*.

АНТ, *myrk*, the name given by Lister and Ray, to a peculiar species of ant, which is of the number of the perfumed insects. It is found on dry banks, and so much smaller than the common ant, that it needs no other distinction. Those of this species which are without wings are of a yellowish colour, and when bruised or crushed emit a sharp and acid smell, as the common ant does; but those which have wings are coal-black, and these, instead of the four smell of the others, emit a perfume not to be endured for its strength. The smell of all the perfumed insects goes off in keeping; and these little creatures, after they have been dead and dry some time, are found to smell less strongly, but much more agreeably. *Phil. Trans.* N^o 77, or *Abr.* vol. ii. p. 792.

АНТ, *visiting*. At Paramaribo, a Dutch colony in the province of Surinam, there are ants which the Portuguese call *visiting-ants*; they march in troops; and as soon as they appear, all the coffers and chests of drawers are laid open, which they clear of rats, mice, and a peculiar sort of insect

in that country called *cockerlaes*, and of other noxious animals. If any one chance to molest them, they fall upon him, and tear in pieces his stockings and shoes. Their visits are rare; and they do not sometimes appear for three years. *Templeman's Obs.* vol. i. p. 36.

ANTA, in the *Ancient Architecture*, a square column, or pilaster, placed at the corners of the walls of temples and other edifices.

These took their name, according to M. Perrault, from the preposition *ante*, *before*, because placed before the walls and coins of buildings, to secure or strengthen them. The *ante* stood out on the wall, with a projecture equal to one-eighth of their face, provided there were no ornament that had a greater projecture; but it was a rule, that the projecture of the antæ should always equal that of the ornaments.

There are also antæ at doors and gates. Festus confines their use to this last place.

Vitruvius calls those that have but two faces out of the wall angular antæ, to distinguish them from others which have three faces disengaged, and which are placed at the ends of the walls of porticos. See *ANTICUM*.

ANTA, or HANTE, in *Geography*, a small kingdom or province on the gold-coast of Africa, is bounded on the north by the country of Adom, on the north-east by Mampoo, by Axim on the west, and on the south and south-east by the ocean. Its extent from east to west is about ten leagues, the country is mountainous, and covered by large trees, among which are situated many fine villages. Anta was formerly powerful and populous, inhabited by a bold and rapacious people, who greatly annoyed the Europeans by their frequent incursions; but by continual wars with Adom and other neighbouring districts, they are now enfeebled, and the country is almost depopulated. The land is well watered, the vallies are rich and extensive, and the productions, which are abundant, are rice, the best maize, sugar-canes, yams, and potatoes. This country is the most healthy of any along the coast; so that different writers have observed, that the number of deaths here bears no proportion to that in any other of the territories on the coast of Guinea. The principal villages of this country are Bourtury or Botro, Boyera or Petre Grand, Pando, Tokorari, which surpasses all the others in extent and beauty, Sokonda, Anta, and Sama. See the several articles. The king of Anta has fixed his residence four miles from the Dutch fort, as he thus enjoys the protection of the Europeans, and is in some measure secured from the apprehensions occasioned by the incursions of the Adomese. *Mod. Un. Hist.* vol. xiii. p. 401, &c.

ASTA, in *Zoology*. See *TARIR*.

ANTAB, in *Geography*, a town of Syria, 42 miles south of Aleppo.

ANTACÆUS, in *Ichthyology*, a name first given by the Greek writers Ælian and Strabo, to the *ichthyolla piscis*, the singlafs fish, or *huso*; and afterwards by Jonston and others, not only to this fish, but to the common STURGEON.

ANTACHATES is used by some naturalists for a kind of bituminous stone of the nature of amber, though of a different colour, which in burning yields a smell like myrrh.

ANTACIDS, in the *Materia Medica*, is used by some writers to denote medicines proper to correct and resist acid humours.

Antacids are chiefly of the alcalious kind.

Under the class of *antacids* come, 1. Absorbents, as chalk, magnesia, cornu cervi utrum, coral, sea-shells, hæmatites, and steel-slings. 2. Obtundents, as oils and fats. 3. Immutants, as lixivious salts and soaps.

ANTACRIDES denote medicines suited to correct acrimony, either in the whole system, or in particular parts of it. See *ACRIMONY*.

ANTÆ, in *Ancient Geography*, a people placed by Procopius and Jornandes near the mouth of the Danube.

ANTÆOPOLIS, so called from Antæus, overcome by Hercules, a town of Egypt in the Thebaid, on the east side of the Nile; was the capital of the Nome *Antæopolites*, about 32 miles above Panopolis, and about the same distance below Nicopolis. The Thebaid, after the age of Constantine, was divided into two provinces; and Antæopolis became the metropolis of the first Thebaid, and had bishops. This city contained the magnificent temple, which the Egyptians, according to Diodorus Siculus, built in honour of Antæus. No part of it is now remaining but the portico, supported by huge columns, and covered with large stones, one of which may be distinguished, thirty feet long by five wide. The ceiling, painted with gold and azure, has preserved the liveliness of its colours. The Turks have converted it into a stable, where they collect their herds. On the ruins of Antæopolis is now built a miserable burgh called *Gaua el Kebire*. Savary's Travels, vol. i. p. 560.

ANTÆUS, in *Entomology*, a species of SCARABÆUS that inhabits America. The thorax has three horns, the middle one the longest, and simple; head unarmed; wing-cases very smooth. Fabricius, Jablonky, and Gmelin. The female has no horns.

ANTÆUS, in *Fabulous History*, a gigantic king of Libya, said to be the son of Neptune and Terra, and of the enormous stature of 64 cubits. In his contest with Hercules, he was repeatedly overcome, and laid on the ground half dead; but as often as he touched the earth, he obtained assistance from his mother, and acquired fresh strength. Hercules, therefore, found it necessary to raise him from the ground, and suspending him in the air, squeezed him to death. This Antæus is said to have built the town of Tingis on the straits of Gibraltar, where he was interred. The Greek geographers pretend that this Antæus founded Antæopolis in Upper Egypt; and Diodorus Siculus informs us, that Osiris assigned to him the government of Libya and Ethiopia. But it is not easy to determine how the Egyptians should raise to the rank of their gods the Grecian Antæus. It is probable, however, that the temple in which Antæus was honoured by the ancient inhabitants of Egypt, was ruined; and that in process of time the Greeks, under the reign of the Ptolemies, substituted for the worship assigned to the Egyptian Antæus, that of the giant of the same name, slain by Hercules.

ANTÆUS, in *Ancient History*, was probably the same with Atlas; and they are represented by ancient writers as two of the first kings of Mauritania. They were both the sons of Neptune, who reigned over Mauritania, Numidia, and a great part of Libya; and they both ruled over a great part of Africa, particularly Tingitania. Hercules defeated and slew Antæus, in the war in which he dispossessed Atlas of Libya. Atlas and Antæus invaded Egypt, and contended with Hercules in the wars with the gods, and were both vanquished by him. Antæus, as well as Atlas, was famed for his knowledge of the celestial sciences; and from this circumstance it may reasonably be inferred, that they were, under different names, the same king of Mauritania. Antæus, in his wars with Hercules, commanded an army of Egyptians and Ethiopians, and behaved with great resolution and fortitude. By means of powerful reinforcements of Libyan troops, he cut off a great number of Hercules's men; but that celebrated commander, having at last intercepted a strong body of Mauritanian or Libyan forces, that were sent to the relief of Antæus, gave him a total overthrow, and put him and the best part of his troops to the sword. This decisive action put Hercules in possession of Libya and Mauritania, and consequently of all the riches

of those kingdoms; and hence arose the fable, that Hercules, finding Antæus, a giant of an enormous size, with whom he was engaged in single combat, had recourse to the artifice mentioned in the preceding article for putting him to death. Hence likewise may be deduced the fable, intimating that Hercules took the globe of Atlas upon his own shoulders, overcame the dragon that guarded the orchards of the Hesperides, and made himself master of all the golden fruit. The golden apples so frequently mentioned by the old mythologists, were the treasures that fell into the hands of Hercules upon the defeat of Antæus; the Greeks giving the oriental word ΣΝΣ, *riches*, the signification affixed to their own term *μᾶλα*, *apples*. After the most diligent and impartial examination of all the different hypotheses of historians and chronologers, relating to Atlas and Antæus, there is no one that appears so little encumbered with difficulties as that of Sir Isaac Newton. According to this illustrious author, Ammon, the father of Sefac, was the first king of Libya, or that vast tract extending from the borders of Egypt to the Atlantic Ocean; the conquest of which country was effected by Sefac during his father's life. Neptune afterwards excited the Libyans to a rebellion against Sefac, and slew him; and then invaded Egypt, under the command of Atlas and Antæus, the son of Neptune, Sefac's brother and admiral. Not long after, Hercules, the general of Thebais and Ethiopia, for the gods, or great men of Egypt, reduced a second time the whole continent of Libya, having overthrown and slain Antæus near a town in Thebais, from that event called Antea, or Antæopolis. Such is the opinion of Sir Isaac Newton, who endeavours to prove, that the first reduction of Libya by Sefac happened a little above a thousand years before the birth of Christ, as the last, by Hercules, occurred some few years after. *Anc. Un. Hist.* vol. xvi. p. 160.

ANTAGONIST, formed from *αντι*, *against*, and *αγωνίζω*, *I contend*, among the *Ancients*, denotes an adversary in battle. In this sense the word is rather used in speaking of sportive combats, or games, than of serious fighting.

ANTAGONIST also denotes one of the parties in literary disputes.

ANTAGONIST *muscles*, in *Anatomy*, are those which have opposite functions. Such are the *flexor* and *extensor* of any limb, the one of which contracts it, and the other stretches it out; and also the *abductors* and *adductors*. Solitary muscles are those without any antagonists; as the heart, &c.

ANTALGIC, from *αντι*, and *αλγος*, *pain*, an epithet given by some writers to medicines proper for abating pain. In this sense antalgics amount to the same with ANODYNES.

ANTALIS, in *Conchology*, the name given by Argenville to the species of dentalium, called ENTALIS by Linnæus.

ANTALKALINES, in the *Materia Medica*, signify medicines suited to correct alkaline salts, or alkaline matters in the whole body, or in particular parts. Dr. Cullen observes (*Mat. Med.* vol. ii. p. 423.), that no alkaline salt, in its separate state, ever exists in the blood-vessels of the living human body. He accordingly explodes the doctrine of Dr. Boerhaave, who treats "De Morbis ex Alkali spontaneo," as incorrect and erroneous, and leading to no occasion for the use of antalkalines; and he adds, that the only occurrence requiring them is a very rare one, that of a pure alkali being thrown in by mistake or accident into the stomach; and the means of taking off its irritation by acids is sufficiently obvious. It is farther to be remarked, that as the alkali, in any noxious quantity, cannot have been introduced without hurting the mouth, fauces, and œsophagus, it is always necessary, in such cases, along with the acids, to employ the large use of diluents and demulcents.

ANTAMBA,

ANTAMBA, in *Zoology*, an animal of Madagascar, probably the same with the engoi of Congo, is a variety of the leopard, as large as a dog, with a round head; and, according to the relations of the negroes, is like a leopard, and devours both men and cattle. It is found only in the most desert parts of the island.

ANTANACLISIS, from *αντι* and *αντικλιω*, *repercutio*, *I strike again*, a figure in *Rhetoric*; whereby the same word is repeated, but in a different signification—As, “Let the dead bury the dead.” “Dum vivimus, vivamus.” This figure carries with it a poignancy; and when it appears natural and easy, discovers a ready turn of thought.

ANTANAGOGE, from *αντι*, and *αναγωγη*, *reortion*; a figure in *Rhetoric*, when, not being able to answer the accusation of the adversary, we return the charge, by loading him with the same or other crimes; which is usually called **RECRIMINATION**.

ANTANDRO, in *Geography*, a town of Asiatic Turkey, in the province of Natolia, 12 miles west north-west of Adramitti.

ANTANDROS, in *Ancient Geography*, a town of Asia Minor, in Mysia, according to Strabo, who places it on the north side of the gulf of Adramyttium. Stephanus Byz. says, that the Cimmericians possessed it during a century. According to Strabo, these people, conducted by Lygdamis, made this town their place of arms. Servius says, that Antandros was founded by the inhabitants of Andros, after they were driven from their own island on account of their sedition. Others say, that the Thracians, having made Polydore a prisoner, obtained this city as the price of his ransom. Some authors place it at the foot of Mount Ida; and allege, that it gave name to the small chain of mountains extending from Troy to the sea. See **ANDROS**.

ANTANI, a people who inhabited Caria.

ANTANISOPHYLLUM, in *Botany*. See **BOERHAAVIA**.

ANTAPHRODISIAC, from *αντι*, and *Αφροδις*, *Venus*; an epithet given to medicines which diminish the semen, and check or extinguish the incitements to venery. It is doubtful whether there be any medicines of specific power for this purpose; and if there be any which have these effects, it is by answering particular indications, under the titles of which they should only be mentioned, and not under a general term of no defined operation.

ANTAPOCHA, in the *Civil Law*, denotes one's acknowledgment in writing of money paid, in the way of rent, pension, interest, or the like incumbrance. Such instrument, or antapocha, the debtor gives upon making payment to the creditor, to serve as a proof of the charge or incumbrance for futurity, and exclude any claim of prescription against the payment of it. The *antapocha* differs from the *apocha*, in that this latter is given by the creditors to the debtor, the former *vice versa*.

ANTARADUS, in *Ancient Geography*, a town of Syria, commonly called **TORTOSA**, was situated over-against the ancient **ARADUS**, to the right of the river Eleuthera, at a small distance from the sea. In the fourth century, about A. D. 330, it continued to be known by its old name, as appears from the “*Itinerarium Hierosolymitanum*,” which, with its other name *Constantia*, given to it by its restorer Constantius, were dissolved some centuries afterwards, in, or perhaps before, the time of the croisades. Shaw's Trav. p. 266.

ANTARCTIC Pole denotes the southern **POLE**, or end of the earth's axis. The word is composed of *αντι*, *contra*, and *αρκτος*, *ursa*, *bear*; as being opposite to the arctic pole. The stars near the antarctic pole never appear above our horizon.

ANTARCTIC circle, is one of the lesser circles of the sphere, parallel to the equator, at the distance of $23^{\circ} 30'$ from the south pole. It takes its name from its being opposite to another circle, parallel likewise to the equator, and at the same distance from the north pole, called the **ARCTIC circle**.

ANTARCTICA, in *Entomology*, a species of **SPHEX**, about the size of the common wasp. It is black, with ferruginous legs and antennæ. Gmelin. Inhabits the Cape of Good Hope.

ANTARCTICA, in *Ornithology*, a species of **PROCELLARIA** that is found within the antarctic circle. It is brown above, beneath bluish white; tail white, black at the tip; legs lead colour. Gmelin. This is the antarctic petrel of Forster and Cook; petrel antarctique, ou damier brun, of Buffon; and petrel brun et blanc of Bongaino. It is about the size of a large pigeon, and the length is sixteen inches, of which the bill is one inch and an half, and is brown with a black tip; the second quill feathers are white, with dark brown tips; the quills are dark brown, with the inner webs of some next the body white. These birds have been met with in flights of twenty or more, by navigators, in S. lat. $61^{\circ} 36'$.

ANTARCTICA, is also a species of **APTENODYTES**, called by Forster the antarctic pinguin. The beak is black, legs reddish, and a black line on the throat. Gmelin.

The length of this bird is twenty-five inches; the weight eleven pounds and an half. Bill nearly three inches in length, black, and the under mandible somewhat truncated; irides pale yellow; upper parts of the body black, beneath glossy white. Under the chin is a narrow blackish streak passing backwards towards the hinder part of the head, and somewhat bent about the region of the ears. Wings above blue-black, the lower margin and inside white; tips black. Tail cuneiform; the feathers, or rather bristles which compose it, black, and thirty-two in number. The feet, which are reddish, or rather flesh colour, have the soles black. Latham, &c.

This species inhabits the South Sea, from 48° to the antarctic circle; and is frequently found on the icy mountains and islands in those regions, according to Forster, Ellis, and other naturalists and navigators.

ANTARCTICUS, in *Entomology*, a species of **TABANUS** that inhabits America. It has four brown stripes across the eyes, and the flanks of the legs are white. Fabricius and Gmelin.

ANTARES, in *Astronomy*, the Scorpion's Heart; a fixed star of the first magnitude, in the constellation **SCORPIO**.

ANTASTHMATICS, in the *Materia Medica*, denote medicines that are supposed to cure asthma; or, in general, to relieve difficult breathing.

ANTASTROPHE, from *αντι*, and *στρω*, *I turn*; in *Rhetoric*, a species of **ANTEPOSITION**.

ANTAVARE, in *Geography*, a province of Madagascar, is situated to the north of Matatane, in $21^{\circ} 30'$ of S. lat. and bounded by the province and cape of Manoufi. It is watered by the river Mananzari, whose source is in the mountains of Ambohitsmene, or red mountains, situate about 12 leagues farther north-west, and which runs south-east and east. Antavare is extremely fertile in rice, yams, bananas, sugar-canes, and honey, of which wine is made; and it abounds in cattle and goats, and all sorts of fowls and provisions. The French discovered in this province gold dust by means of the negroes, who offered it for sale.

ANTE, in *Geography*, a river of France, which runs into the Dive at Calibœuf, in the department of the Calvados.

ANTE, a town and port of Africa, in Guinea, three leagues from the cape of Three Points.

ANTEA, or **ANTEIS**, *Ampus*, in *Ancient Geography*, a town of Gallia Narbonensis, almost to the north of Forum Vocorum. The Roman way from Forum Julii to Reis Apollinarian, passed by Antea.

ANTEAMBULONES, from *ante*, *before*, and *ambulo*, *I walk*, in *Antiquity*, a kind of state servants, who walked before their masters to clear the way and keep off the crowd.

The *sermula* used by these was *Dote beum de vino meo*.

ANTECANIS is used, by some *Astronomers*, to denote the constellation otherwise called *Canis Minor*, or the star *Procyon*. It is thus denominated as preceding, or being the forerunner of the *Canis Major*, and rising a little before it.

ANTECEDENT, in the schools, something that precedes or goes before another, in respect of time or place.

The word is compounded of *ante*, *before*, and *cedere*, *to go*. In which sense it stands opposed to *subsequent*.

ANTECEDENT, in *Grammar*, the word to which a relative refers.

ANTECEDENT, in *Logic*, denotes the first proposition of an *enthymeme*, or of an argument which only consists of two members. In opposition to this, the latter is called the *consequent*.

Thus, in the argument, *cogito, ergo sum, I think, and therefore I exist*; *cogito* is the antecedent: being thus called, because it precedes the *ergo*, or the *copula*, of the argument.

ANTECEDENT of a RATIO, in *Mathematics*, denotes the first term, or that which is compared with the other.

Thus, if the *ratio* be *a : b*, or of *a* to *b*, *a* is said to be the antecedent.

ANTECEDENT signs, in *Medicine*, are such symptoms of disorder as appear before a distemper is so formed as to be reducible to any particular class, or proper denomination.

ANTECEDENTS, in *Rhetoric*, are such things as being once allowed, others necessarily or very probably follow. This is one of the sixteen topics or common places enumerated by Cicero and Quintilian.

ANTECEDENT decree, in *Theology*, is a decree preceding some other decree, or some action of the Creator, or the provision of action. It is a point much controverted, whether predestination be a decree antecedent to faith, or subsequent to it.

ANTECEDENT will, or *desire*, is that which precedes some other will or desire, or some knowledge or provision. Thus some divines say, God by a sincere, but antecedent desire, wills all men to be saved; that is, this sincere desire of God precedes, and does not suppose, the knowledge of their faith and repentance.

ANTECEDENT necessity. See **NECESSITY**.

ANTECEDENTIAL METHOD, in *Mathematics*, is a branch of general geometrical proportion, or universal comparison; and is derived from an examination of the antecedents of ratios, having given consequents, and a given standard of comparison, in the various degrees of augmentation and diminution, which they undergo by composition and decomposition. This method was invented by Mr. James Glenie, and published by him in 1793; and this method, he says, he always used instead of the fluxional and differential methods, and which is totally unconnected with the ideas of motion and time. See the author's treatise on the subject, and also his *Doctrine of Universal Comparison, or General Proportion*, 1789, upon which it is founded. See **CALCULUS, Antecedental**.

ANTECEDENTIA, among *Astronomers*. When a planet appears to move westward, contrary to the order or course of the signs, as from Taurus towards Aries, it is said to move in *antecedentia*.

On the contrary, when it goes eastward, or forward, from Aries towards Taurus, it is said to move in *consequentia*.

ANTECESSOR, one that goes before, or that leads another. See **PRECURSOR, PREDCESSOR, &c.**

The term is particularly used, in some universities, for a public professor, who teaches or lectures in the civil law.

ANTECESSORS, or **ANTECURSORIS**, in the ancient art of *War*, is an appellation given to a party of horse, dispatched before the *agmen* or body of an army, partly by way of intelligence, and partly to choose out a proper place for encamping on, as well as the most convenient roads for the soldiery to travel in. They amount to the same with what the Greeks call *prodromi*.

ANTECHAMBER, or **ANTICHAMBER**, formed of *ante*, *before*, and *camera*, *a chamber*; an outer chamber before the principal chamber of an apartment, where the servants wait, and where strangers stay, till the person to be spoken with is at leisure.

ANTECHRIST. See **ANTICHRIST**.

ANTECUA, or **ANTEGUA**, in *Ancient Geography*, a town of Spain in Bætica, south-east of Hispalis, possessed, according to Ptolemy, by the Antrigones.

ANTECURSORES. See **ANTECESSORS**.

ANTEDATE, a spurious date, prior to the true date of a writing, instrument, act, deed, or the like.

Antedates, in *Commerce*, are of a very dangerous consequence in matters of trade. To *antedate* is to set down a false date: to date from a day prior to that on which the business is transacted, the note or bill drawn, or letters written, &c.

In France it was formerly the ill custom to have blank orders on the backs of bills of exchange, that is, to indorse them merely with a name, so that they could easily be antedated: which in case of failures was liable to cause very great abuses. But by the regulations for commerce of 1683, it is ordered that the signatures on the backs of bills of exchange shall not serve for orders, unless dated; and antedates are punished as forgery.

ANTEDILUVIAN, or **ANTIDILUVIAN**, formed of *ante*, *before*, and *diluvium*, *deluge*, something that existed or happened before the **DELUGE**.

Dr. Burnet and Dr. Woodward differ very widely about the Antediluvian world; the former imagines its face and appearance to have been smooth, equable, and in all respects different from what we now find it to be. The latter, on the contrary, endeavours to prove, that the face of the terraqueous globe before the deluge was the same as it is now, *viz.* unequal, distinguished into mountains and dales, and having likewise a sea, lakes, and rivers; that this sea was salt, as ours is; was subject to tides; and possessed nearly the same space and extent that it now does; and that the *Antediluvian* world was stocked with animals, vegetables, minerals, &c. that it had the same position, in respect of the sun, which ours now hath, its axis not being perpendicular, but inclined, as at present, to the plane of the ecliptic; consequently that there were then the same succession of weather, and the same vicissitudes of seasons as now. See **EARTH**.

In the sense of the definition, those generations that existed from Adam till Noah's flood, are called *Antediluvians*; and those that have descended from Noah to the present time, are called *Postdiluvians*. Although the regular succession of the several patriarchs from the creation to the deluge, or from Adam to Noah, may be deduced without difficulty from the sacred writings, it is not so easy to settle the chronology of this period. Moses has not precisely marked the time of the various transactions that occurred before

the flood, but he has contented himself with merely setting down the years of the fathers' age, in which the several descendants of Adam, in the line of Seth, were begotten, and the length of their respective lives; and therefore, in this period, nothing more can be done than to ascertain the years of the lives and deaths of those patriarchs, and the distance of time from the creation to the deluge. This, indeed, might easily be done, if there were no varieties in the several copies of the writings of Moses, to which we have now access, which are the Hebrew, the Samaritan, and the Greek version of the Septuagint: but these differ

considerably from one another; and hence learned men, as they have preferred one copy or the other, are much divided in their opinions concerning the first ages of the world. In order to enable our readers to judge of the variations of the three copies above mentioned, in this period, we shall subjoin a table extracted from the Ancient Universal History, in which the corresponding numbers of each will appear; and we shall also add those of Josephus, as they have been corrected by Dr. Wells and Mr. Whitton; a correction which became indispensable on account of the corruptions that have been introduced into the present copies of that historian.

A TABLE of the Years of the Antediluvian Patriarchs.

Their ages at their sons birth.	Heb. Sam. Sept. Jof.				Years they lived after the sons birth.			Length of their lives.		
	Heb.	Sam.	Sept.	Jof.	Heb.	Sam.	Sept.	Heb.	Sam.	Sept.
Adam, -	130	130	230	130	800	800	700	930	930	930
Seth, -	105	105	205	105	807	807	707	912	912	912
Enos, -	90	90	190	90	815	815	715	905	905	905
Cainan, -	70	70	170	70	840	840	740	910	910	910
Mahalaleel, -	65	65	165	65	830	830	730	895	895	895
Jared, -	162	62	162	62	800	785	800	962	847	962
Enoch, -	65	65	165	65	300	300	200	365	365	365
Methufelah, -	187	67	167	187	782	653	802	969	720	969
Lamech, -	182	53	188	182	595	600	565	777	653	753
Noah was aged, } at the Flood, }	600	600	600	600						
To the Flood,	1656	1307	2262	1556						

To this Table it will be necessary, in order to explain the consequence of these variations, to add separate chronological tables, shewing in what year of his contemporaries the birth

and death of each patriarch happened, according to the computation of each of the said three copies.

A Chronological TABLE of the Years of the Patriarchs, according to the Computation of the Hebrew.

	Years of the world.	Years of Seth.	Years of Enos.	Years of Cainan.	Years of Mahalaleel.	Years of Jared.	Years of Enoch.	Years of Methufelah.	Years of Lamech.	Years of Noah.
Adam created, -	1									
Seth born, -	130									
Enos born, -	235	105								
Cainan born, -	325	195	90							
Mahalaleel born, -	395	265	160							
Jared born, -	460	330	225	135	65					
Enoch born, -	622	492	387	297	227	162				
Methufelah born, -	687	557	452	362	292	227	65			
Lamech born, -	874	744	639	549	479	414	252	187		
Adam dies, -	930	800	695	605	535	470	308	243		
Enoch translated, -	987	857	752	662	592	527	365	300	113	
Seth dies, -	1042	912	807	717	647	582		355	168	
Noah born, -	1056		821	731	661	596		369	182	
Enos dies, -	1140		905	817	745	680		453	266	84
Cainan dies, -	1235			910	840	775		548	361	179
Mahalaleel dies, -	1290				895	830		603	416	234
Jared dies, -	1422					962		735	548	366
Japhet born, -	1556							869	682	500
Shem born, -	1558							871	684	502
Lamech dies, -	1651							964	777	595
Methufelah dies, -	1656							960		600

The Flood.

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A Chronological TABLE of the Years of the Patriarchs, according to the Computation of the Septuagint.

	Years of the world.	Years of Seth.	Years of Enos.	Years of Cainan.	Years of Mahalaleel.	Years of Jared.	Years of Enoch.	Years of Methufelah.	Years of Lamech.	Years of Noah.
Adam created,										
Seth born,	230									
Enos born,	435	205								
Cainan born,	625	395	190							
Mahalaleel born,	795	565	360	170						
Adam dies,	930	700	495	305	135					
Jared born,	960	730	525	335	165					
Enoch born,	1122	892	687	497	327	162				
Seth dies,	1142	912	707	517	347	182				
Methufelah born,	1387		852	662	492	327	165			
Enos dies,	1340		905	715	545	380	218			
Lamech born,	1474			849	679	514	352	187		
Enoch translated,	1487			862	692	527	365	200		
Cainan dies,	1535			910	740	575		248	61	
Noah born,	1662				867	702		375	188	
Mahalaleel dies,	1690				895	730		403	216	28
Jared dies,	1922					902		635	448	260
Japhet born,	2162							875	688	500
Shem born,	2164							877	690	502
Lamech dies,	2227							940	753	565
Methufelah dies,	2256							969		594
The Flood,	2262									600

A Chronological TABLE of the Years of the Patriarchs, according to the Computation of the Samaritan Pentateuch.

	Years of the world.	Years of Seth.	Years of Enos.	Years of Cainan.	Years of Mahalaleel.	Years of Jared.	Years of Enoch.	Years of Methufelah.	Years of Lamech.	Years of Noah.
Adam created,										
Seth born,	130									
Enos born,	235	105								
Cainan born,	325	195	90							
Mahalaleel born,	395	265	160	70						
Jared born,	460	330	225	135	65					
Enoch born,	522	392	287	197	127					
Methufelah born,	587	457	352	262	192	127	65			
Lamech born,	654	524	419	329	259	194	132	67		
Noah born,	707	577	472	382	312	247	185	120	53	180
Enoch translated,	887	757	652	562	497	427	365	300	233	323
Adam dies,	930	800	695	605	535	470		343	276	323
Seth dies,	1042	912	807	717	647	582		462	388	335
Enos dies,	1140		905	815	745	680		553	486	433
Japhet born,	1207			882	812	747		620	553	500
Shem born,	1209			884	814	749		622	555	502
Cainan dies,	1235			910	840	775		648	581	528
Mahalaleel dies,	1290				895	830		703	636	583
Jared, Methufelah, and Lamech, die	1307									
The Flood,						847		720	653	600

To the varieties exhibited in the two last tables, others might be added, by admitting the various readings of some numbers in the Samaritan and Septuagint; for as to the Hebrew copies, there is here a constant agreement among them.

The manuscript from which the Samaritan Pentateuch was published, agrees exactly with the Samaritan numbers given by Eusebius. But St. Jerom tells us, that, in his time, there were some Samaritan copies which make Methufelah 187 years old at the birth of Lamech, and Lamech

182 at the birth of Noah, just as the Hebrew does. Now if these numbers be approved as the true original numbers, the interval from the creation to the flood will be 1556 years; differing from the Hebrew computation but 100 years in the age of Jared at the birth of Enoch: and if this last be allowed to be a mistake of the transcriber, by his dropping a number, and writing 62 instead of 162, as has been suspected, the Samaritan will be perfectly reconciled with the Hebrew, and all difference between them vanish.

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Scaliger, on the authority of an old Samaritan chronicle, having at the end a table of the years of the patriarchs to the time of Moses, would correct two of the Samaritan numbers in Eusebius; viz. instead of 65, the age of Mahalaleel when he begat Jared, he thinks it should be 75; and instead of 67, the age of Methufelah when he begat Lamech, he would have it 77. By which alterations he reckons 20 years more to the flood than Eusebius and the manuscript; that is, 1327; but as he acknowledges the table whereon he grounds these corrections, contains some great absurdities, it seems unreasonable to oppose it to the joint authority of Eusebius and the Samaritan manuscript.

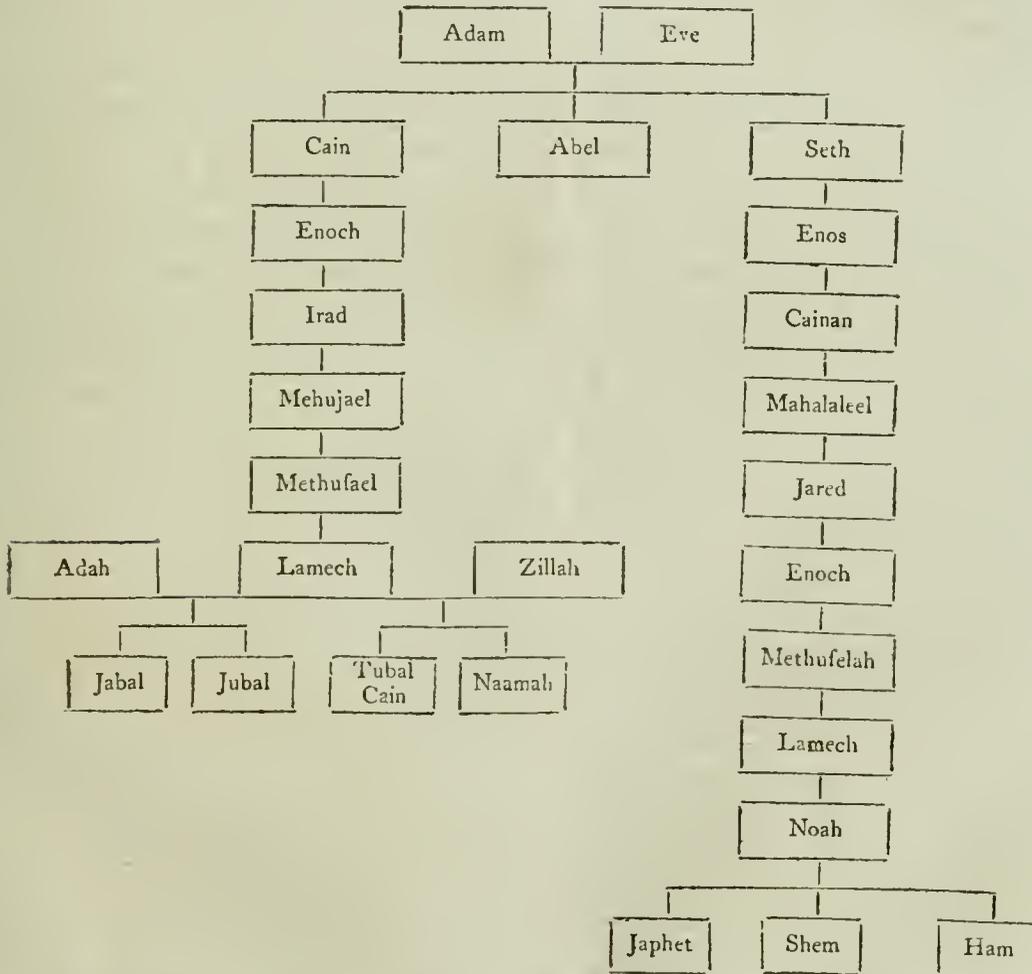
As to the Septuagint, in the common editions of that version, the age of Methufelah at the birth of Lamech is 167; and consequently the sum of this period, according to them, is no more than 2242. But in this case Methufelah will outlive the flood 14 years; and we may well wonder, with Eusebius, where he was preserved. To obviate this objection, we are told, that, in some copies, Methufelah is said to have lived but 782 (not 802) years after the birth of Lamech, and no more than 949 in all. But the Alexandrian manuscript entirely takes away the difficulty, by giving the same number in this place with the Hebrew.

Pezron is of opinion, that the age of Lamech at the

birth of Noah should be but 182, as it is both in the Hebrew and in Josephus; supposing, with St. Austin, that the present number is the error of the scribe, who first copied the original Septuagint manuscript in Ptolemy's library. So that he computes 2256 years to the flood. And, if this correction be admitted, and one more mentioned also by St. Austin, viz. that Lamech lived 505 years after the birth of Noah, and not 565, as in the present copies, there will then remain no other difference between the Septuagint and the Hebrew than 600 years added to the ages of the six patriarchs when they begat their sons; and Methufelah will, conformably to the Hebrew and Samaritan, die in the year of the flood.

The chronology of the learned archbishop Usher has been followed in the calculations of this period; and they may, with very little trouble, be reduced to that of the Samaritan or Septuagint, by those who prefer the accounts of those copies.

As in the course of this work we shall collect, under separate articles, the leading particulars which sacred history has recorded concerning the principal patriarchs, of the Antediluvian world, it is needless to enlarge in this place. It will be sufficient to observe, that the whole progeny of Adam, of whom we have any mention in scripture, were the descendants of Cain and Seth, and the following genealogical table exhibits their succession.



Sacred history is chiefly confined to the line of Seth, and shows few particulars concerning that of Cain, so that no conjectures can be formed how long he or any of his descendants lived. The whole of what we know is, that Lamech, the fifth in descent from him, married two wives, Adah and Zillah, which connection furnishes the first known instance of polygamy: that by the former he had two sons, Jabal, who was the first that dwelt in tents and fed cattle, and Jubal, the inventor of music; and by the other, a son named Tubal-Cain, who found out the art of forging and working metals. Zillah likewise brought him a daughter named Naamah, who is supposed to have invented spinning and weaving. For other particulars, see LAMECH. The posterity of Cain became in a very great degree degenerate and wicked; whilst, on the other hand, the descendants of Seth were as eminent for their piety and virtue. In process of time, however, or after seven generations, according to Josephus, they also became corrupt and profligate; and every kind of wickedness overspread the earth. At length the race of man became incorrigible, and all the means which Providence ordained for awakening and reclaiming them were ineffectual; so that it pleased God, in just displeasure and after signal forbearance, to exterminate the whole species, Noah and his family excepted, by the deluge.

Of the Antediluvian period some accounts have been transmitted to us by those ancient authors who have recorded the Phœnician, Babylonian, and Egyptian antiquities. Sanchoniatho (who is supposed by some to have been contemporary with Gideon, or with David; whilst others deny the existence of such a person, and consider his history as a fiction of Philo Biblius for discrediting Josephus's book against Apion) wrote the Phœnician antiquities. His history commences with the origin of the world and of mankind; but as it was written with a view of apologising for idolatry, he deduces the history, not from Adam in the line of Seth, but in the idolatrous line of Cain, nor does he make the least mention of the deluge. The first pair of mortals with whom his history begins, are called by Philo, his translator, Protogonus and Æon. Their issue were denominated Genus and Genea, and they dwelt in Phœnicia. From Genus sprung Phos, Phur, and Phlox, that is, light, fire, and flame. These found out the method of producing fire by rubbing pieces of wood against each other, and taught men its use. Their sons were of enormous height and bulk, and gave to the mountains of which they took possession their own names of Cassius and Libanus, Antilibanus and Brathys. From these again, in the fifth generation, proceeded Memrumus and Hypsuranius, who were so denominated by their mothers, who lived in a brutal state of prostitution. Hypsuranius inhabited Tyre, and there invented the art of making huts with reeds and rushes, and the papyrus. He quarrelled with his brother Ufous, who was the first inventor of a covering for his body, made of the skins of wild beasts; and he also made a raft of boughs, and ventured upon it into the sea. He likewise consecrated two rude stones or pillars to fire and wind, and worshipped them, pouring out to them the blood of such wild beasts as had been caught in hunting. Afterwards, however, stumps of wood and pillars were also consecrated and worshipped as deities. In the next generation succeeded Agreus and Haliæus, the inventors of the arts of hunting and fishing, from whom the names of huntsmen and fishermen were derived. These begot two brothers, who formed the seventh generation, and who discovered iron and the method of forging it; one of these was called Chryfor, the same with Hephæstus or Vulcan, and exercised himself

in words and charms, and divinations: he found out the hook, bait, and fishing line, built light boats, and was the first man that sailed; so that after his death he was worshipped as a god, and called Zeus Michius, or Jupiter the engineer; and some say, that his brothers invented the art of making bricks. From this generation descended two brothers, one called Technites, or the Artist, and the other Genius Autochthon, or the home-born man of the earth. These found out the art of mingling stubble or small twigs, with the clay of which they made bricks and tiling. One of their posterity, in the ninth generation, was called Agrus, field, and the other Agrouerus or Agrotæ, husbandman, who had a statue much worshipped, and a temple carried about by one or more yoke of oxen, in Phœnicia; and among those of Byblus he is called by way of eminence, the greatest of the gods. These first made courtyards about houses, fences, and caves or cellars. Husbandmen and such as use dogs in hunting, derive their origin from these: and they are also called Aletæ, and Titans. From these succeeded, in the tenth generation, Amynus and Magus, who taught men to form villages, and to feed flocks. Of Amynus and Magus were descended Misor and Sydee; and the son of Misor was Taautus or Thoth. The Protogonus and Æon of the Phœnician genealogy, were, without doubt, Adam and Eve; and Misor, the Mizraim of Moses. From Protogonus to Misor, Sanchoniatho reckons 11 generations; and from Adam to Mizraim, Moses makes 12: so that Sanchoniatho falls short of Moses only by one generation, which is owing to his not having recorded the flood. In this age there was one Eliun, importing in Greek Hypsilus, the most high; and his wife was named Beruth, who dwelt about Byblus; and by him was begotten one Epigeus, or Autochthon, whom they afterwards called Uranus, heaven. He gave his name to the element which is over us, and on account of its excellent beauty, is called heaven; and he had a sister of the same parents, called Ge, the earth, and by reason of her beauty, the earth was denominated from her. Hypsilus, the father of these, being slain by wild beasts, was consecrated, and his children offered sacrifices and libations to him. But Uranus, taking the kingdom of his father, married his sister Ge, and had by her four sons; Hus, who is called Chronus or Saturn; Betylus; Dagon, who is Siton, or the god of corn; and Atlas: but by other wives, Uranus had a numerous issue.

The Babylonian antiquities were collected by Berosus, who was by birth a Chaldæan, and lived in the time of Alexander the Great. He gives a series of ten kings, who reigned in Chaldæa before the flood, and computes their reigns by Sari or decads of years; making the whole sum 1200, or more accurately, 1100 years, which is a number that offers no violence to the Mosiac chronology. As these ten successions correspond to the ten generations that elapsed between the creation and the flood, the first king, whose name was Alorus, has been supposed to be the same with Adam; and Xisuthrus, the same with Noah. Alorus pretended to dominion by divine right, and maintained that God himself had declared him the pastor of the people; a prerogative that peculiarly belonged to Adam. Alasparus, the second king, was succeeded by Amelon, or Amelarus, of the city of Pantibibla, probably the Sipphara of Ptolemy, and supposed by Sir Isaac Newton to be the Sepharvaim of Scripture. After Amenon and Metalarus, who were both of Pantibibla, and the successors of Alasparus, arose Daonus, an inhabitant of the same city, and a shepherd. The seventh prince, called Euedereschus, was of the same city; the eighth or ninth were of another city, called Laranchi; and

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the last of these; Ohartes or Ardates, was succeeded by his son Xifathrus, in whose time the great deluge happened. See DELUGE.

Berosus ascribes the origin of the arts and sciences among the Antediluvians to the following circumstance. There appeared, says he, out of the Red Sea, at a place near the confines of Babylonia, a certain irrational animal, whose name was Oannes. His body resembled that of a fish, and beneath his head another grew; his feet were like those of a man, and proceeded from the fish's tail, and he had a human voice. This animal conversed with men in the day, and communicated the knowledge of letters, arts, and sciences; he taught men to dwell together in cities, to erect temples, to introduce laws, to acquire geometry, and to gather seeds and fruits; and in short, he imparted to mankind whatever was necessary and convenient for a civilized life. When the sun set, this animal, which was of the amphibious kind, retired into the sea, and stayed there during the night. This animal not only delivered his instructions by word of mouth, but wrote concerning the origin of things, and of political economy. Other authors have also mentioned this Oannes, with some trivial difference in their accounts. Hyginus also writes, that Euahanes, a name not very different from Oannes, came out of the sea in Chaldæa, and explained astrology. According to Abydenus, a second animal, called Annedotus, and resembling the demi-god Oannes, arose out of the sea in the reign of Amelon; and in the time of Daonus, four such animals arose from the sea, and their names were Euedocus, Eneugumus, Eneubulus, and Anementus; and under Euedereschus there appeared another animal, like the former, called Odacon. All these explained more particularly what Oannes had delivered in a more summary and concise manner.

The Egyptians have also a series of kings, who, as they pretend, reigned in Egypt before the flood; and their account begins in the same year with that of Berosus. They had an ancient chronicle, extant among them not many centuries ago, which contained 30 dynasties of princes who ruled in that country, by a series of 113 generations, through an immense interval of 36,525 years, during which period Egypt was successively governed by three different races, *viz.* the Auritz, the Mestrai, and the Egyptians. Manetho, a writer somewhat later than Berosus, and whose remains furnish the ancient Egyptian history, has not adopted this extravagant number of years, though he has probably been led into errors in chronology by this old chronicle, which nevertheless some have supposed to have been a composition of later date than his time. This writer begins his history with 16 dynasties or reigns of princes; of whom the first seven were called gods, and the other nine demi-gods; these, he says, reigned 1985 years.

The knowledge we are able to deduce from the scriptures, the only source of authentic intelligence on this subject, concerning the religion, arts and sciences, and policy of the Antediluvians, is very limited and imperfect, and depends more upon conjecture than upon certain conclusions from a detail of facts. Their religious rites, we know, consisted of sacrifices, both of the fruits of the earth and of animals; but it is not agreed, whether the blood and flesh of the animals, or only their milk and wool were offered. See SACRIFICE. Some have endeavoured to prove, that all the patriarchs from Adam had stated places, and both annual and weekly times set apart for divine worship, and also a separate maintenance for the priests; but these particulars, though they may be true, cannot be proved from the scripture. See САВВАТН. The arts and sciences, as we

may naturally suppose, made but slow progress during the period to which we now refer. It appears that the art of working metals was discovered by the last generation of the line of Cain, and music, which they might have been supposed to practise for their pleasure, was not brought to any perfection (if indeed it was actually invented) before the same generation. Some have supposed, that the science of astronomy was cultivated by the Antediluvians; but this opinion is probably owing to a misapprehension of Josephus: but if it was known, the progress they made in it, or indeed in any other science, was inconsiderable. It has been even doubted, whether or not letters were known before the flood. See LETTERS and WRITING. As to their politics and civil constitutions, we can only say, that the patriarchal form of government was probably the first that was adopted; but this was set aside, when tyranny and oppression began to take place; and this change occurred much sooner, as we have reason to believe, among the race of Cain than that of Seth. Their communities were few, and consisted of much larger numbers of people than those which were formed after the flood; and it has been questioned, whether after the union of the two great families of Seth and Cain, there was any distinction of civil societies, or diversity of regular governments at all. It is more likely, that all mankind formed one great nation, living in a kind of anarchy, divided into several disorderly associations; which was almost the natural consequence of their having but one common language, and must have greatly contributed to the general corruption, that could not otherwise have so universally overspread the Antediluvian world. For this reason chiefly, as soon as the posterity of Noah were sufficiently increased, a plurality of tongues was miraculously introduced, in order to divide them into distinct societies, that they might not be so easily debauched for the future. See CONFUSION OF TONGUES, and DISPERSION.

The Antediluvian world was, probably, stocked with a much greater number of inhabitants in proportion to the extent in which we may suppose it to be habitable than the earth, in its present state, is perhaps capable of containing or supplying. This increase of population seems naturally to follow from the great length of their lives, exceeding the present standard of life in the proportion of at least ten to one; the Antediluvians must, accordingly, in any long space of time, double themselves, at least, in about the 10th part of the time in which mankind do now double their number; for they began to procreate as early, and left off as late, in proportion, as men do now; and the several children of the same father seem to have succeeded as quickly one after another as they usually do at this day; and as many generations, which are but successive with us, were contemporary before the flood, the number of people living on the earth at once, would be sufficiently increased to answer any defect which might arise from other circumstances not considered. So that, if we make a computation on these principles, we shall find, that there was a considerable number of people in the world at the death of Abel, though their father Adam was not then 130 years old, and that the number of mankind before the deluge would easily amount to above 100,000 millions, even according to the Samaritan chronology; that is, to 20 times as many as our present earth has, in all probability, now upon it, or can well be supposed capable of maintaining in its present constitution. It is now generally owned, as the result of good observations, that mankind double themselves in about 360 or 370 years; or, allowance being made for all excepted cases, such as wars, famines, &c. in about 400 years. So that allowing the period for doubling mankind from the
creation.

creation to the deluge to be ten times shorter by reason of their so much longer lives; if we have a series of 40 numbers, beginning at two, for so many God created at first, and doubling themselves in 40, or for convenience, in 41 years, at a mean, or one age with another, till the deluge, we shall, in some degree, obtain the sum total of mankind at the deluge, and also in the several ages before that time; though this period of doubling must still have been much shorter in the earliest, and longer in the latest times of the interval; which computation Mr. Whiston, who has furnished these observations has given in the following table.

Number of mankind.	Years of the world.	Years of doubling.	Series.
4	2	2	1
8	6	4	2
16	12	6	3
32	20	8	4
64	30	10	5
128	42	12	6
256	56	14	7
512	72	16	8
1,024	90	18	9
2,048	110	20	10
4,096	132	22	11
8,192	156	24	12
16,384	182	26	13
32,768	210	28	14
65,536	240	30	15
131,072	272	32	16
262,144	306	34	17
524,288	342	36	18
1,048,576	380	38	19
2,097,152	420	40	20
4,194,304	462	42	21
8,388,608	506	44	22
16,777,216	552	46	23
33,554,432	600	48	24
67,108,864	650	50	25
134,217,728	702	52	26
268,435,456	756	54	27
536,870,912	812	56	28
1,073,741,824	870	58	29
2,147,483,648	930	60	30
4,294,967,296	992	62	31
8,589,934,592	1,056	64	32
17,179,869,184	1,122	66	33
34,359,738,368	1,190	68	34
68,719,476,736	1,260	70	35
137,438,953,472	1,332	72	36
274,877,906,944	1,406	74	37
549,755,813,888	1,482	76	38

Mr. Cockburn, in his Treatise on the Deluge, has made several objections to the principles upon which the above table is calculated, for which we must refer to the author's own account. This author has computed two tables, exhibiting the increase of mankind in the Antediluvian world; the first on the supposition of their doubling themselves in 50 years, and the other in 40 years, and both beginning at the year 500, when there could not be fewer than 100 married or marriageable persons descended from Adam and Eve.

Years of the World.	Number of Mankind.
500	200
550	400
600	800
650	1,600
700	3,200
750	6,400
800	12,800
850	25,600
900	51,200
950	102,400
1,000	204,800
1,050	409,600
1,100	819,200
1,150	1,638,400
1,200	3,276,800
1,250	6,553,600
1,300	13,107,200
1,350	26,214,400
1,400	52,428,800
1,450	104,857,600
1,500	209,715,200
1,550	419,430,400
1,600	838,860,800
1,650	1,677,721,600
1,700	3,335,443,200
1,750	6,710,886,500
1,800	13,421,772,800
1,850	26,843,545,600
1,900	53,687,091,200
1,950	107,374,182,400
2,000	214,748,364,800
2,050	429,496,729,600

This table is calculated at the long interval of 50 years, that it may appear that even by under-rating the number of mankind, there would be so many millions born into the world before the deluge came, that they would be obliged to spread themselves over the face of the earth, though but one half of the sum total of 429,496 millions had been alive at the time of the deluge; but as the interval here allowed may appear to be too long for the time of doubling, the second is calculated at the interval of 40 years, which comes nearer to the truth of the case, though even this may exceed the time of doubling.

Years of the World.	Number of Mankind.
500	200
540	400
580	800
620	1,600
660	3,200
700	6,400
740	12,800
780	25,600
820	51,200
860	102,400
920	204,800
940	409,600
980	819,200
1,020	1,638,400
1,060	3,276,800
1,100	6,553,600
1,140	13,107,200
1,180	26,214,400
1,220	52,428,800
	1,260

Years of the World.	Number of Mankind.
1,260	104,857,600
1,300	209,715,200
1,340	419,430,400
1,380	838,860,800
1,420	1,677,721,600
1,460	3,355,443,200
1,500	6,710,886,400
1,540	13,421,772,800
1,580	26,843,545,600
1,620	53,687,091,200
1,660	107,374,182,400
1,700	214,748,364,800
1,740	429,496,729,600
1,780	858,993,459,200
1,820	1,717,986,918,400
1,860	3,435,973,836,800
1,900	6,871,947,673,600
1,940	13,743,895,347,200
1,980	27,487,790,694,400
2,020	54,975,581,388,800

The author, allowing for all obstructions and deficiencies in the course of nature, and for all casualties and accidents, reduces the former number to one-half, viz. to 27,487,790,694,400, that is, 27 billions, or millions of millions, four hundred and eighty-seven thousand, seven hundred and ninety millions, six hundred and ninety-four thousand, and four hundred. This he supposes to be the whole number of those who were born into the world before the deluge, or during an interval which he states at 2256 years. He then allows for those who died before the deluge, and on this account reduces the above number again to one-half, and states the whole number of mankind alive upon the earth at the time of the deluge to have been no more than 13,743,895,347,200, that is, 13 billions, or millions of millions, seven hundred and forty-three thousand eight hundred and ninety-five millions three hundred and forty-seven thousand and two hundred; a number far exceeding that of the present inhabitants of the whole earth. The first of the above tables is brought down no lower than to the year 2050, and the second to the year 2020, though there remain by the first 206, and by the second 236 years to the flood; the reason of which is, that in the last 200 years of the world, mankind would not increase in any measure equal to what they had done in the preceding years, though regularly the increase should have been much greater; because violence was then great in the earth, and thousands, yea millions, might have been cut off by untimely deaths; for which cause the destruction of the world was determined 120 years before the flood came.

For the longevity of the Antediluvians, and the probable causes of it, see LONGEVITY.

It has been a question much debated, whether or not flesh was permitted to be eaten before the deluge. By the permission given expressly to Noah for that purpose, after the flood, and God's assigning vegetables only for food to man, as well as beast, at the creation, one would imagine it was not lawful before; yet others have supposed, that it was included in the general grant of dominion given by God to Adam over the animal creation; and the distinction of beasts into clean and unclean, which was well known before the flood, is alleged as a strong argument on this side, and which it is not easy to answer. On the other hand it is urged, that if flesh were eaten before the flood, it does not appear that there was any occasion to renew this grant after it, which grant, specifying distinctly animal food, contradistinguished from vegetable, respected not Adam only, but all his posterity. It is farther urged, that the distinction

between clean and unclean, respected animals offered in sacrifice in the Antediluvian world; as appears from this circumstance, that upon the grant of animal food to him and his descendants, which was posterior in time to the sacrifice, there is not the least mention of any distinction between clean and unclean with respect to food, but the contrary. The distinction of clean and unclean with regard to food, was introduced by the law of Moses, and differed from that of sacrifices; as there were several creatures clean for food which were not to be offered in sacrifice. Others contend, that if it be alleged that this distinction was used proleptically, it is a mere subterfuge; and to suppose it made solely to distinguish what was lawful or unlawful to be sacrificed, and not what might or might not be eaten, is little better; it being the custom to offer to God such fruits and animals as were fit for food and sustenance, and not such as were of no use or benefit to mankind in this respect. Shuckford's Connection, &c. vol. i. book i. p. 1—57. Anc. Un. Hist. vol. i. p. 21—72.

ANTEJURAMENTUM, from *ante*, before, and *juramentum*, oath, or PRÆJURAMENTUM, by our ancestors also called *juramentum calumnie*, in *Law*, an oath which both the accuser and the accused were anciently obliged to make before any trial or purgation. The accuser was to swear that he would prosecute the criminal; and the accused was to make oath on the very day that he was to undergo the ordeal, &c. that he was innocent of the fact of which he was charged. If the accuser failed, the criminal was discharged; if the accused, he was understood to be guilty, and was not to be admitted to purge himself by the ordeal.

ANTEJUSTINIANEAN, an appellation sometimes given to the ancient Roman law, as it stood before the time of the emperor Justinian.

Tribonian has been often condemned for suppressing the writings of the Antejustinianean lawyers. Schulting, a celebrated professor at Leyden, has a dissertation on the equity of this censure. Fabricius gives a catalogue of the ancient Antejustinianean lawyers. Schulting has published a collection of the Antejustinianean writers.

ANTELIA, in *Ancient Geography*, a town of Asia, in Armenia.

ANTELIUS, or ANTHELIUS, in *Ancient Writers*, denotes an idol placed over the doors of houses, supposed to have the guardianship, or protection of them.

The word is originally ἀντιλιος, q. d. against the sun, as being exposed to it.

ANTELMI, JOSEPH, in *Biography*, a French writer of Ecclesiastical History, was a canon of Frejus, in Provence, in the 17th century. He published, in 1680, a Latin "Dissertation, Historical, Chronological, and Critical, on the church of Frejus." He also wrote a critical inquiry concerning the author of the creed, commonly called Athanasius's, with other tracts, abounding with curious research. He died, a victim to immoderate study, at the age of 49, in the year 1697. Nouv. Dict. Hist.

ANTELOPE, ANTILOPE, in *Zoology*, a genus of the *Mammalia Pecora*, in the Linnæan system by Gmelin; the characters of which are, that it has concave horns, turned upwards and round, annulated, i. e. furrowed with prominent rings, or spiral and permanent. The lower jaw has eight broad fore-teeth; the upper jaw none; and there are no tusks in either. To these characters Mr. Pennant adds, that the inside of the ears is marked lengthways with three feathered lines of hair, and that the limbs are of a light and elegant form. The antelope forms an intermediate genus between the deer and the goat; though arranged with the latter by Linnæus, in his former editions, and by several other naturalists: but Gmelin, in imitation of Pennant, Erxleben,

and Pallas, has referred them to a distinct genus. In the form of their bodies they agree with deer, and in the texture of their horns, which have a core in them, they resemble the goats; they have all gall-bladders, distinct lachrymal gutters, or pits under the eyes; a plait of the skin divided into several cells in the groins; brushes of hair on the knees, and beautiful black eyes. In general their flesh is excellent, as they feed on the tender shoots of trees, though some species have a rank hircine or musky flavour, which probably results from the qualities of the plants on which they feed. None of the numerous species of this genus are found in America; they are mostly confined to Asia and Africa, inhabiting the hottest regions of the Old World, or the temperate zones near the Tropics. None of them, except the chamois and saiga, are found in Europe. They chiefly inhabit hilly countries, though some reside in the plains; and some species form herds of two or three thousand, while others keep in small troops of five or six. These animals are elegantly formed, active, restless, timid, shy, and astonishingly swift, running with vast bounds, and springing or leaping with surprising elasticity; they frequently stop for a moment in the midst of their course to gaze at their pursuers, and then resume their flight. The chase of these animals is a favourite diversion among the eastern nations; and the accounts that are given of it supply ample proofs of the swiftness of the antelope tribe. The greyhound, the fleetest of dogs, is usually outrun by them; and the sportsman is obliged to have recourse to the aid of the falcon, which is trained to the work, for seizing on the animal, and impeding its motion, that the dogs may thus have an opportunity of overtaking it. In India and Persia, a sort of leopard is made use of in the chase; and this animal takes its prey not by swiftness of foot, but by its astonishing springs, which are similar to those of the antelope; and yet if the leopard should fail in its first attempt, the game escapes. The fleetness of this animal has been proverbial in the country which it inhabited from the earliest times: the speed of Afabel (2 Sam. ii. 18.) is beautifully compared to that of tzchi, which Shaw, in his Travels, translates antelope, and not roe, as it is in our text; and the Gadites were said to be as swift as the roes upon the mountains. We may add, that the disciple restored to life at Joppa was supposed to have been called Tabitha, i. e. Dorcas, or the Antelope, from the beauty of her eyes; and it is still a comparison in the east; so that *aine el ezazel*, or "You have eyes of an antelope," is used as the greatest compliment that can be paid to a fine woman. Authors enumerate 29 species. 1. *Antelope leucophaea*, blue antelope, with recurved, roundish, and annulated horns, and of a bluish colour. This is the blauer-bock of Kolben, boue-chamois of Journal Historique, and blue antelope of Pennant. It inhabits the country to the north of the Cape of Good Hope; is larger than the fallow deer or buck; its colour, when alive, is a fine blue, of a velvety appearance, but when dead changes to a bluish grey, with a mixture of white; beneath each eye is a large white mark, and the belly is white. This species, according to Pennant, from the form of the horns, which are sharp-pointed, taper, and arcuated, bending backwards, and marked with 20 prominent rings; and also from the length of the hair, seems to connect the goat and antelope kinds. 2. *A. Leravia*, lerwee, with wrinkled horns, bent backwards, distant in the middle, and approaching each other at the base and points, having a remarkable tuft of hair on the nape of the neck, and of a reddish colour. This is the antelope kob of Erxleben; the kob or little brown cow of Buffon; the fish-tall or lerwee of Shaw's Travels; and the Gambian antelope of Pennant. It inhabits Africa, chiefly about the rivers Gam-

bia and Senegal; it is about the size of the fallow-deer, and is remarkable for the tuft of hair on the nape of the neck, and for having long brushes of hair on the knees of the fore-legs. The horns are surrounded with eight or nine rings. 3. *A. Rupicapra*, chamois; see CHAMOIS. 4. *A. Dama*; see NANGUIR. 5. *A. Redunca*; see NAGOR. 6. *A. Tragocamelus*; see BIGGEL and TRAGOCAMELUS. 7. *A. Picta*; see NYLGHAU. 8. *A. Saiga*; see SAIGA. 9. *A. Gutturosa*; see TZEIRAN. 10. *A. Subgutturosa*, Persian antelope, with horns bent in form of a lyre; the upper parts of the body of a brownish ash colour, the under parts pure white, and a yellowish white stripe along each side. It inhabits Persia between the Caspian and Euxine seas. In size and habit it resembles the roe, lives in large flocks, and subsists chiefly on the artemisia pontica; the horns are above 13 inches long, and smooth at the points; the throat has at the fore-part a protuberance, and the knees are furnished with brushes. The female brings forth in May. The flesh is reckoned very good. 11. *A. Pygarga*, *A. dorcas* of Pallas; cervicapra of Houttuyn, Linn. ed. Belg.; and suggested, not without hesitation, by Gmelin to be the koba of Buffon, and mountain antelope of Russel's Aleppo; klip-springer or spring-buck of Sparrman; white-faced antelope of Pennant, with the horns bent like a lyre; the general colour a hoary-red, and a blood-red or bright bay neck, a deep red band along the sides, white buttocks, and a white face. This species is about five feet four inches long, and three feet high at the shoulders; inhabits the countries to the north of the Cape of Good Hope, runs swiftly, bounding from rock to rock, is caught with difficulty, and its flesh is much esteemed. The horns bend outwards in the middle, and approach at the points; those of the males have each six or seven rings on the lower part, and those of the females have no rings. 12. *A. Saltans*, springer antelope, with slender horns, twice contorted, and annulated half way, the general colour a pale brown, the chest, belly, insides of the limbs, buttocks, and half way up the back are white, and a broad chestnut coloured band along the sides. This animal, if it be different from the preceding species, with which it agrees in the form of the horns and disposition of the dark-coloured bands, inhabits the Cape of Good Hope. It is rather less than a roebuck; and migrates annually from the interior parts of the country, in small herds; continues near the Cape for two or three months, and then retreats towards the north in herds of many thousands. Herds of many hundred thousands periodically migrate, in seven or eight years, from the north, probably compelled to leave their haunts in the Terra de Natal by the excessive drought of that region, and spreading over the whole country of Caffraria, which they desolate, without leaving a blade of grass. In their migrations, they are attended by lions, hyænas, and other wild beasts, to which they afford prey. The Hottentots call them the lions' flocks of sheep. Their flesh is excellent; and with other antelopes, they furnish the venison of the Cape. From their prodigious bounds, they are denominated spring-bucks; and when alarmed, they have the power of expanding the white space about the tail into a circular form, which assumes again its linear shape when the animal is tranquil. Pennant. Masson in Phil. Trans. vol. lxvi. p. 310. 13. *A. Dorcas*; see DORCAS. 14. *A. Kevella*; see KEVEL. 15. *A. Corinna*; see CORINE. 16. *A. Bubalis*, the CERVINE Antelope of Pennant; which see. 17. *A. Koba*; see Koba. 18. *A. Gnu*; see GNU. 19. *A. Oryx*; see PASAN. 20. *A. Oreotragus*, African antelope, with very straight, tapering, and sharp-pointed horns, slightly wrinkled at the bases. It inhabits Africa; has a reddish head, the upper parts of the body greenish-yellow, and the under parts of a whitish ash-colour; the tail is very short.

short. 21. *A. Gazella*, capra bezoardica; or bezoar goat of Syst. Nat. ed. 12.; *Hircus bezoardicus* of Brisson, &c.; animal bezoardicum of Ray; animal ignotum of Gesner; gazella of Belon and Prosper Alpinus; algazel of Pennant and Buffon, with very long, wrinkled, slender, upright, tapering, and sharp pointed horns, which are slightly bent inwards at the ends. It inhabits India, Persia, Egypt, and Ethiopia; runs swiftly up hill, but slowly on plain ground; is gregarious, and is easily tamed; the general colour of the fur is red, with a white breast and belly: the real oriental bezoar, of a greenish and bluish colour, and when recent, of a very powerful aromatic odour, is frequently found in the fourth stomach of this species, chiefly in that of males and full grown animals, and more rarely in the stomachs of females or younger individuals. 22. *A. Leucoryx*; see LEUCORYX. 23. *A. Orcas*, Indian or elk antelope; see COUDOU. 24. *A. Scripta*, or harnessed antelope; see GUIB. 25. *A. Grimmia*, or Guinea, antelope; see GRIMM. 26. *A. Pygmaea*, or royal antelope; see GUEVEI. 27. *A. Sylvatica*, wood antelope, wood goat, or bosch-bock of Sparrman; with horns smooth, somewhat spirally twisted, annulated at the bases, and marked with several longitudinal ribs, the ends being taper and sharp pointed. It inhabits chiefly the woods near the Cape of Good Hope, and lives in pairs. It is about three feet high, the upper parts of the body are brown, the forehead white, two white spots on each cheek, a large white spot under the throat, and another at the bottom of the neck; the breast and hinder part of the belly are white, and there are several white spots on the thighs and flanks; the tail is very short, and a short mane runs along the neck and ridge of the back; the whole fur is longish and coarse. The female has no horns. 28. *A. Strepticeros*, or striped antelope; see CONDOMA. 29. *A. Cervicapra*, Indian, common, or brown antelope; see LIDMEE.

Professor Pallas, in his travels through different provinces of Russia and northern Asia, has described the method of hunting the antelope, which is the principal amusement of the Tonguses, who inhabit the heaths of Daouria beyond the lake Baikal. They choose for this purpose the level and open tracts, situated near a mountain, a river, or a forest. In autumn, at which season their horses are most vigorous, they form companies of 150 or 200 hunters, all on horseback, attended by led horses. Each has a trained dog; and they are armed with bows and arrows. This chase commonly lasts several days. When arrived at the rendezvous, they send before three or four sharp-sighted huntsmen to get a view of the game from the heights or mountains; who stop to wait for their companions as soon as they perceive the antelopes. When the troop comes in sight, the scouts make signals to them, or by some evolutions of their horses signify the place in which the antelopes feed, and the course that must be taken in order to come up with them. The troop then breaks into several divisions, and the hunters separate to the distance of 60 or 80 fathoms from each other, in order to form a great ring. Those on the wings advance towards the pasturage of the herd, and endeavour to conceal themselves behind the heights till the animals are surrounded: the ring then closes. When the antelopes, at the approach of the hunters, attempt to escape, the men rush on them, chase them from one party to another, terrifying them with their shouts and the whistling of their arrows, which, for that purpose, are furnished with a button of bone, perforated beneath the head. In this manner they kill all that they can reach. This chase is more successful when the scene of it lies near a river or a mountainous forest, as the antelopes or heath-goats never take to the water, though long and furiously harassed, but rather strive

to escape by sudden and vast leaps through the troops of their pursuers. They are almost equally shy of forests. They are no sooner hunted into a wood, than they are so bewildered among the trees as not to be able to move a hundred paces, but run their heads against every tree, and soon fall breathless. Pallas, Travels, tom. i. p. 402. tom. iii. p. 204.

ANTELUKAN, from *ante* and *lux*, *light*, in Ecclesiastical Writers, is applied to things done in the night, or before day. We find frequent mention of the antelucan assemblies, *caus antelucani*, of the ancient christians in times of persecution for religious worship.

ANTELUZIA, from *ante*, and *ludus*, *game*, in Antiquity, a day of show or parade preceding the circuses, wherein the preparations made for those solemnities were exposed in great form and pomp.

ANTEMETICA, in the *Materia Medica*, denote medicines suited to cure a preternatural vomiting.

ANTEMNA, in *Ancient Geography*, a town of Italy to the north or north-east of Rome. Although it was built in the territory of the Sabines, it was founded by a colony from Alba, and comprised in the division called Ancient Latium. According to Varro, its name, derived from *ante annem*, denoted its position, which Cluvier and M. d'Anville assign at the confluence of the Anio and Tiber. Its inhabitants were called *Antemnates*; and in the fourth year of Rome, they contended with the Romans, and were totally vanquished by them, and their city was destroyed. They afterwards became citizens of Rome.

ANTEMURALE, from *ante*, and *murus*, *wall*, in Middle Age Writers, denotes a kind of outer wall environing the other walls and works of a place, and preventing the too near access of the enemy to them.

This is also called by *Isidore*, *promurale*, as being *pro munitione muri*, for the defence of the wall.

In some writers we find it denominated *antepectoralis muris*, in other *anpis*.

ANTEMURALE is also used to denote any work without-side the rampart or wall of the place.

In this sense, antemurale amounts to the same with what we otherwise call *OUTWORK*.

ANTEMURALE, is also used, in Ecclesiastical Writers, for the vestibule or entrance of the *presbyterium*, or *BEMA*.

ANTENATUS, from *ante*, and *natus*, *born*, is used, in some *Law Writers*, for the first-born, or eldest son, answering to what we call *aîné*.

ANTENATUS, is also sometimes used for a son, the issue of a former marriage. In which sense, antenatus amounts to the same with *privignus*.

ANTENATI, in the modern *English History*, is chiefly understood of the subjects of Scotland, born before king James the First's accession to the English crown, and alive after it. In relation to these, those who were born after the accession were denominated *POSTNATI*. The antenati were considered as aliens in England, whereas the postnati claimed the privilege of natural subjects.

ANTENCLEMA, *αντικλημα*, in *Oratory*, is where the whole defence of the person accused turns on criminating the accuser. - Such is the defence of Orestes, or the oration for Milo, *Occisus est sed latro. Exsecutus sed raptor*. See *RECRIMINATION*.

ANTENICENE, in Ecclesiastical Writers, denotes a thing or person prior to the first council of Nice.

We say the antenicene faith, antenicene creeds, antenicene fathers.

ANTENNÆ, in *Entomology*, are those delicate moveable horns with which the anterior part of the heads of insects are invariably furnished. These are peculiar to this order of beings, and are easily distinguished from the tenta-

culc of vermes, in being crustaceous; and from the palpi of insects, by their situation being nearer the mouth, though not by their number, as naturalists formerly imagined, for they are not a six nor a ten, as is commonly thought, but are usually four in number, as Linnæus mentions; but in most lepidopterous insects, when accurately considered, only amount to two; and the same may be observed of the libellulæ, phalangæ, and several others; while, on the contrary, in the cancer, scyllarus, allacæ, ganumarus, and some other genera, the number of them is six. Fabricius. The antennæ in all insects, or at least with the exception of a few of the apterous kinds that have four, and some six, rarely exceed two. Both the antennæ and palpi are of the utmost consequence in the systematic arrangement of insects, as will be noticed hereafter.

For the want of a more appropriate term in the English language for the antennæ of insects, they are sometimes called the horns, and sometimes the feelers; the latter of which is by no means applicable, since it confounds them with the palpi, which are the true feelers. Of the purposes for which nature has designed the antennæ we are ignorant; some have conjectured, that they are the organs of smell or hearing; and others have supposed they are appropriated to a feeling more delicate than our own, and sensible to the least motion or disturbance in the ambient fluid in which they move. In form and size they vary extremely in different insects, and even generally in the two sexes of the same species, as is fully exemplified in the phalæna genus.

Andrew John Bladh, a pupil of Linnæus's and author of the paper in the seventh volume of Linnæus's *Amoenitates Academicæ*, called *Fundamenta Entomologiæ*, characterises the different structure of the antennæ of insects in the following manner.

SETACEÆ, *setaceous*, are those which gradually taper towards the point, and resemble a bristle.

FILIFORMES, *filiform*, such as are of an uniform thickness throughout, like a thread.

MONILIFORMES, *moniliform*, are filiform like the preceding, but consisting of a series of round knobs, like a necklace of beads.

CLAVATÆ, *clavated*, club shaped, or increasing gradually from the base to the extremity.

CAPITATÆ, *capitated*, club-shaped like the former, but the last articulation larger than the rest, and forming a kind of capital or head.

FISSILES are capitatæ, but have the capitulum divided horizontally into three or four laminæ or plates, as in the scarabæi, &c.

PERFOLIATÆ are likewise capitatæ, but have the capitulum divided horizontally, and connected by a kind of thread that passes through their centre.

PECTINATÆ, so called from their resemblance to a comb, though they more properly resemble a feather, having usually lateral appendages on both sides, as in phalæna, &c.

ARISTATÆ, such as have a lateral hair, which is either naked or furnished with lesser hair, as in some muscæ, &c.

The terms *breuioræ*, *longioræ*, and *mediocres*, are occasionally employed in speaking of the length of the antennæ, and of course imply whether they are shorter, longer, or of the same length as the body. See *ENTOMOLOGÏA*.

ANTENNATOR, a species of *ICHNEUMON* that inhabits Cayenne. It is pale yellow, crown, back of the thorax, tail, and tip of the wings black. Fabricius and Gmelin.

ANTENNELLA, a name given by some to phalæna lucella (*tinea*) of Gmelin. Vide Wien. Schmetterl. p. 135. n. 19.

ANTENNINA, in *Natural History*, a species of *SER-TULARIA*, having denticles verticillate, in fours, and fetaceous; vesicles obliquely truncated; stems rather simple. Linn. Gmelin. This is coralina allaci corniculorum æmula of Ray and Petiver. *Mulca marinus secundus* of Dodon. Pempt. &c. *Myriophyllum non ramosum* of Ginann. &c. Inhabits European coasts.

ANTENOR, in *Entomology*, a species of *PAPILIO* that inhabits India. Wings tailed; both surfaces black with white spots; and a marginal row of red lunated spots on the posterior pair. Fabricius. Gmelin. Donovan's Insects of India, &c.

ANTEOR, in *Ancient History*, a Trojan prince, of whom various fabulous narrations are recorded. He is supposed to have been a son of Laomedon, and younger brother of Priam. Homer represents him as one of the prudent counsellors who advised the restoration of Helen, and giving satisfaction to the Greeks. Some later writers have charged him with betraying Troy to the enemy. However that be, he was spared in the massacre: and Virgil in his *Æneid* has adopted a story concerning him, that, after the destruction of Troy, he led a colony of Veneti, a people of Paphlagonia, into Italy, near the mouth of the Po, where expelling the Euganei from their lands, he settled in them, and founded Padua. From this emigration the name of the Veneti is said to be derived. The pretended tomb of Antenor, discovered in the thirteenth century, is manifestly fictitious. His wife Theano, the daughter of Ciffæus, king of Thrace, was priestess of Minerva. Gen. Biog.

ANTENUPTIAL, something that precedes marriage.

In this sense we say, *antenuptial promises*, *antenuptial presents*, *antenuptial covenants*, *antenuptial fornication*, &c. Neolladius has a treatise, *De Pactis Antenuptialibus*.

ANTEPAGMENTA, or **ANTIPAGMENTA**, in the *Ancient Architecture*, the jambs of a door, or lintels of a window. The word is used for the entire *chambranle*, i. e. the door-case or window-frame.

ANTEPENULTIMA, or **ANTEPENULTIMATE**, in *Grammar*, the third syllable of a word, reckoning from the latter end; or the last syllable except two.

The word is compounded of the preposition *ante*, *before*, and *penultima*, *last but one*, or *pen ultimam*.

It was upon this syllable that the Greeks placed their acute accents, and also on the last and last but one; but they never placed the accent before the antepenultima. See *ACCENT*. The *Antepenultima* of a dactyle is always long.

ANTEPILANI, among the *Ancient Romans*, denote the hastati or principes of a legion.

They are supposed to be thus called because ranged before the triarii, who were also called pilani.

Some will have the word to be a corruption for *ante-fignani*.

ANTEPILEPTICS, in *Medicine*, denote a quality in remedies, whereby they prevent, diminish, or cure epileptic fits.

The practice of classing the articles of the materia medica according to the diseases or parts of the body they are supposed to cure, is unscientific, and now disused.

There are many medicines which diminish irritation in the nervous system; such as opium, castor, musk, valerian, spiritus ætheris vitæ comp. &c. which for the sake of abridging medical language, we call **ANTISPASMODICS**, all which are antiepileptics. Many absurd articles, calculated to excite disgust and horror, may be found in old authors, as specifics in this very common and formidable disease: the human skull, secundines, and blood; lizards, frogs, and the dung of various animals, rank high in these writers: at present, the

the metallic salts, the calces of metals, and some of the vegetable poisons, together with a suitable regimen, are principally relied on. See EPILEPSY.

ANTEPOSITION, from *ante*, and *pono*, I place, a grammatical figure, whereby a word which, by the ordinary rules of syntax, ought to follow another, comes before it. As when, in Latin, the adjective is put before the substantive, the verb before the nominative case, &c.

Anteposition stands opposed to postposition. One case or species of this figure is called by a particular name, *antastrophe*.

ANTEPREDICAMENTS, **ANTEPRÆDICAMENTA**, in *Logic*, certain previous matters, requisite to a more easy and clear apprehension of the doctrine of **PREDICAMENTS** or **CATEGORIES**.

Such are definitions of common terms; as equivocal, univocal, &c. See **DEFINITION**, **DIVISION**, &c.

They are thus called, because treated by Aristotle, before the predicaments: that the thread of the discourse might not afterwards be interrupted.

ANTEQUERA, in *Geography*, a well built town of Spain in the kingdom of Grenada, divided into two parts, the *higher* and the *lower*. The former is situated upon a hill much above the rest, has a fortified castle, and is occupied by the nobility; and the latter is in a fertile plain, watered by a number of streams. It has a collegiate church, four parishes, fourteen convents of monks, and eight of nuns, and about 13,000 inhabitants. The mountain on which part of the town is situated, yields a quantity of salt; and at a small distance is a fountain of water, which is said to cure the gravel. In the neighbourhood are also excellent quarries of stone for building. It is 26 miles north-north-west from Malaga, and 54 west from Grenada. N. lat. 37° 6'. W. long. 4° 40'.

ANTEQUERA is also a town of New Spain in America, in the province of Guaxaqua, 30 leagues south-east from Guaxaqua.

ANTERIDES, in the *Ancient Architecture*, denote buttresses erected to support a wall.

These are sometimes called *antes*, sometimes *crisma*, and by the Greeks *επιστοιχια*.

Anterides answer to what the modern builders call counterforts and archbutants; the Italians *barbican*, and *speroni* or spurs.

ANTERIOR, or **ANTERIOUR**, formed of the preposition, *ante*, before; something before another, chiefly in respect to place. In which sense the term amounts to the same with *prior*, and stands opposed to *posterior*.

ANTERIOR Ramus. See the article **RAMUS**.

ANTIERNACHA, **ANDERNACH**, in *Ancient Geography*, a town of Gaul, belonging to the *Rupeni*, and situate at the confluence of the *Moselle* and *Rhine*. See **ANDERNACH**.

ANTEROS, in *Mythology, the son of *Venus* and *Mars*, one of the two *Cupids* who were the chief of the number. They are placed at the foot of the *Venus* of *Medici*. This is represented with a heavy fullen look, agreeably to the poetical description of him, as the cause of love's ceasing. The other was called *Eros*. Ovid. Rem. Amor. V. verse 549 to 576.*

ANTEROTES, a name given by some of the ancient writers on gems to a species of the *amethyst*. Some have imagined they meant by it a sort of *opal*; but *Pliny* expressly contradicts this, making the *anterotes* the fifth kind of **AMETHYST** in value. *Plinii Hist. Nat. lib. xxxviii, ch. 40.*

ANTES, in *Architecture*. See **ΑΝΤΑ**.

ANTESIGNANI in the Roman armies, a kind of soldiery posted before the eagles, and other ensigns of the legions, whence their appellation.

The *antesignani* stand contradistinguished from the *subsignani*, who were ranged in the same line with the ensign; and from the *postsignani*, who were placed behind them. *Cæsar* and *Livy* mention the *antesignani* as the first line, or first body, of heavy armed troops. The *velites*, who used to skirmish before the army, were also called *antesignani*.

ANTESIGNANI was a denomination given to those inferior officers, called *campi doctores*, who instructed the troops in their exercise.

ANTESIGNANUS, **PLTER**, in *Biography*, an industrious grammarian, was born at *Rabasteins* in *Languedoc*, and flourished in the sixteenth century. He published a Greek grammar, which passed through several editions, and a treatise on universal grammar; but his most esteemed publications were his editions of *Terence's* comedies, in which he took pains to facilitate the learning of the Latin language. The epistle to this work was dated at *Lyons* in 1556. His industry also appears in his "Thematis Verborum investigandi Ratio," and his "Praxis Præceptorum Linguae Græcæ," annexed to several Greek grammars. "Let others," says he, "affect the reputation of learning: I honestly and truly own, that I have to the utmost of my power devoted my labours to the useful purpose of forming and assisting the studies of boys." Gen. Dict.

ANTESINISTRA, a name given by the augurs to those thunderbolts, or birds, which proceeded from the south and passed to the east, and which were thought to afford unfavourable presages. *Virgil* calls by this name a crow, *Eclog. ix. 15*, according to *Servius*:

"Antesinitra cava monuisset ab ilice cornix."

ANTESTARI, in *Roman Antiquity, denoted to bear witness against any one who refused to make his appearance in the Roman courts of judicature, on the day appointed, and according to the tenor of his bail. The plaintiff finding the defendant after this breach of his engagement, was allowed to carry him into court by force, having first asked any of the persons present to bear witness. The person asked to bear witness in this case expressed his consent by turning his right ear, which was instantly taken hold of by the plaintiff, and this was to answer the purpose of a *subpœna*. The ear was turned upon this occasion, says *Pliny*, as being the seat of memory; and therefore the ceremony was a sort of admonition to the party to remember his engagement.*

ANTESTATURE, in *Fortification*, a small retrenchment, made of *palisadoes*, or sacks of earth set up in haste, to dispute with the enemy the remainder of a piece of ground part whereof had been already gained.

ANTEVERTA, or **ANTEVORTA**, and **POSTVERTA**, or **POSTVORTA**, in *Mythology, deities worshipped among the Romans: the first, called also *Prorsa*, or *Porrina*, was supposed to know past events, and was invoked to repair injuries that had already occurred; and the second, being acquainted with futurity, was supplicated to prevent evils that might happen.*

ANTEVIRGILIAN HUSBANDRY. See **ANTIVIRGILIAN**.

ANTHALIUM, among the *Ancients*, a root growing in dry places, and about the bigness of the fruit of the medlar; it was dug up for food, and esteemed very pleasant and wholesome.

ANTHANA,

ANTHIANA, or ANTHENA, in *Ancient Geography*, was a city of Peloponnesus, and one of the 100 towns of Laconia, according to Stephanus Byz. It is said to have derived its name from Anthe, the son of Neptune, who was killed by Cleonenes, the brother of Leonidas.

ANTHEDON, a town of Bœotia, placed by Pausanias, and after him by M. d'Anville, a little to the north of Mount Messapius, and owing its name to its elevated situation. In the midst of this city was a temple of the Cabiri, and near it the sacred wood of Ceres, and the temple of Proserpine, with her statue in white marble; it had also a temple and statue of Bacchus. The poet Anthes, who composed hymns, was, according to Plutarch, a native of this city. Imperial Greek medals were struck here in honour of Caracalla.

ANTHEDON, or AGRIPPIAS, a town of Palestine, in the country of the Philidines, upon the borders of the sea, to the south-west of Gaza. Herod gave it the second name in honour of Agrippa, his friend, and the favourite of Augustus.

ANTHELIA, a town of Messenia, which Homer mentions, and which had been promised to Achilles by Agamemnon. In Strabo's time it bore the name of Thuria.

ANTHELA, a town or burgh of Greece, near the straits of Thermopylæ. According to Herodotus (lib. vii. 176), it was near the river Phœnix, and watered by the Aſopus.

ANTHELION, from *αντι* and *ηλιος*, *sun*, in *Physics*, signifies a mock or spurious sun; and denotes a meteor, not very common, of a luminous appearance, somewhat resembling the sun, seen through clouds, bigger, sometimes four or five times, than the solar disk. In its most refulgent state, it is as yellow as the sun: but the lucid tract surrounding it is of a paler yellow or whitish cast, interspersed sometimes with a few reddish or subfuscous spots. The most received opinion relative to the formation of this kind of meteor attributes the phenomenon to a multitude of minute icy or snowy particles suspended in the air, and either refracting or reflecting the solar rays in such a manner, as to multiply the image of the sun. But the theory of antelia, for want of a proper number of observations, seems not yet to be brought to such a degree of satisfaction, as by every lover of physiology could be desired. The instances of them are but rare. See *Phil. Trans.* vol. liii. Part. i. N^o 16. An. 1761. See HALO and PARHELION.

ANTHELIX, in *Anatomy*, the inner circle of the auricle: thus called from its opposition to the outer circuit, called the HELIX.

ANTHELMIA, Indian PINK.

ANTHELMINTICS, in the *Materia Medica*, medicines good to destroy worms.

The word is compounded of *αντι*, *contra*, against, and *ελμινθες*, a worm.

There are two principal kinds of worms which infest the human stomach and bowels; the flat or tape worm; and worms of various sizes, which are round, somewhat like earth-worms. The former is called TÆNIA, the latter ASCARIS, lumbricus, &c. See *Memoirs of Med. Soc. Lond.* vol. v.

The presence of worms in the primæ viæ generally arises from weak digestion; and therefore the cure of DYSPEPSIA will generally destroy the worms. Particular kinds of worms, however, require particular anthelmintics, which will be found under those heads. See ASCARIDES, &c.

Two or three grains of calomel, with one of salt of steel, taken in treacle, for two or three mornings, and then a brisk purge of rhubarb and jalap, ten or fifteen grains of each, is the best general vermifuge.

ANTHEM, from *αντι*, and *υμνος*, a hymn. In our church service, any psalm or portion of scripture, set in florid counterpoint, different from chanting in our cathedrals, and from metrical psalmody in our parish-churches, is called an anthem, whether for one, two, three, or more voices. Anthems, in our choral service, are distinguished by the epithets solo, verse, or full anthems. *Solo anthems* have frequently symphonics or ritornels for particular stops on the organ. In *verse-anthems*, there are solo parts for voices of different registers or compass, and different sides of the choir. A *full anthem* is in constant chorus, except at the leading off a fugue, or new point of imitation. *Anthems* for a single voice, in the Romish church, are called *motets*. At the latter end of the 17th century and beginning of the last, the *motetti* of Bassani, the master of Corelli, were in great favour in England, as well as Italy. In ecclesiastical history, anthems are styled *Αντιφωνοι υμνοι*, from *αντι*, *contra*, and *φωνη*, *vox*, *sonus*. Antiphonal singing implies singing from side to side, alternately, as the psalms are chanted in our cathedrals. St. Ignatius, a disciple of the apostles, according to Socrates the ecclesiastical historian, was the author of this kind of singing in the Greek church, and St. Ambrose introduced it into the Roman.

There is in the Brit. Mus. an admirable collection of solo, verse, and full anthems, and services, compiled by Dr. Tudway, of Cambridge, for the Earl of Oxford, in six huge vols. fol. (N^o 7337). Dr. Green began to collect our best cathedral music from the time of the reformation, to the middle of the last century; but he dying before any great progress was made in the work, it was carried on with great judgment and spirit by his worthy scholar and successor, Dr. Boyce, and engraved and published, in a correct and splendid manner, in three vols. large fol. 1760, 1768, and 1773. This useful publication has been resumed and carried on since the decease of Dr. Boyce, by Drs. Arnold and Dupuis.

The solo anthems of Purcell, Drs. Crofts, and Green, are elegantly printed, and in constant use in our cathedrals. It is hoped that the solemn and dignified style of the fathers of our church music, Tallis, Bird, and Gibbon, will long be regarded as a model for our services and full anthems, as that of Palestrina continues to be, for the best composers, a *capella*, in Italy.

Anthems were first introduced into the reformed service of the English church in the beginning of the reign of queen Elizabeth.

ANTHEMIS, in *Botany*, supposed from *ανθηω*, *florere*, having an abundance of flowers, a genus of plants of the chamomile kind. Lin. G. 970. Jussieu 185. Linnæan class and order, *syngenesia polygamia superflua*; natural order, *compositæ discoideæ*, and of the *corymbifera* of Jussieu. Its general characters are, that it has a *calyx* common, hemispherical, consisting of numerous linear subequal scales; *corolla* compound radiate; florets in the disk hermaphrodite and tubular, those in the radius female, and more than five; the former are funnel-shaped, five-toothed, erect, the latter ligulate, lanceolate, and sometimes three-toothed. In the hermaphrodite florets the *filaments* are five, capillary, very short, supporting cylindrical tubular *antheræ*. *Germen* oblong, *style* filiform, *stigmata* two, reflex; *seeds* solitary, receptacles chaffy, convex.

Nineteen species of this genus are described, of which five are natives of Britain. 1. *A. cota*, which bears a very large flower, and the *palea* or chaff between the florets is rigid and prickly: it is a native of Spain, growing in ploughed fields; annual. 2. *A. altissima*, grows three feet in height; leaves pinnatifid, compound, with pointed teeth: it grows wild

in the south of Europe; annual. 3. *A. maritima*, with stems prostrate, branches smooth; leaves pinnate, fleshy, cut into small teeth; calyx and peduncles pubescent; a native of the south of France, and also of Britain. 4. *A. tomentosa*, with stems a foot high, one flowered, leaves tomentose; the two outer divisions of the corolla larger than the others: a native of the south of Europe. 5. *A. mixta*, with leaves simple, jagged, toothed: a native of France and Italy; annual. 6. *A. alpina*, with leaves tooth-pinnated, entire, linear; stem villose, one-flowered; florets of the radius striated, three-toothed. See Jacq. Fl. Aust. vol. v. t. 30: a native of Italy; perennial. 7. *A. chia*, with leaves pinnatifid, jagged, peduncles naked, subvillose: a native of the Levant. 8. *A. nobilis*, with root perennial, stems trailing, hairy; leaves bipinnate, pinnulae two or three-cleft, pointed, hairy; flowers solitary; calyx hairy, with broad, shining, membranaceous edges; florets of the circumference somewhat elliptical, entire, or with two or three teeth, those of the centre yellow: this is the common chamomile; it grows wild in many parts of England, and flowers in July and August. See Woodv. Med. Bot. t. 108. 9. *A. arvensis*, with stems erect, much branched; leaves bipinnatifid, hairy; peduncles tomentose, terminal, one-flowered; disk yellow; florets of the radius white, three-toothed; receptacle conical: it is a common annual weed among corn, and therefore called corn-chamomile; it flowers in June and July. See Eng. Bot. 602. 10. *A. austriaca*, with stems upright, branched, scarcely a foot high; leaves bipinnate: flowers solitary, disk yellow, radius white; seeds naked: a native of Austria. 11. *A. cotula*, with stems much branched, smooth; leaves bipinnatifid, smooth, of a light green colour; disk of the flower convex, yellow: radial florets white: this, from its ungrateful smell, is called stinking chamomile, or May-weed; it is very common, and flowers in June and July, annual. Curt. Fl. Lond. fasc. v. t. 61. 12. *A. pyrethrum*, with stem simple, trailing, scarcely a foot high, one-flowered; leaves bipinnate, segments linear, pointed: florets at the centre yellow, those of the circumference white, and purple on the under side: it is perennial, and flowers in June and July; it is called Spanish chamomile, or pellitory of Spain. 13. *A. valentina*, with stem branched, leaves pubescent, tripinnate, bristle-shaped; calyx villose: a native of Spain. Miller, fig. 73. 14. *A. repanda*, with leaves simple, alternate, obtuse; flowers terminal, globose: a native of Spain and Portugal. 15. *A. trinervis*, with stem erect, simple; leaves smooth, coloured; peduncles terminal, one-flowered: a native of South America. 16. *A. americana*, with leaves triternate, peduncles terminal, longer than the branch: a native of America. 17. *A. tinctoria*, with stem erect, angular, about a foot and a half high; leaves bipinnatifid, smooth, lacinate pointed; flowers of a bright golden colour; ox-eye chamomile: it is a native of Sweden and Germany, and also of Britain, flowering in July and August. See Flor. Dan. t. 741. 18. *A. arabica*, with stem upright, proliferous, round, purplish; leaves singly and doubly pinnatifid; one flower terminates the stem; it is large, and of a beautiful golden colour. See Smith, Spicil. 20. This handsome annual plant is a native of Arabia. 19. *A. odorata*, with leaves pinnatifid at the tip, calyx membranaceous: a native of the Cape of Good Hope, where it was discovered by Mr. Masson in 1774.

Medicinal Properties. The common chamomile, species 8, and the pellitory of Spain, species 12, are both articles of the materia medica, in the London and Edinburgh pharmacopœias. Both the leaves and flowers of the former have a strong, though not ungrateful smell, and a very bitter nauseous taste; but the latter are preferred, being bitterer, and considerably more aromatic. The flowers readily give out

their virtues to water, and also to rectified spirit. They possess the stomachic and tonic qualities usually ascribed to simple bitters, having very little astringency, but a strong, aromatic, penetrating odour, from which they are also judged to be carminative, emmenagogue, antispasmodic, and anodyne. They have been successfully employed for the cure of intermittents, as well as of fevers of the irregular nervous kind, accompanied with visceral obstructions, for which we have the authority of sir John Pringle. That chamomile flowers have been effectually substituted for Peruvian bark, we have the testimony of several respectable physicians, among whom we may notice Dr. Cullen, who recommends them to be given, conjoined with an astringent, to prevent their tendency to produce diarrhœa. A watry infusion of these flowers is frequently used for the purpose of exciting vomiting, or for promoting the operation of emetics. Externally they are directed in the *decoctum pro fomento*; they are also ordered in the *decoctum pro enema*. Murray, ap. Med. vol. i. p. 130. Woodville, Med. Bot. vol. ii. p. 103.

From the aromatic and stimulating qualities of the root of the pellitory of Spain, there can be no doubt that it might be found an efficacious remedy, and equally valuable as an internal medicine with many others of this class now constantly prescribed. Its use, however, has been long confined to that of a masticatory, for on being chewed or long retained in the mouth, it excites a glowing heat, stimulates the excretories of the saliva, and thereby produces a discharge which has been found to relieve tooth-achs and rheumatic affections of the face; in this way too, it is recommended in lethargic complaints, and paralytic of the tongue. Woodv. Med. Bot. vol. ii. p. 287.

ANTHEMIS, or ANTHEMUSA, in *Ancient Geography*, one of the names of the isle of Samos, according to Pliny.

ANTHEMIUS, in *Biography*, and *History*, emperor of the west, was a native of Constantinople, and descended from an ancient, illustrious, and wealthy family. His name was derived from his grandfather by the mother's side, Anthemius, prefect of the east, and the excellent prime minister of Theodosius the younger. Having married Marciana, the only daughter of the emperor Marcian, he was successively advanced to the chief dignities, and had some claim to the empire itself. He was consul A. D. 455, and afterwards patrician and general, in which office he gained a victory over the Huns on the banks of the Danube. Being nominated by the emperor Leo I. to terminate the interregnum in the west, Anthemius left Constantinople with a splendid retinue, and entered Rome with universal acclamations, where he was inaugurated A. D. 467. Soon after this event, he married his daughter to Ricimer, the powerful commander of the barbarians. His government was too feeble to protect Gaul from the inroads of the Visigoths, who defeated a body of British troops sent for by Anthemius to protect his subjects, unused to military operations. In the discord that arose between the emperor and Ricimer, the latter fixed his residence at Milan, and exercised an independent sovereignty over that part of Italy; and marching with an army of Burgundians and Suevi, brought with him Olybrius, whom he destined for the empire. Anthemius, faithfully supported by the senate and citizens of Rome, resisted a siege of three months; but at length Ricimer took the capital by storm, and discovering Anthemius in his place of concealment, caused him to be massacred. Anc. Un. Hist. vol. xiv. p. 429—433. Gibbon's Hist. vol. vi. 193, 194. 217, 218.

ANTHEMIUS, a celebrated architect in the time of Justinian, was a native of Tralles in Asia Minor, and employed by him in the construction of various edifices, and particularly

particularly the church of St. Sophia in Constantinople, when on this occasion formed the design, and directed the operations of 10,000 workmen, whose payment in pieces of five silver was never delayed beyond the evening. Anthemius was also a sculptor, a mathematician, and an experimental philosopher. He is said to have so well imitated an earthquake, as to frighten out of his house one Zeno, a rhetorician, who had offended him. At another time the friends of Zeno, as they sat at table, were dazzled by the incredible light which flashed in their eyes from the reflecting mirrors of Anthemius. Theophrastus describes the artifice of these burning glasses, which he had read in a mathematical treatise of Anthemius, intitled, "Περὶ παραδόξων μηχανημάτων," Of Wonderful Machines; which treatise has been published, translated, and illustrated by M. Dupuys, a scholar and a mathematician. Mem. de l'Acad. des Inscriptions, tom. xvii. p. 371—451. Gibbon's Hist. vol. vii. p. 113.

ANTHEMUSIA, in *Ancient Geography*, a town of Asia, in Mesopotamia, mentioned by Pliny, Strabo, and Tacitus; situate to the south-east of Samosata, and nearly east from Zeugma, and separated by a chain of mountains from Edessa to the north-east. An imperial Greek medal of this city was struck in honour of Caracalla.

ANTHENA, a town of the Argolide, in Cynuria.

ANTHERÆ, in *Botany*, a term used by some authors for the yellow or ruddy globules in the middle of certain flowers, as of lilies, saffron, &c.

Some confine the antheræ to the yellowish globules in the middle of rosetts. These are held more assurgent than the rest of the plant.

Others apply the name antheræ to those little tufts or knobs which grow on the tops of the stamina of all other flowers; more usually called APICES.

The antheria or apex of the stamen, in the Linnæan system, is a principal part of the male organ of generation in plants, and contains within it a fine powder, called *pollen*, or *farina seminans*, declined for the impregnation of the *germen*, and which, when come to maturity, it discharges.

ANTHERICUM, said to be derived from ἄθος *anthos*, i. e. *flower of the hedges*. Lin. G. Pl. n. 422. Gertn. 16. Phalangium, Jussieu, 52. Class, *hexandria monogynia*; natural order of *coronarie* and of *asphodeli* of Jussieu. Its generic characters are as follows: *Calyx* none; *corolla*, petals six, oblong, obtuse, spreading; *stamina*, filaments subulate, erect; *antheræ* small, incumbent, four-furrowed; *pistillum*, germen obscurely triangular; *style* simple, of the length of the stamina; *stigma* obtuse, triangular; *capsule* ovate, smooth, three-furrowed, three-celled, three valved; *seeds* numerous, angular. There are more than thirty species of this genus, many of which are very difficult to ascertain. The only species which is a native of Britain is the *A. serotinum*, the *A. ossifragum* and *calyculatum*, being by Dr. Smith now referred to other genera. 1. *A. floribundum*, with leaves flat, smooth, linear-lanceolate, acute; scape simple, raceme many-flowered, cylindric, compact; petals spreading; stamina smooth: a native of the Cape of Good Hope, from whence it was sent by Mr. F. Masson, and introduced into the Royal Garden at Kew, in 1774; it flowers in March and April. 2. *A. serotinum*, with root perennial, consisting of oblong curved bulbs; stem or scape erect, smooth, round, commonly one-flowered; radical leaves exceeding in height that of the stem, semicylindrical, nerved, narrow from the base, those of the stem alternate, short; petals elliptical, equal, nerved, white on the inside, externally reddish; stamina smooth; it grows on high mountains among rocks in several parts of Europe: in Britain it has only been found

in Wales. Jac. Flor. Austr. 5. t. 38. It flowers in June. 3. *A. gracicum*, with leaves flat, scape simple, flowers corymbed, filaments woolly; a native of the Levant. 4. *A. planifolium*, with leaves flat, scape and filaments woolly: it is a native of Portugal, flowering in April. 5. *A. revolutum*, curled flowered anthericum, with leaves flat, scape branched, corolla revolute: it is a native of the Cape of Good Hope; and was first cultivated here by Mr. Miller, in 1731. 6. *A. ramosum*, branching anthericum, with leaves linear subulate, flat; scape branched, peduncles solitary, corolla flat, pistils straight: it is a native of Sweden, Swisserland, Austria, the south of France, &c. and was first cultivated in England by Gerard, about the year 1597. 7. *A. elatum*, tall anthericum, with leaves flat, scape branched; flowers scattered, white: it is a native of the Cape of Good Hope, flowering in August and September. 8. *A. triflorum*, three-flowered anthericum, with leaves channelled, sword-shaped, scape simple, bractæa remote, three-flowered: it is a native of the Cape of Good Hope, and introduced into the King's Garden at Kew, in 1782, by George Winch, Esq. 9. *A. canaliculatum*, channelled anthericum, with leaves rather fleshy, hairy, sword-shaped-triquetrous, channelled; scape simple: this is also a native of the Cape: it flowers in April. 10. *A. albucoides*, striped flowered anthericum, with leaves linear, channelled, smooth, with a cartilaginous edge; scape simple: a native of the Cape, flowering in August; it was discovered by Mr. F. Masson, in 1788. 11. *A. hiliago*, grass leaved anthericum, with leaves flat; scape perfectly simple; corolla flat; pistillum bending down. Jac. Hort. i. t. 83. Fl. Dan. t. 616: it is a native of Germany, France, and Denmark; cultivated here, in 1597, by Gerard. 12. *A. liliastrum*, Savoy anthericum, with leaves flat; scape perfectly simple; corolla bell-shaped, white; stamina bending down: the French call this species St. Bruno's lily; it grows wild on the mountains of Swisserland and Savoy. 13. *A. spirale*, without leaves; scape four inches high, filiform, spiral, bearing three or four flowers; a native of the Cape. 14. *A. frutescens*, shrubby anthericum, with leaves fleshy, columnar; stem shrubby: a native of the Cape; first cultivated in Chelsea garden, in 1702. 15. *A. alooides*, aloe-leaved anthericum, with leaves fleshy, subulate, flattish: a native of the Cape; cultivated by Dr. Sherrard, in 1732. 16. *A. asphodeloides*, glaucous-leaved anthericum, with leaves fleshy, subulate, semi-columnar, upright, stiff; flowers yellow: a native of the Cape; cultivated by Mr. Miller, in 1759. 17. *A. annuum*, annual anthericum, with leaves fleshy, subulate, columnar; scape subracemed; flowers yellow: a native of the Cape; cultivated by Mr. Miller, in 1748. 18. *A. hispidum*, hairy-leaved anthericum, with leaves fleshy, compressed, rough; flowers white: a native of the Cape, and sent to the King's Garden at Kew, by Mr. F. Masson, in 1774. The preceding five species have all fleshy leaves, but those that follow are sword-shaped. 19. *A. calyculatum*, see TORFIELDIA. 20. *A. ossifragum*. See NARTHECIUM. 21. *A. japonicum*, with leaves sword-shaped, convolute, smooth; scape branched, angular; flowers racemed, reddish: a native of Japan, China, and Java. 22. *A. filiforme*, thread-leaved anthericum, with leaves filiform, rather cylindric, rough; filaments smooth: it is perennial, flowering in April: a native of the Cape, and introduced here by Mr. F. Masson, in 1774. 23. *A. flexifolium*. 24. *A. muricatum*. 25. *A. latifolium*. 26. *A. cauda-feis*. 27. *A. triquetrum*. 28. *A. ciliatum*. 29. *A. falcatum*. 30. *A. contortum*. 31. *A. scabrum*. 32. *A. squameum*. The above ten species are all Cape plants, and mentioned in the Supplementum Plantarum, but unknown in this country. They were all but the last discovered by Thunberg. 33. *A. cirratum*, with leaves lanceolate, flattish; scape panicled: a native of New Zealand.

34. *A. adenanthera*, with leaves linear, ensiform, connate at the base; a gland between the filament and anther: a native of New Caledonia.

Propagation and Culture. All the species except the seventeenth are perennial, and are usually propagated by offsets taken during the summer or autumn. Those plants which do not throw out suckers freely, may be propagated by seeds, sown in the spring or autumn, in a warm situation, on a bed of light sandy earth. When the leaves decay, the roots should be broken up and transplanted. If the winter prove severe, they should be defended from the cold by covering the bed with straw, or what is better, old tan, from a hot bed. Thus treated, they will be strong enough to flower in one year, and in autumn may be taken up, and planted in the borders of the flower-garden, where they will live several years, if the roots be well defended from the frost. Some of the species, as the 7th, must be housed in winter, or placed under a hot-bed frame, which is to be preferred to a common green-house. See Martyn's Miller's Dict.

ANTHERINUS, in *Entomology*, a species of *CRYPTOCERPHALUS*, in Gmelin's arrangement. It is black, with two ferruginous bands. This is *tenebrio pedicularis* of the tenth edition of the Linnæan *Systēma Naturæ*, and *meloe antherinus* of the twelfth edition of the same work, and the *Fauna Suecica*. Fabricius places it in his genus *Iagria*, in the *Species Insectorum*: this insect is very small, lives on flowers, and runs fast.

ANTHESPHORIA, in *Antiquity*, a feast celebrated in Sicily, in honour of Proserpine. The word is derived from *ανθος*, *flower*, and *φερω*, *I carry*, in relation to Pluto's having forced away that goddess when she was gathering flowers in the fields. Yet Festus does not ascribe the feast to Proserpine; but says it was thus called, because ears of corn were carried on this day to the temples. Anthesphoria seems to be the same thing with the *floriferum* of the Latins, and answers to the *harvest-home* among us.

Anthesphoria were also celebrated in the temple at Argos, in honour of Juno Antheias; according to Pausanias, in the *Corinthiaca*.

ANTHESTERIA, was a feast celebrated by the Athenians in honour of Bacchus.

The most natural derivation of the word is from *ανθος*, *flor*, a *flower*; it being the custom at this feast to offer garlands of flowers to Bacchus.

Some are of opinion it took its name from the month *Anthesterion*, in which it was celebrated. Others pretend, that this was not the name of any particular feast, but that all the feasts of Bacchus were called *anthesperia*.

The *anthesperia* lasted three days, the eleventh, twelfth, and thirteenth days of the month; each of which days had a name suited to the proper office of the day, and during which the masters served their slaves at table. The first day of the feast was called *ανθισια*, i. e. opening the vessels, because on this day they tapped the vessels, and tasted the wine. The second day they called *χοος*, *congii*, the name of a measure, containing the weight of a out ten pounds: on this day they drank the wine prepared the day before. The third day they call *κηφοι*, *kettles*: on this day they boiled all sorts of pulse in kettles; which, however, they were not allowed to taste, as being all to be offered to Mercury.

ANTHESTERION, in *Ancient Chronology*, the sixth month of the Athenian year. It contained twenty-nine days, and answered to the latter part of our November and beginning of December. Neapolis, a commentator on the *Fasts* of Ovid, says, that it answered to the end of February and beginning of March. The Macedonians called it *Defion*

or *Defion*. In this month the Athenians and other people of Greece celebrated feasts in honour of the dead.

It had its name from the festival *ANTHESTERIA* kept in it.

ANTHIAS, in *Ichthyology*, a species of *LABRUS*, very concisely described by Gmelin, after Artedi, as being entirely reddish, "totus rubescens." This is *Anthea* of Rondel, and according to Catesby, found in Carolina; it is also said to inhabit the south of Europe, and to have the gill covers serrated. Some have supposed this fish to be a perch.

ANTHISTIRIA (*Ανθιστιρια*, *floralia*, an Athenian festival observed in honour of Bacchus), in *Botany*, an exotic plant, of a grass-like appearance, belonging to the class *polygamia monoecia*, and natural order, *gramina*. The essential generic character is, that the *calyx* is cleft at the base into four equal divisions or valves. *Anthistiria ciliata* is the only species of the genus hitherto discovered.

ANTHIUS, **FLOWERED**, in *Mythology*, a furnace given to Bacchus, at Athens, and also Patras in Achaia; because the statues of this god were covered with a robe charged with flowers.

ANTHOCEROS, a small cryptogamous plant, of the order *alge*. Lin. Gen. 1201. In the *male* flower the *calyx* is sessile, cylindrical, entire; anther very long, subulate, two-valved; in the *female*, the *calyx* is cut into six divisions, and contains three seeds. 1. *A. punctatus*, with the fronds undivided, indented, dotted: a native of Britain, growing on heaths and moist shady places. 2. *A. laevis*, with smooth, undivided, indented fronds. 3. *A. multifidus*, with bipinnated linear fronds. See Hedwig's *Figures and Flor. Dan.* 396.

ANTHOINE, **NICHOLAS**, in *Biography*, was born at Brien in Lorraine, of Roman Catholic parents, and educated in the college at Luxemburg, and also under the Jesuits at Triers and Cologne. Conceiving a dislike to the church of Rome, he embraced the Protestant religion; and such was his zeal in his new profession, that he endeavoured to proselyte his relations. In pursuing his theological studies, he became a convert to Judaism, and solicited the Jews in several cities to admit him among them as a proselyte, but his application was ineffectual. Returning to Geneva, he made an external profession of Christianity, but privately performed his devotions as a Jew. He was at length admitted into the ministry of the reformed church; and appointed by the synod of Burgundy, to be minister of the church of Divonne in the country of Gex. Here he was suspected, and became insane; but upon the recovery of his understanding, he was committed to prison. After some time, he was brought to his trial; upon which he avowed himself a Jew, and besought God that he might die in the Jewish religion. The result was his condemnation by the council, who, in 1632, sentenced him to be strangled and burnt; and he was executed on the day of his condemnation. His sentence expressed, that "laying aside all fear of God, he was guilty of apostacy and high treason, having opposed the Holy Trinity, denied our Lord and Saviour Jesus Christ, blasphemed against his holy name, renounced his baptism to embrace Judaism and circumcision, and perjured himself, which are great and horrid crimes, &c." Anthoine left several pieces written with his own hand, such as several prayers, that are said to be composed in a strain of great devotion, though he introduces in them no mention of Jesus Christ; a small paper, containing eleven philosophical objections against the Trinity; a confession of his faith in twelve articles, which are as follow. *viz.* that there is only one God, without distinction of persons;—that there is

no other way of salvation, without fulfilling the law of Moses;—that circumcision is of perpetual obligation, and also the sabbath, and also the distinction of clean and unclean meats;—that sacrifices will be restored, and the temple and city of Jerusalem rebuilt;—that the true Messiah is to come, and that he will be a glorious, holy, and just king, and restore the kingdom of Israel;—that there is no imputation of Adam's sin;—that there is no predestination, by which God has decreed to save some persons and to damn others, but that men shall be rewarded and punished according to their actions;—that no person can make satisfaction for us, but that if we sin there is room for repentance;—and that the New Testament is not agreeable to the Old. Gen. Dict.

ANTHOLOGION, a church-book in use among the Greeks. It was called *ανθολογιον*, q. d. *florilegium*, or a collection of flowers. The anthologion is a sort of breviary or mass-book, containing the daily offices addressed to our Saviour, the Virgin, and the principal saints; with other common offices of prophets, apostles, martyrs, pontiffs, and confessors, according to the Greek rite. See BREVIARY, MASS, and OFFICE.

ANTHOLOGY, **ANTHOLOGIA**, a discourse or treatise of flowers, or of beautiful passages from any authors. Thus called from *ανθος*, *flor*, a flower, and *λογος*, *sermo*, discourse; though others choose rather to derive it from *ανθος*, *flor*, a flower, and *λεγω*, I gather; and use it to signify a collection of flowers.

ANTHOLOGY is frequently used for a collection of epigrams of divers Greek poets.

ANTHOLYZA (*Ανθος*, a flower, and *λυσσα*, madness), in Botany, Lin. Gen. 58. class *triandria monogynia*; natural order *enfata*; and *irides* of Jussieu.

Generic Character. Calyx, spathes two-valved, alternate, imbricated, permanent; corolla, petal one, gradually dilated, from the tube into a compressed ringent throat; upper-lip straight, slender, very long, furnished with two short divisions at the base; under-lip shorter, trifid; stamina, filaments long, slender, under the upper lip; antheræ acute; pistillum, germen inferior; style filiform; stigma trifid, capillary, reflex; per. capsule roundish, three-cornered, three-celled, three-valved; seeds many, triangular.

Ess. generic Character. Cor. tubular, irregular, recurved; caps. inferior.

Species. 1. *A. ringens*, narrow-leaved antholyza, with lips of the corolla divaricated, throat compressed; it grows two feet high, producing red flowers cut into six unequal segments, and appearing in June; cultivated by Mr. Miller in 1759. 2. *A. plicata*, plaited-leaved antholyza, with leaves plaited; stem branching hirsute; corolla ringent, shorter than the stamina; a native of the Cape, and discovered by Thunberg and Masson. 3. *A. cunonia*, scarlet-flowered antholyza, with corolla somewhat butterfly-shaped, the two outer lobes of the five-parted lip broader and ascending. Miller, fig. 113. and Bot. Magazine, 343. A native of the Cape and Persia; cultivated by Miller in 1756; it flowers in May and June. 4. *A. ethiopica*, broad-leaved antholyza, with corolla incurvate; the two alternate lobes of the five-parted lip spreading, large, lanceolate: its flowers are scarlet, and appear in May and June; cultivated by Mr. Miller in 1759. This and the preceding species very much resemble the gladiolus. 5. *A. meriana*, red-flowered antholyza; with corolla funnel-shaped; leaves linear sword-shaped: the flowers have long tubes, of a copper colour on the outside, but of a deeper red within; appearing in April or May. Bot. Magazine, 418. Cultivated by Miller in 1756. See fig. 276, Miller. 6. *A. meriana*,

dwarf antholyza, with corolla funnel-shaped, leaves linear; the flowers are of a pale red, larger than those of the preceding species. Curt. Bot. May 411. The seeds were brought from the Cape in 1754. Both this and the *meriana* differ much from all the other species of antholyza, and ought perhaps to constitute another genus. 7. *A. lucidior*, with radical leaves filiform at the base, broad, tubulate, furrowed at the top; stem simple, leafy, spiked, a foot and a half high; flowers oblong, a little bent, purple above, cut into six unequal lanceolate parts. This, as well as the other six species, are natives of the Cape of Good Hope.

Propagation and Culture. As these are very ornamental plants, much attention has been given to their cultivation. They do not always ripen their seeds in this country, and are therefore frequently propagated by offsets, which their bulbous roots send forth in great abundance. Miller says, "the seeds should be sown soon after they are ripe, for if they are kept out of the ground till the following spring, they often miscarry, or at least remain a year in the ground before they grow. If the seeds are sown in pots of light earth, and plunged into an old bed of tan, which has lost its heat, and shaded in the middle of the day in hot weather, the seeds will come up the following winter; therefore they must be kept covered with glasses to screen them from cold, otherwise the young plants will be destroyed. These may remain in the pots two years, if the plants are not too close, by which time they will have strength enough to be planted each into a separate small pot filled with light earth. The time for transplanting these roots is in July or August, when their leaves are decayed. In summer, the pots may be placed in the open air, but in winter they must be removed and placed under a hot-bed frame, for they are not very tender; but where any damp arises, it is very apt to occasion a mouldiness upon their leaves. The roots shoot up in autumn, and the flowers begin to appear in May; the seeds ripen in August, and soon after their leaves and stalks decay: the roots may then be taken up, and kept six weeks or two months out of the ground, so that they may be easily transported from one country to another at that time." See Martyn's Miller's Dictionary.

ANTHON, in Geography. See VILLETTE D'ANTHON.

ANTHONY, FRANCIS, in Biography, the son of — Anthony, goldsmith, who held a lucrative place in the Jewel Office under queen Elizabeth, was born in London in the year 1550. After passing through the usual steps, he was sent to Cambridge, where he graduated in the year 1574. Having applied himself diligently to the study of medicine, particularly of chemistry, and invented a panacea, which he called Aurum Potabile, he returned to London, and commenced practitioner of physic, but without obtaining a licence from the College. He was therefore summoned before them, and interdicted practising, Goodall says, for incapacity; and on his proving refractory, was committed by them to the Compter-prison. He was, however, soon after released, on his submitting to the college, and paying them a fine of five pounds. Two years after, Dr. Taylor and two other members of the college, accused him of occasioning the death of sundry persons, to whom he had given his medicine. Against this charge he defended himself, in 1610, by a work intitled, "Medicinæ Chymicæ et veri Potabilis Auri assertio," "by no means (Aikin says) devoid of learning and art, although in the present state of chemistry and medicine, it would be thought destitute of solidity." This was answered by Dr. Matthew Gwynne, in a tract called "Aurum non Aurum, sive adversaria in assertorem Chymicæ, sed veræ Medicinæ desertorem Fran. Anthonium." It is curious to find this

this writer calling upon the king to prohibit the sale of the medicine, lest the business of the physician, surgeon, and apothecary should be ruined. This at least shewed it possessed considerable efficacy. This produced from the inventor, in 1616, an apology in defence of his medicine, written in English, in which, besides some popular arguments in favour of the idea of an universal medicine, there is a large collection of attested cures. He had now acquired such a degree of popularity, and so many powerful protectors, that the College did not think it prudent, it would seem, to prosecute him farther. He is said to have been liberal to the poor, and to have lived hospitably in his house in Bartholomew-cloze, where he died, aged 74, on May 26th, 1623. There is a monument erected to him and his son John, who succeeded him in the sale of his medicine, in the church of Bartholomew the Great, in London. Charles, his second son, removed to the town of Bedford, where he practised physic with considerable reputation and success.

ANTHONY, or *Antony*, St. the first institutor of the monastic life, was born at Coma, a village of Egypt, in the lower parts of the Thebais, in the year 251 (252, Cave). Some have said, that though born of wealthy parents, he was wholly illiterate; while others affirm, that he could read and write in the Coptic, which was his native tongue. At the age of 18, he was left in possession of a large estate, which, under the impulse of a fanatical spirit, he sold, distributing the produce of it among the poor, and devoting himself to religion in a state of solitude and poverty. After a long and painful noviciate among the tombs, and in a ruined tower, he boldly advanced into the desert, three days' journey to the eastward of the Nile, discovered a lonely spot, which possessed the advantages of shade and water, and fixed his last residence on Mount Colzim, near the Red Sea; where an ancient monastery still preserves the name and memory of the saint. Before his settlement at Colzim, and during the persecution of Maximin, in the year 311, he left his solitary retreat, and visited Alexandria, for the purpose of administering consolation to those who were suffering in the Christian cause. During the latter part of his life, in the year 355, he took another journey to this city, at the request of Athanasius and other Catholic prelates, to assist them in defending the faith against the Arians; where he is said to have supported his fame with discretion and dignity. Declining to accept an invitation from the emperor Constantine to visit Constantinople, he returned to his cell, and there lived to the advanced age of 105 years. The venerable patriarch beheld the numerous progeny, which had been formed by his example and lessons to that kind of monastic seclusion and mortification, which superstition may deem meritorious, but which an enlightened and benevolent philosophy must pronounce absurd and mischievous. The prolific colonies of monks multiplied with rapid increase on the sands of Libya, upon the rocks of Thebais, and in the cities of the Nile. To the south of Alexandria, the mountain and adjacent desert of Nitria were peopled by 5000 anachorets; and the traveller may still investigate the ruins of 50 monasteries, which were planted in that barren soil by the disciples of Anthony. But "what honour can be due to the memory of the fanatic who laid the foundation of an institution, which has alienated millions of human beings from the first duties and the first enjoyments of society?" Anthony left his cloak to Athanasius, and his hair-cloth to two brethren who were with him at his death. Seven letters, written originally in Egyptian, and translated into Latin, abounding more with piety than eloquence, with some other pieces, ascribed to this proto-monk, may be found in the "Bibliotheca Patrum." Cave's

Hist. Lit. vol. i. p. 220. Gibbon's Hist. vol. vi. p. 241, &c. See MONK.

ANTHONY, *St. of Hainault*. The order of St. Anthony in Hainault, was instituted by Albert, duke of Bavaria and earl of Hainault, Holland, and Zealand, in 1382, on designing an expedition against the Turks and Moors. The ensign of the order was a collar of gold made like an hermit's girdle; at the centre thereof hung a crutch, and a small bell of gold.

ANTHONY, *St. of Æthiopia*. The order of St. Anthony in Æthiopia. After the death of St. Anthony the hermit, who died in 357, many of his disciples remaining near Æthiopia, followed his example and manner of life; and their successors lived in great austerity in the desert, and were called Anchorites till the year 370; when John, emperor of Æthiopia, erected them into a religious order of knighthood, under the title and protection of St. Anthony, patron of his empire. Being thus instituted, they received St. Basil's rule, and lived in monasteries; their habit was black, with a blue Cross Tau. Philip VII. son to the *Founder*, enlarged their lands and privileges, and added a bordure of gold to the badge of the blue cross. In Italy, France, and Spain, there was formerly a sort of monks that had the title of Knights of St. Anthony, which observed the rule of St. Augustine, and they wore a plain cross like that in Æthiopia; but the principals of those wore a double St. Anthony's cross of blue satin, the one above the other. Their chief seat was at Vienne in Dauphine, of which place the General of the Order bore the title of abbot; the monastery being erected, in 1207, in honour of St. Anthony, whose body was translated thither from Constantinople. The badge of this order was a Cross flowery azure, the base point thereof couped, and the whole edged with gold.

The friars of this order came into England in the reign of king Henry III. and had one house at London, and another at Hereford.

It is said that, in some places, these monks assume to themselves a power of giving, as well as removing the *ignis sacer*, or ERYSIPELAS; a power which is usefully employed for keeping the poor people in subjection, and extorting alms.

ST. ANTHONY'S *Fire*. See ERYSIPELAS.

ANTHONY, *St. Island of*, in *Geography*, the most northern of all the Cape Verd islands, lying in N. lat. 18°, and divided from St. Vincent by a clear and navigable channel, about two leagues broad. This island stretches from north-east to south-west, and abounds with high mountains, whose tops are constantly covered with snow, and generally hid in the clouds. On the north side is a good road for shipping, and a supply of fresh spring water. The inhabitants are chiefly Negroes, amounting in number to about 500, under the protection of the Portuguese. The island produces a variety of fruits, oranges, lemons, palms, melons, bacovas, pomegranates, and the sugar-cane. The potatoes and melons are particularly excellent, and much sought after by mariners.

ANTHONY *Cave's Island*, an island in the Pacific Ocean. S. lat. 3° 10'. E. long. 152° 50'.

ANTHONY'S *Falls*, St. lie in the river Mississippi, about ten miles north-west of the mouth of St. Pierre river, which joins the Mississippi from the west, and are situated in N. lat. 44° 50'. They were so named by father Louis Hennipin, who travelled into those parts about the year 1680, and was the first European ever seen there by the natives. The whole river, 250 yards wide, falls perpendicularly above 30 feet, and forms a very agreeable cataract. The rapids below, in the space of about 300 yards, render the descent apparently greater, when viewed at a distance. In the middle of the falls is a small island, about 40 feet square, in which

grow a few hemlock and spruce trees. These falls are so peculiarly situated, that they may be approached without any intervening hill or precipice; and the scene around them is uncommonly beautiful. At a little distance below the falls is a small island, about $1\frac{1}{2}$ acre, on which grow a great number of oak trees, all the branches of which are loaded, at the proper season, with the nests of eagles, where they are secure from the attack both of man and beast.

ANTHONY'S Kill, a western water of Hudson's river; the mouth of which is seven miles above that of Mohawk river, with which it likewise communicates at the east end of Long Lake.

ANTHONY'S Nose, a point of land in the highlands, on Hudson's river, in the state of New York; from which to Fort Montgomery on the opposite side, a large boom and chain was extended in the late war, at an expence of 70,000l. sterling. It was partly destroyed by general Clinton in 1777. This is also the name of a point of a mountain on the north bank of Mohawk river, about 30 miles above Schenectady. The stage road runs about this point.

ANTHOPHYLLUM, in *Natural History*, a species of MADREPORA, found in the Mediterranean. The stalk is simple and ovate; star terminal, hemispherical, and concave, with radiated lamellæ, which are thickest at the bottom. Gmelin, Esper, &c.

ANTHOPHYLLUM, is also a name given by Rumphius to madrepora ranea of Linnæus. *Vide Anthophyllum faxcum*. Rumpf. amb. vi. p. 245.

ANTHORA, in the *Materia Medica*, a medicinal plant, of the *aconite* kind, having yellow flowers, resembling helmets; growing chiefly on the mountains in Switzerland and Savoy. See **ACONITUM**.

This is otherwise called *antithora*, as being reputed an antidote against the *thora*; sometimes *aconitum salutaris*; in English, the *helmet-flower*.

The root, *anthora radix*, has been chiefly in use. It holds a place in the catalogues of the *Materia Medica*, but is not kept at this time in the shops. It is of a dusky brown without and whitish within, of a warm bitterish taste, and is reputed a cardiac and alexipharmic, much of the same qualities with **CONTRAYERVA** root; on which account some also denominate it the *German contrayerva*, though it now only obtains in a few officinal compositions.

ANTHORISMUS, in *Rhetoric*, denotes a counter definition or description of a thing.

Thus, if a plaintiff urge, that to take any thing away from another, without his knowledge or consent, is a theft; this is called *οπος*, or definition. If the defendant reply, that to take a thing away from another, without his knowledge or consent, provided it be done with design to return it to him again, is not theft; this is an *ανθορισμος*.

ANTHOS, in its original Greek, signifies flower; but by way of excellency is appropriated to rosemary, so as to express only that plant.

ANTHOSPERMUM (*Αθος* and *σπρισμα*, *flower-seed*), in *Botany*, Linn. Gen. 1164. Class, *polygamia dioecia*; natural order, *stellata*; and *rubiacea*, Juss.

Generic Character. MALE. *Calyx*, perianth one-leaved, conical, quadrifid beyond the middle; divisions ovate-oblong, revolute, obtuse; *corolla* none; *stamina*, filaments four, capillary, erect, the length of the calyx, inserted into the receptacle; *antheræ* twin, oblong, four-cornered, erect.

FEMALE. *Calyx* and *corolla* as in the male; *pisillum*, germen inferior, ovate, four-cornered; styles two, recurved; *stigmata* simple.

Essen. Generic Character. *Calyx* four-parted; *corolla* none;

stamina four; *pisillum* two; germ. inferior; male and female in the same, or a distinct plant.

Species. 1. *A. ethiopicum*, amber-tree: it bears male and hermaphrodite flowers on distinct plants; a beautiful ever-green shrub, with smooth polished leaves, which emit a very fragrant odour on being rubbed between the fingers. 2. *A. ciliare*, with root perennial, woody, much branched; leaves ciliated, narrow, lanceolate; flowers axillary, sessile. 3. *A. herbaceum*, with leaves six, polished; stem herbaceous. This has the appearance of a galium. All these species are natives of the Cape of Good Hope.

Propagation and Culture. All these plants may be easily propagated by cuttings during the summer months; they will take root in a border of light earth, provided they are watered and shaded as the season may require; or if these cuttings are planted in pots, and placed in a moderate hot-bed, they will take root sooner. Afterwards they should be taken up, and planted in pots filled with light sandy earth, and exposed to the open air till October, when they ought to be removed into the conservatory. See Miller's Dict. by Matya.

ANTHOXANTHON. See **RUMEX maritimus**.

ANTHOXANTHIUM (*Αθος* and *ξανθος*, *yellow flower*), Lin. Gen. 42. class, *diandria digynia*; natural order, *gramina*, or grasses.

Generic Character. *Calyx*, glume one-flowered, two-valved; valves ovate, acuminate, concave, the inner one larger; *corolla*, glume one-flowered, two-valved, of the length of the greater valve in the calyx, each valve emitting an awn from the lower part of the back, one of them jointed; *nectary* two-leaved, very slender, cylindrical; leaflets fubovate, embracing; *stamina*, filaments two, capillary, very long; *antheræ* oblong, forked at both ends; *pisillum*, germen oblong; styles two, filiform; *stigmata* simple; *pericarpium*, glume of the corolla grows to the seed; seed one, pointed at both ends.

Essen. generic Character. Glume two-valved, one-flowered; glume of the corolla two-valved, acuminate; seed one.

Species. 1. *A. odoratum*, sweet vernal grass, with spike oblong-ovate; flowers longer than the awn, on short peduncles. This is an early grass, and grows about a foot high; it may be easily distinguished from all the other grasses which are natives of this country, by having only two stamina; its fragrance is also very remarkable, giving that pleasant smell discovered in new-mown hay. See Eng. Botany, 647. 2. *A. indicum*, with spike linear; flowers sessile, shorter than the awn; culm, or stem, a foot high, jointed; leaves broad, short, spike very narrow: a native of the East Indies. 5. *A. erinitum*, with culm high, smooth; panicle long, spike-shaped; with awns long, spreading, loose: a native of New Zealand.

ANTHOXANTHUM aculeatum. See **CRYPISIS**.

ANTHOXANTHUM paniculatum. See **FESTUCA spadicca**.

ANTHRACIS, in *Natural History*, a word used for a gem by the ancients, but in several different senses; all which seem evidently to refer to the cat's eye, or *asteria* kind.

Many of the ancients also have called the **HEMATITES**, or blood-stone, by this name, because of its being of the colour of a burning coal.

ANTHRACOLITE (of Kirwan), in *Mineralogy*. See **COAL**.

ANTHRACOSIS, in *Surgery*, is a disease affecting the eye or its appendages, which more commonly bears the appellation of *Anthrax*, *Carbo*, or *Carbuncle*. This disorder may, however, be seated in any other external part of the body; and there is no good reason why its name should be altered, when it affects the eye. See **CARBUNCLE**.

ANTHRAX, in the *Natural History of the Ancients*, was a word used by the most early writers for the substance we now call pit coal, and *libanthrax*. Theophrastus plainly tells us, that the substance strictly and properly called *anthrax* (for they also knew a gem by the same name, used in a metaphorical sense) was an earthy fossile substance, which was broken in pieces to be used, and kindled well, and burnt almost like wood-coals, and was used by the smiths. See **COAL**.

ANTHRAX Morio, in *Entomology*, a name given by Scopoli to the musca morio of Linnæus. *Vide* Scop. ent. Carn. 971.

ANTHRAX, in *Surgery*, a circumscribed tumour seated in the common integuments, and readily becoming gangrenous. For a more particular description of this complaint, see **CARBUNCLE**, which is synonymous. The distinction which some persons have made between *anthrax* and *carbo* is not founded in nature.

ANTHRENUM, in *Entomology*, a genus of coleopterous insects in Gmelin's arrangement of the *Systema Naturæ*, comprehending seven species, *viz.* *pimpinellæ*, *serophulariæ*, *muscorum verbasci*, *vagus*, *glaber*, and *sufcus*. The character of the genus is, antennæ clavate; club solid; palpi unequal, filiform; maxilla membranaceous, linear, and two-cleft; lip entire.

ANTHRIBUS, a name given by Geoffroy to the *Cryptcephalus Cricceis* of Gmelin.

ANTHRISCUS, in *Botany*. See **CHÆROPHYLLUM** and **SCANDIX**.

ANTHROMETRICA machina. See **ANTHROPOMETRICA**.

ANTHROPODÆMON, in *Ancient Writers*, a demon conceived under the figure or appearance of man.

ANTHROPOGLOTTUS, in *Natural History*, something that has a tongue or speech resembling that of a man.

The parrot kind are denominated *anthropoglotti*, on account of their broad, thick and muscular tongues, by which they are enabled to speak, and to roll their meat from side to side under the edges of their bills.

ANTHROPOGRAPHIA, a description of man; more particularly of the structure of his body, and the parts thereof.

ANTHROPOLATRÆ, in *Ecclesiastical History*, a title given to the Nestorians, on account of their believing Christ to be a mere man, yet paying him the honour of a God.

ANTHROPOLATRIA, the paying divine worship or honours to a man. *Anthropolatria* is supposed by some to have been the most ancient species of **IDOLATRY**.

ANTHROPOLITES, in *Natural History*, a term denoting petrifications of the human body; as those of quadrupeds are called *zoolites*. See **PETRIFFACTION**.

ANTHROPOLOGY, compounded of *ἄνθρωπος*, *man*, and *λόγος*, *discourse*, a discourse or treatise upon man, or human nature; considered as in a sound or healthy state.

Anthropology includes the consideration both of the human body and soul, with the laws and effects of their union; as sensation, motion, &c.

It is particularly used, in *Theology*, for a way of speaking of God after the manner of men; by attributing human parts and passions to him; as eyes, hands, ears, anger, joy, &c. We have frequent instances of *anthropology* in holy scripture; by which we are only to understand the effect, or the thing which God does, as if he had hands, &c.

ANTHROPOMANCY, compounded of *ἄνθρωπος*, *man*, and *μανθία*, *divination*, a method of divination, performed by inspecting the *viscera* of a person deceased: the emperor Heliogabalus practised this method of divination. The same is related by Cedrenus and Theodoret of Julian II.

who, in his nocturnal sacrifices and magical operations, destroyed a number of young children, for the purpose of inspecting and consulting their entrails. The Scythians were addicted to this barbarous practice; and Strabo informs us, that it prevailed amongst the ancient inhabitants of Lusitania.

ANTHROPOMETRIA, a description of the human body, with its several parts and members, according to the three dimensions, length, breadth, and thickness, both considered in themselves, and comparatively to each other.

ANTHROPOMETRICA machina, a name which Sanctonius gave to his weighing-chair, contrived for measuring the quantity of *insensible PERSPIRATION*.

ANTHROPOMORPHIA, derived from *ἄνθρωπος*, *a man* and *μορφή*, *form*, in the Linnæan system of nature, a denomination formerly given to the primates class of animals which had the greatest degree of resemblance to the human form.

ANTHROPOMORPHITE, formed of *ἄνθρωπος*, *man* and *μορφή*, *shape*, in a general sense, one who attributes to God the figure of a man.

ANTHROPOMORPHITES, in *Ecclesiastical History*, were a sect of ancient heretics, who, taking every thing spoken of God in the scriptures in a literal sense, imagined he had real hands, feet, &c. The passage they chiefly insisted on was that in Genesis, where it is said, that God made man after his own image.

Even philosophers, for want of a better acquaintance with metaphysics, seem to have fallen into *anthropomorphism*, representing God much after the manner of a human soul, without considering the difference between a finite and infinite being; limited, and absolute perfections. Wolfius has laboured hard to avoid this rock, by having the difference still present to his mind, and proceeding according to the ancient rule, *Quæ de Deo dicuntur ἄνθρωποπαδως, ea intellige Θεοομοιωτως*.

The whole sect of Stoics held God to be corporeal: and, not to mention Tertullian, Lactantius and others among the fathers, Hobbes and his followers assert the same among ourselves. Leibnitz charges sir Isaac Newton and his followers with representing God under the conditions of a man; but with what justice it would be hard to say.

Those who held the contrary, *viz.* that God is incorporeal, and without any bodily form, the anthropomorphites branded by the name of *Origenists*, because Origen taught how to allegorize those expressions.

Epiphanius calls the *Anthropomorphites*, *Audiani*, or *Odiani*, from *Audius*, the supposed founder of the sect; who lived about the time of Arius, in Mesopotamia. St. Augustine calls them *Vadiani*.

This system was revived in the year 939.

ANTHROPOMORPHOUS, something that bears the figure or resemblance of a man. Naturalists give instances of anthropomorphous plants, anthropomorphous minerals, &c. These generally come under the class of what they call *lusus naturæ*, or inosfers.

Anthropomorphous stones make a species of those called figured stones.

ANTHROPOMORPHOUS, is an appellation more peculiarly given to **MANDRAGORA**, or mandrake.

ANTHROPOPATHY, compounded of *ἄνθρωπος*, *man*, and *πάθος*, *passion*, a figure, expression, or discourse, whereby some passion is attributed to God, which properly belongs only to man.

Anthropopathy is frequently used promiscuously with *anthropology*; yet, in strictness, they ought to be distinguished as the genus from the species. *Anthropology* may be understood of any thing human attributed to God; but *anthro-*

anthropopathy, only of human affections, passions, sensations, &c.

ANTHROPOPHAGI, compounded of the Greek *ανθρωπος*, *man*, and *φαγον*, *edere*, to eat, people who feed on human flesh.

The Cyclops, the Lestrygons, and Scylla, are all represented in Homer as anthropophagi, or man-eaters; and the female phantoms, Circe and the Syrens, first bewitched with a show of pleasure, and then destroyed. This, like the other parts of Homer's poetry, had a foundation in the manners of the times preceding his own. It was still in many places the age spoken of by Orpheus:

“When men devour'd each other like the beasts,
Gorging on human flesh.—”

Some remains of the usage subsisted much longer, even among the most civilized nations, in the practice of offering human sacrifices.

History gives us divers instances of persons driven by excess of hunger to eat their own relations. Others commence anthropophagi out of revenge and hatred; there are many instances of soldiers, who in the heat of battle have been carried to such excess of rage, as to tear their enemies with their teeth.

The violence of love has sometimes produced the same effect as the excess of hatred. The *Tapuii* eat the bodies of their friends and nearest relations to preserve them from worms and putrefaction, thinking they do not only hereby afford them an honourable grave, but even a new life, a kind of revivification in themselves. Artemisia did something like this, when she swallowed the ashes of her dead husband, Mausolus. Among the Eistedonian Scythians, when a man's father died, his neighbours brought him several beasts, which they killed, minced, and mixed up with the flesh of the deceased, and made a feast.

Among the Massageti, when any person grew old, they killed him and ate his flesh; but if the party died of sickness they buried him, esteeming him unhappy.

Idolatry and superstition have occasioned the eating more men, than both love and hatred put together. There are few nations but have offered human victims to their deities; and it was an established custom to eat part of the sacrifices they offered.

This practice has prevailed more or less in different parts of the globe, in more modern times. The Caribbees used to make eunuchs of their children, in order to fatten and eat them. Garcilasso de la Vega mentions a people in Peru, who were accustomed to fatten and eat the children produced by their female captives, whom they kept as concubines for that purpose; and when the mothers had done breeding, they themselves were killed and eaten. The virtues whereby the Tououpinambos believed they merited Paradise, were revenge, and eating abundance of their enemies. Herrera speaks of great markets in China, that were furnished wholly with human flesh for the better sort of people.

The Jagos, and the subjects of the great Macoco, are said to be anthropophagi. This prince is very powerful, having several kings for his vassals; his court is so numerous, that there are two hundred men butchered every day to supply the table; part of this number are criminals, the rest slaves furnished in the nature of tribute. See *ANSIKO*.

It appears pretty certain from Dr. Hawkesworth's Account of the voyages to the South Seas, that the inhabitants of the island of New Zealand, a country unfurnished with the necessaries of life, eat the bodies of their enemies. It appears also to be very probable, that both the wars and anthropophagia of these savages take their rise, and owe their

continuance, to irresistible necessity, and the dreadful alternative of destroying each other by violence, or of perishing by hunger. See vol. iii. p. 447, and seq. and vol. ii. p. 389, &c.

Mr. Marsden, in his account of Sumatra, informs us, that the Battas, a people of that island, are anthropophagi. They do not eat human flesh to satisfy hunger, because other food is wanting, or as a gluttonous delicacy, but as a mode of shewing their detestation of crimes by an ignominious punishment, and as an indication of revenge and insult to their enemies. The objects of this savage repal are the prisoners taken in war, and offenders convicted and condemned for capital crimes. When sentence is pronounced, the unhappy object is tied to a stake; and when mortally wounded by lances thrown at him by the assembled multitude, they rush upon him as in a rage, cut pieces from the body with their knives, dip them in a dish, previously prepared, of salt and lemon-juice, slightly broil them over a fire, and then swallow the morsels with a kind of savage enthusiasm. In some cases, they tear the flesh from the carcass with their mouths. Some say that they do not eat the bodies of their enemies slain in battle; but though the practice be not general, instances of it occasionally occur.

M. Petit has a learned dissertation on the nature and manners of the anthropophagi. Among other things, he disputes whether or not the anthropophagi act contrary to nature? The philosophers, Diogenes, Chryssippus, and Zeno, followed by the whole body of Stoics, held it a very reasonable thing for men to eat each other.

According to Sextus Empiricus, the first laws were those made to prevent men from eating each other, as had been done till that time. The Greek writers represent anthropophagia as universal before Orpheus. To shew farther, that anthropophagia is not contrary to nature, a modern author urges, that cats, dogs, rabbits, and other animals feed on each other. Pliny, after Aristotle, affirms, that swans eat each other; and the bees also eat their *nympha*, which are their young. The Dutch, in Nova Zembla, saw bears devour each other; and the like has been observed of the fish kind: the *tiburones*, according to Ovid, are caught with a hook baited with their own flesh. Leonardus Florentius having fed a hog with hog's flesh, and a dog with dog's flesh, found a repugnancy in nature to such food; the former lost all its bristles; the latter its hair; and the whole body broke out in blotches.

It may be said, that whether the dead body of an enemy be eaten or buried, is a matter perfectly indifferent; but whatever the practice of eating human flesh may be in itself, it certainly is, relatively, and in its consequences, most pernicious. It manifestly tends to eradicate a principle, which is the chief security of human life, and more frequently restrains the hand of the murderer, than the sense of duty, or the dread of punishment. If even this horrid practice originates from hunger, still it must be perpetual from revenge. Death must lose much of its horror among those who are accustomed to eat the dead; and where there is little horror at the sight of death, there must be less repugnance to murder. See some farther observations on this subject, equally just and ingenious, by Dr. Hawkesworth, *ut supra*.

Some carry their respect for dead bodies to a great length. M. Petit does not think it lawful for anatomists to dissect human bodies in order to learn their structure, except those of condemned criminals, and such as are denied the rites of burial. The Arabs went farther; notwithstanding all their curiosity, and desire to be acquainted with the human structure, they could never be induced to make one dissection; but were contented to borrow all their knowledge of this kind from the Greek physicians.

Some maintain it impossible, whatever precaution is used, to prevent the ingress of the parts of dead bodies into our food and drink. Add, that if we do not feed on our own species, we feed on plants and animals which derive a great part of their nutriment from us. Whence the impossibility of the RESURRECTION of the same body has been inferred.

ANTHROPOPHAGIA, the act or habit of eating human flesh.

This is pretended by some to be the effect of a disease, which leads people affected with it to eat every thing alike. Some choose only to consider it as a species of PICA.

The annals of Milan furnish an extraordinary instance of anthropophagia. A Milanese woman, named Elizabeth, from a depraved appetite, like what women with child, and those whose *menfes* are obstructed, frequently experience, had an invincible inclination to human flesh, of which she made provision by enticing children into her house, where she killed and salted them; a discovery of which having been made, she was broken on the wheel and burnt in 1519.

ANTHROPOSCOPIA, the art of judging or discovering a man's character, disposition, passions, and inclinations, from the lineaments of his body.

In which sense anthroposcopia seems to be somewhat more extensive than PHYSIOGNOMY, or METOPOSCOPY.

Otto has published an "*Anthroposcopia, sive judicium hominis de homine ex lineamentis est raris*."

ANTHROPOSOPHIA, the science of the nature of man, and his structure and composition, both internal and external.

In this sense, anthroposophia amounts to much the same with the medical *physiology* or *anatomy*.

ANTHROPOTHYSIA, in *Ancient Writers*, denotes the offering of human victims.

The anthropothyia was a frequent practice among the ancients. Some have imagined that the sacrifice of Abraham was the first instance. Many reasonings and disquisitions have been founded on this supposition; by which the severity of Abraham's trial is thought by some to have been somewhat exaggerated. Human sacrifices were in use among the Gentiles before that time; practised by kings as well as by private persons; nay by entire nations, as the Egyptians, Phœnicians, Canaanites, &c.

ANTHUMON, in the *Materia Medica of the Ancients*, a name given to the EPITHYMUM, or *dodder*, growing upon THYME.

ANTHUS, in *Ornithology*, a name by which Aldrovand and some other authors have called that species of the OENANTHE LOXIA, called the *chleris* or green finch.

ANTHYLLA, in *Ancient Geography*, a town of Egypt, situate, according to Herodotus, in a plain, nearly west of the Canopic branch, and north-west of Naucratis.

ANTHYLLIS. See ARENARIA, ASPALATHUS, CAMPHOROMA, CRESSA, EBENUS, POLYCARPON, POLYCNEMUM, SALSOLA, and TEUCRIUM.

ANTHYLLIS *Valentina*. See FRANKENIA.

ANTHYLLIS (*Ανθυλλίς*, *floris lanugo*, a downy flower), in *Botany*. Lin. Gen. 864. Juss. 355. Gærtn. 145. Class, *diadelphica decandria*; natural order of *papilionaceæ* or *leguminosæ*.

Generic Character. Calyx, perianth one-leaved, ovate-oblong, swelling, villose; the mouth five-toothed, unequal, permanent; *corolla* papilionaceous; banner longer than the wings, the sides reflex, claw the length of the calyx; wings oblong, shorter than the banner; keel compressed, of the length of the wings; *stamina*, filaments connate, rising; antheræ simple; *pisillum*, germen oblong; style simple; stigma

obtusè; *perianthium*, legume roundish, concealed within the calyx, very small, bivalve; *seeds* one or two.

Essen. generic Character. Calyx swelling; legume roundish, concealed.

Species. 1. *A. tetraphylla*, four-leaved anthyllis or kidney-vetch; with leaves pinnate, with four lobes; flowers lateral: an annual, the spontaneous growth of Spain and Italy; it flowers in the open border in July. Curt. Bot. Mag. 108. 2. *A. vulneraria*, kidney vetch, lady's-finger, with leaves pinnate, unequal; head double; root woody, perennial; stems decumbent, hairy; leaves lyrato-pinnate; flowers yellow. There is a variety with red flowers: a common native of Britain, flowering in July and August. This plant is recommended as an excellent pasturage for sheep. Figured in Eng. Bot. 104, and Flor. Dan. 988. 3. *A. montana*, mountain kidney-vetch, with leaves pinnate, equal; head terminal; flowers oblique; stems four to six inches high; flowers pale, streaked with a deep purple; they appear early, and the seeds ripen in July: a native of the south of Europe. 4. *A. cornicina*, with leaves pinnate, unequal; heads solitary; stem seven or eight inches high; flowers of a pale yellow colour, appearing in May and June: it is a native of Spain, annual. 5. *A. lotoides*, with leaves three-parted; calyces prismatic, fascicled, of the length of the legumes, half a foot high; leaves alternate, distant; flowers about nine, of a deep sulphur colour: a native of Spain, annual. 6. *A. Gerardi*, with leaves pinnate, unequal; peduncles lateral, longer than the leaf; heads leafless: grows wild on the sea coast of Provence. 7. *A. quinqueflora*, with leaves ternate, linear; head five-flowered; it bears yellow flowers: a native of the Cape of Good Hope. 8. *A. involuerata*, sub-herbaceous; with leaves ternate, stipuled, sword-shaped; flowers in a head, yellow: a native of the Cape. 9. *A. linifolia*, with leaves ternate, sessile, ensiform; flowers in a head: it rises eight feet high. 10. *A. barba jovis*, with leaves pinnate, equal, tomentose; flowers in a head Miller. t. 41. f. 2. A shrub ten or twelve feet high, bearing yellow flowers, which appear in June: a native of France, Spain, Portugal, &c. 11. *A. heterophylla*, with leaves pinnate; floral leaves ternate; a small shrub, bearing minute flowers in pairs: a native of Spain and Portugal. 12. *A. visiflora*, with leaves digitate-pinnate; calyces shaggy, viscous; head of five or six flowers, which are yellow: discovered at the Cape of Good Hope by Sparman. 13. *A. cystifoides*, downy-leaved anthyllis, with leaves ternate, unequal; calyx woolly, lateral; a low shrub with yellow flowers, appearing three or four together on the sides of the branches: a native of Spain and the South of France; cultivated by Miller in 1759. 14. *A. germanica*, lavender-leaved anthyllis, with leaves ternate, sub-peduncled; calyces naked; a shrub five or six feet high; flowers yellow, in small clusters at the side of the branches: a native of the most southern parts of Europe. 15. *A. erinacca*, prickly anthyllis, a spinose shrub, with simple leaves; it somewhat resembles gorse or whin: a native of Spain and Portugal; cultivated by Miller in 1759. 16. *A. tragacanthoides*, with leaves pinnate, equal, tomentose; petioles spinose; flowers in racemes. It has a shrubby stem about a span high, and bears purple flowers; a native of Mount Lebanon. 17. *A. indica*, with leaves pinnate, equal, smooth, racemes oblong, sub-terminating; a large shrub, with white flowers: it is a native of the mountains of CochinChina.

Propagation and Culture. Most of the herbaceous species may be propagated by seeds, sown either in the autumn or spring in a bed of light earth, and transplanted at a proper age in the place where they are to remain. The shrubby species are commonly propagated either by seeds or cuttings; if by seeds, they should be sown in the autumn in pots filled with light earth; and placed under a frame in winter, to protect:

protect them from frost. The following spring the plants will rise; and when they are strong enough to be removed, they should be each planted in a small pot filled with light earth, and placed in the shade till they have taken new root; after which, they may be put along with other hardy exotic plants, in a sheltered situation, till October, when they must be removed into shelter. See Miller's Gardener's Dict. by Martyn.

ANTHYLLOIDES. See SALSOLA.

ANTHYPNOICA, in the *Materia Medica*, medicines suited to dispel sleep.

ANTHYPOCHONDRIACA, medicines adapted to the cure of hypochondriasis.

ANTHYPOMOSIA, in *Ancient Writers*, an oath taken by a prosecutor or accuser, declaring that the absence of the party accused is not for any just cause, and therefore demanding that judgment may no longer be delayed on that account.

ANTHYPOPHORA, in *Rhetoric*, a figure whereby we covertly obviate a reason or objection.

In this sense anthypophora stands opposed to *hypophora*, e. gr. if the *HYPOPHORA* be, grammar is very difficult to obtain; the anthypophora may be, grammar is indeed a little difficult to obtain, but then its use is infinite.

ANTI, *Αντι*, is a preposition used in composition with several words in Greek, Latin, English, &c. in different senses. In English, it sometimes signifies before; as in *antichamber*, a place before the chamber. In which case it has the same meaning with the Latin *ante*, *before*.

Sometimes, again, it signifies *contrary*, or *opposite*; and is then derived from *αντι*, *contra*, *against*. In this latter sense, the word makes part of the name of various medicines, to denote some peculiar or specific virtue in them against certain diseases: such, e. gr. are *antivenereals*, *antiscorbutics*, *antinephritics*, &c.

The preposition is frequently, however, omitted on these occasions, without any alteration of the sense; as in *nephritics*, *arthritics*, *asthmatics*, &c.

ANTI, in *Matters of Literature*, is a title given to divers pieces written by way of answer to others, whose names are usually annexed to the *anti*.

See the *Anti* of M. Baillet; and the *Anti-Baillet* of M. Menage: there are also *Anti-Menagiana*, &c. Cæsar the dictator wrote two books by way of answer to what had been objected to him by Cato, which he called *Anti-Catones*; these are mentioned by Juvenal, Cicero, &c. Vives assures us, he had seen Cæsar's *Anti-Catones* in an ancient library.

ANTIAGES, a term used by some writers for the glands and kernels, more commonly called *TONSILS* and *ALMONDS of the ears*.

ANTIADIAPHORISTS, compounded of *αντι*, *contra*, *against*, and *αδιαφορος*, *indifferent*, opposite to the *ADIAPHORISTS*, a name given in the fourteenth century to the rigid Lutherans, who disavowed the episcopal jurisdiction, and many of the church-ceremonies retained by the moderate LUTHERANS.

ANTIANA, *Seczia*, in *Ancient Geography*, a town of Pannonia, placed by M. D'Anville north of Teutoburgium.

ANTIBACCHI, an island of the Red Sea.

ANTIBACCHIUS, in the *Ancient Poetry*, a foot, consisting of three syllables; the two first of which are long, and the third short.

Such are the words *κάνταρέ*, *σῆριζῆ*, *ἔλλῆνες*.

It is so called, as being contrary to the *BACCHIUS*, the first syllable whereof is short, and the two last long. Among the ancients, this foot is also denominated *Palimbacchius*, and

Saturnius; and, by some, *Proponticus*, and *Theffalrus*. Diom. III. p. 475.

ANTIBARBAROUS, a title given to several works levelled against the use of barbarous terms and phrases, chiefly in the Latin tongue.

Eratmus, Nizolius, and Cellarius, have published "*Antibarbara*" Noltemus has given us a Lexicon "*Antibarbarum*," consisting of observations made by the grammarians of late ages in relation to the purity and corruption of Latin words. Sixt. Amama has given an "*Antibarbarus Biblicus*," wherein he pretends to have discovered seven sources of the barbarisms which have been introduced in late ages into the BIBLE. Peter du Moulin used the title "*Antibarbarus*" for a book against the use of an unknown tongue in divine service.

ANTIBARIS, in *Ancient Geography*, a town of Servia, taken by Perigord, general of Manuel, emperor of Constantinople, in 1143.

ANTIBES, in *Geography*, a sea-port town of France, in the department of the Var, and chief place of a canton, in the district of Grasse. The place contains 5,270, and the canton 14,171 inhabitants; the territory includes 165 kilometres and 19 communes. In the first ages of Christianity, it was the see of a bishop, but removed by pope Innocent IV. to Grasse, in 1250, because the piratical Moors of Africa and Spain frequently sacked the town, and plundered the inhabitants. The harbour is small, nor is the trade considerable. N. lat. 43° 5'. E. long. 7° 50'.

ANTIBIBLOS, in the *Civil Law*, an instrument or signature, whereby the defendant owns he has received the libel, or a copy of it, and notes the day whereon he received it. This is usually done on the back of the LIBEL.

ANTICADMIA denotes a species of mineral CADMIA, sometimes also called *pseudo-CADMIA*.

It takes the denomination anticadmia, not as being opposite in quality to the cadmia, but because it is used as a substitute for it.

ANTICACHECTICA, in the *Materia Medica*, medicines adapted to the cure of cachexy.

ANTICARDIUM, in *Anatomy*, &c. that hollow part under the breast, just against the heart, commonly called the pit of the stomach; called also *serobiculus cordis*.

The word is compounded of *αντι*, *contra*, *against*, and *καρδια*, *cor*, *heart*.

ANTICASIUS, in *Ancient Geography*, a mountain opposite to Mount Calius, at no great distance from Antioch.

ANTICATARRHAL, an epithet given to medicines prescribed for catarrhs.

ANTICATEGORIA, in *Oratory*, denotes a recrimination or mutual accusation; where the two parties charge each other with the same crime.

Apollodorus considers the anticategoria as two several causes or actions.

ANTICAUSOTICS, among *Physicians*, denote medicines against burning fevers. In this sense, Juncker has given the description of anticausotic syrup.

ANTICHAMBER; see ANTECHAMBER.

ANTICHORUS, in *Botany*; class *ostandria monogynia*; natural order of *columnifera* and of *tiliaceæ* of Juss. Lin. Gen. Reich n. 508. Juss. 250.

Generic Character. Calyx, perianthium four-leaved, very much expanded; leaflets lanceolate, acuminate, deciduous; corolla, petals four, obovate, obtuse, the length of the calyx; *stamina*, filaments setaceous, erect, shorter than the corolla; antheræ roundish; *pyllium*, germen superior, ovate; style cylindrical; stigma obtuse; *pericarpium*, capsule subulate four

four-celled, four-valved; seeds very many, truncated, in four rows.

Essential generic character. Calyx four-leaved; petals four; capsule superior, four-celled, four-valved; seeds very numerous. There is only one species of this genus, viz. *A. depressus*, which is a small procumbent annual, not exceeding three or four inches long, with alternate branches, bearing yellow flowers: it is a native of Arabia.

ANTICHRESIS, in the *Civil Law*, a covenant or convention, whereby a person borrowing money of another engages or makes over his lands or goods to the creditor, with the use and occupation thereof, for the interest of the money lent. This covenant was allowed of by the Romans, among whom usury was prohibited: it was afterwards called MORT-GAGE, to distinguish it from a simple engagement, where the fruits of the ground were not alienated, which was called *VIT GAGE*.

ANTICHRIST, compounded of *anti*, *contra*, *against*, and *χριστος*, *Christ*, in a general sense, denotes an adversary of Christ, or one who denies that the Messiah is come. In this sense, Jews, infidels, &c. may be said to be *Antichrists*.

The epithet, in the general sense of it, is applicable to any power or persons acting in direct opposition to Christ or his doctrine. Its particular meaning is to be collected from those passages of Scripture in which it occurs. Accordingly it may either signify one who assumes the place and office of Christ, or one who maintains a direct enmity and opposition to him. See bishop Hurd's *Introd. to the study of the Prophecies*, vol. ii. p. 10.

ANTICHRIST is more particularly used for a tyrant who is to reign on earth toward the end of the world: to make the ultimate proof of the elect: and to give a signal instance of the divine vengeance, before the last judgment.

The Bible and the fathers all speak of Antichrist as a single man; though they also assure us, that he is to have divers precursors, or fore-runners. Yet many Protestant writers apply to the Romish church, and the pope, who is at the head of it, the several marks and signatures of Antichrist enumerated in the Apocalypse; which would rather imply Antichrist to be a corrupt society, or a long series of persecuting pontiffs, than a single person: or, rather, a certain power and government, that may be held for many generations, by a number of individuals succeeding one another. The Antichrist mentioned by the apostle John, 1 Ep. ii. 18. and more particularly described in the book of Revelation, seems evidently to be the same with the *Man of sin*. &c. characterised by St. Paul in his second Epistle to the Thessalonians, chap. ii. And the whole description literally applies to the excesses of papal power. Had the right of private judgment, says an excellent writer, been always adopted and maintained. Antichrist could never have been; and when that sacred right comes to be universally asserted, and men follow the voice of their own reason and consciences, Antichrist can be no more.

A late writer (see Kett's *History, the Interpreter of Prophecy*, vol. ii.), after collecting the principal prophecies relating to Antichrist, infers from them, that a power, sometimes represented as the little horn, the man of sin, the Antichrist, the beast, the harlot, the star falling from heaven, the false prophet, the dragon, or as the operation of false teachers, was to be expected to arise in the Christian world to persecute and oppress, and delude the disciples of Christ, corrupt the doctrine of the primitive church, enact new laws, and establish its dominion over the minds of mankind. He then proceeds to shew, from the application of prophecy

to history, and to the remarkable train of events that are now (1799) passing in the world, how exactly popery, Mahometanism, and infidelity correspond with the character given in Scripture of the power of Antichrist, which was to prevail a certain time for the especial trial and punishment of the corrupted church of Christ. Upon this system, the different opinions of the protestants and papists, concerning the power of Antichrist, derived from partial views of the subject, are not wholly incompatible with each other. With respect to the commonly received opinion, that the church of Rome is Antichrist, Mede and Newton, Daubuz and Clarke, Lowman and Hurd, Jurieu, Vitringa, and many other members of the protestant churches, who have written upon the subject, concur in maintaining, that the prophecies of Daniel, St. Paul, and St. John, point directly to this church. This was likewise the opinion of the first reformers; and it was the prevalent opinion of Christians, in the earliest ages, that Antichrist would appear soon after the fall of the Roman empire. Gregory the Great, in the sixth century, applied the prophecies concerning the beast in the Revelation, the man of sin, and the apostacy from the faith mentioned by St. Paul, to him who should presume to claim the title of universal priest, or universal bishop in the Christian church; and yet his immediate successor, Boniface III. received from the tyrant Phocas the precise title which Gregory had thus censured. At the synod of Rheims, held in the tenth century, Arnulphus, bishop of Orleans, appealed to the whole council, whether the bishop of Rome was not the Antichrist of the apostles, "sitting in the temple of God," and perfectly corresponding with the description of him given by St. Paul. In the eleventh century, all the characters of Antichrist seemed to be so united in the person of pope Hildebrand, who took the name of Gregory VII. that Johannes Aventinus, a Romish historian, speaks of it as a subject in which the generality of fair, candid, and ingenious writers agreed, that at that time began the reign of Antichrist. And the Albigenses and Waldenses, who may be called the protestants of the twelfth and thirteenth centuries, expressly asserted in their declarations of faith, that the church of Rome was the whore of Babylon.

The papists imagine they view in the prophetic picture of Antichrist, imperial Rome, elated by her victories, exulting in her sensuality and her spoils, polluted by idolatry, persecuting the people of God, and finally falling like the first Babylon; whilst a new and holy city, represented by their own communion, filled with the spotless votaries of the Christian faith, rises out of its ruins, and the victory of the cross is completed over the temples of paganism. This scheme has had its able advocates, at the head of whom may be placed Bossuet bishop of Meaux, Grotius, and Hammond. Some writers have maintained, that Caligula was Antichrist; and others have asserted the same of Nero. But in order to establish the resemblance, they violate the order of time, disregard the opinions of the primitive Christians, and overlook the appropriate descriptions of the apostles.

It is observed by an ingenious writer, that the term "Antichrist" is used by the apostle John, and by no other sacred writer. He first mentioned it in a period which he called "the last hour;" and this, says he, can admit of no tolerable interpretation, except that of the last period of the Jewish state, just before the destruction of Jerusalem, when the Roman army was actually in Judæa. The apostle refers to some prophecy of Antichrist, who should appear before the dissolution of the Jewish state; "Ye have heard," from the gospels of Matthew, Mark, and Luke, "that Jesus, sitting

with his disciples, of whom I was one, on the mount of Olives, foretold the destruction of Jerusalem, and said, 'When ye shall see Jerusalem compassed with armies, then know that the desolation foretold by Daniel is nigh; and then false Christs shall arise, to seduce, if it were possible, even the elect.' Matt. xxiv. Mark, xiii. Luke, xxi. "Ye have heard that Antichrist shall come. Even now there are many Antichrists; whereby we know, that it is the last time." It was natural to ask, who these Antichrists were, and by what mark they who had not the gift of discerning spirits, as the apostles had, might know them? To this reasonable inquiry, the apostle answers by saying, "Every spirit that confesseth not that Jesus Christ is come in the flesh, is not of God; and this is that spirit of Antichrist, whereof you have heard that it should come, and even now already is it in the world." The sense of the apostle seems to be explained by himself in his second epistle, where he again describes an Antichrist. It was a teacher of a doctrine: it was a doctrine concerning Christ; but it was not the doctrine of Christ, which he himself taught. The doctrine of Christ had in it both the Father and the Son; but the doctrine of Antichrist, by not including both, had not God; that is, had not a right notion of the kingdom of God, either as it had been among the Jews, or as it was to be, after the coming of Jesus in the flesh, among both Jews and Gentiles; one dispensation of truth, virtue, and social love throughout the world. If it be inquired further, whence came these Antichrists? The apostle says, they were none of us, apostles; they went out from us. This must mean, that Antichristian teachers either withdrew from the apostles, or from the doctrine which they taught. It is too evident, that they did not withdraw from their persons; they followed them; they mixed in their churches; they taught there another gospel; they drew the attention of the people from virtue, and fixed it on ceremonies and secular glory. John calls Antichrist a deceiver; and by deceit this party prevailed. John foresaw the whole, and pointed out the place where this iniquity would fix its seat, and for ages try to conceal its ignorance and barbarity under such splendid ensigns of secular glory, as never fail to dazzle, to intoxicate, and to enervate mankind. When Rome boasts of her antiquity, she boasts of a true fact. There is a fine expression of Paul to the Galatians, which teaches readers to consider such Antichrists as abortives, exhibiting a sort of unformed Christianity. Robinson's Hist. of Baptism, p. 625.

After the point had been maturely debated at the council of Gap, held in 1603, a resolution was taken thereupon to insert an article in the confession of faith, whereby the pope is formally declared to be Antichrist. Pope Clement VIII. was stung to the life with this decision; and even king Henry IV. of France was not a little mortified, to be thus declared, as he said, an imp of Antichrist.

F. Malvenda, a Spanish Jesuit, has published a large and learned work, *De Antichristo*, in thirteen books. In the first he relates all the opinions of the fathers with regard to Antichrist. In the second, he speaks of the time when he shall appear; and shews, that all the fathers, who supposed Antichrist to be near at hand, judged the world also was near its period. In the third, he discourses of his origin and nation; and shews, that he is to be a Jew, of the tribe of Dan: this he founds on the authority of the fathers, on that passage in Genesis xlix. *Dan shall be a serpent by the way*, &c. on that of Jeremy viii. 16. where it is said, *The armies of Dan shall devour the earth*; and on the Apocalypse, chap. vii. where St. John, enumerating all the tribes of

Israel, makes no mention of that of Dan. In the fourth and fifth books, he treats of the signs of Antichrist. In the sixth, of his reign and wars. In the seventh, of his vices. In the eighth, of his doctrine and miracles. In the ninth, of his persecutions; and, in the rest, of the coming of Enoch and Elias, the conversion of the Jews, the reign of Jesus Christ, and the death of Antichrist, after his having reigned three years and a half.

Hippolitus, and others, held that the devil himself was the true Antichrist; that he was to be incarnate, and make his appearance in human shape before the consummation of things.

How endless are conjectures! Some of the Jews, we are told, actually took Cromwell for Christ, while some others have laboured to prove him Antichrist himself. Passius assures us he saw a folio Book in the Bodleian library, written on purpose to demonstrate this latter position.

ANTICHRISTIANISM, a state or quality in persons or principles, which denominate them *Antichristian*, or opposite to the kingdom of Christ, and the genius and spirit of his religion.

ANTICHRISTIANS properly denote the followers or worshippers of Antichrist.

ANTICHRISTIANS are more particularly understood of those who set up, or believe in a false Christ, or Messiah.

ANTICHTHON, in its primitive astronomical sense, denotes a kind of globe or earth resembling ours, and like it supposed to be moving round the sun, but invisible to us, because on the opposite side of the sun, that luminary is still exactly interposed between this other earth and ours.

In this sense it is, that Pythagoras and his disciples asserted an antichthon; for which we have the testimonies of Aristotle, Plutarch, &c.

By reason of the perfection of the number ten, they concluded there must be just so many spheres; and as our senses only discover nine, viz. the seven planets, the sphere of the fixed stars, and our earth, they imagined a tenth opposite to ours.

Some of the fathers, who endeavoured to accommodate the doctrine of the heathen philosophers to those of Christianity, assert that this Pythagorean earth is no other than the heavens of the righteous.

Thomasius has a dissertation on the Pythagorean antichthon.

ANTICHTHONES, in *Geography*, are those people who inhabit countries diametrically opposite to each other.

The word is compounded of *επι*, *contra*, and *χθων*, *terra*, *earth*. They are sometimes also called, by Latin writers, *antigenæ*.

In which sense, antichthones amount to much the same with what we more usually call *antipodes*.

ANTICHTHONES is also used, in *Ancient Writers*, to denote the inhabitants of contrary hemispheres.

In which sense antichthones differs from *antocci*, and *antipodes*.

The ancients considered the earth as divided by the equator into two hemispheres, the northern and southern; and all those who inhabited one of those hemispheres, were reputed antichthones to those of the other.

ANTICIMOLIS, or ANTICINOLIS, in *Ancient Geography*, a small island of the Euxine sea, situate opposite and near to the town of Cimolis or Cinolis, on the northern coast of Paphlagonia, to the east of the mouth of the river Æginetis.

ANTICIPATION, from *ante*, *before*, and *capio*, *I take*,
the

the act of preventing, or being before-hand with a person or thing; or of doing a thing before the time.

Anticipating a payment, denotes the discharging it before it falls due.

ANTICIPATION is also used, in a *logical* sense, for a presumption, prejudice, or preconceived opinion.

This is also denominated *preconception*, *presentation*, or *instinct*.

ANTICIPATION, in a *medicinal* sense, is applied to diseases, wherein some of the symptoms which regularly belong to some future period, appear in the beginning; or the word may be understood of those diseases, which having their accesses and remissions at stated hours, gain in point of time, and finish their period sooner than ordinary.

In this sense, *anticipation*, or *anticipated* diseases, by the Greeks called *προληπτικοι*, stand opposite to *υστερητικοι*, which come after the time.

ANTICIPATION, in the *Epicurean Philosophy*, denotes the first idea, or definition of a thing, without which we can neither name, think, doubt, or even inquire, concerning it.

This is otherwise denominated *PRENOTION*.

Anticipation, in this sense, makes the second of Epicurus's criterions of truth.

ANTICIPATION is also used by Shaftsbury, in speaking of painting, to denote the expression of some future action, resolution, or the like.

ANTICIPATION. This word, and *suspension*, in speaking of discords, were first used as technical terms, in *Music*, we believe, by Rameau; and as they are English words as well as French, they may be usefully adopted.

A sound is said to be *anticipated*, when a composer wishes a note to be heard before its time, in plain counterpoint. The same passage will explain both these terms. *Anticipation* in the treble, requires suspension in the base, and *à contra*.

The image shows two staves of music. The top staff is labeled 'Anticipation' and the bottom staff is labeled 'Suspension'. Both staves show a sequence of notes with a final note that is either anticipated or suspended relative to the other staff.

There are several kinds of *anticipation* in music: first, in passing-notes, of which no notice is taken in the base; but this must be done diatonically, not by distant intervals or leaps. Secondly, when the chord is struck on a rest, before the base. Thirdly, in serious and fundamental discords that are to be regularly prepared and resolved, the anticipation in the treble is striking the second before it becomes a third, by the descent of the base. And *anticipation* in the base, or inferior parts, is when the base rises before the treble falls; as from the eighth to the seventh, or tenth, (octave of the third,) to the ninth. The following are examples, in notation, of the several kinds of *anticipation*, in treble and base. See *SUSPENSION*.

Anticipation by Passing-Notes, or which no notice is taken in the Bass.

Passing-Notes in the Bass, unnoticed in the Treble.

Passing-Notes in the Treble.

Passing-Notes in the Bass.

Anticipation. Suspension.

Suspension. Anticipation.

See *PASSING-NOTES*.

ANTICIPATION, in *Rhetoric*, a figure otherwise called PROLEPSIS.

ANTIQU, in *Sculpture* and *Painting*, denotes a fantastical composition of figures of different natures, sexes, &c. as men, beasts, birds, flowers, fishes, and even things merely imaginary, or which have no existence in the nature of things.

Antiqu amounts to much the same thing with what the Italians call *grotesco*, and the French *grotesque*.

ANTICLIMAX, from *anti*, and *κλιμαξ*, *gradation*, in *Rhetoric*, is a figure, whereby the progress of a discourse descends from great to little, and this is sometimes regarded peculiarly agreeable by such a concord between the sense and sound as may contribute to make diminutions appear still more diminutive. Horace affords a striking example.

“Panturient montes, nascitur ridiculus mus.”

ANTICNEMION, from *anti*, and *κνημιον*, *tibia*, the *shin-bone*, in *Anatomy*, denotes the shin, or the fore prominent part of the *tibia*.

This is otherwise called *αεχιβα*, by the Latins *prima tibia*, or *anterior tibia*, and stands opposed to the *fura*, or calf of the leg, sometimes called *ocrea*.

ANTICOLICA, in the *Materia Medica*, medicines suited to cure the colic.

ANTICOLIS, in *Ancient Geography*, a people of interior Lybia, according to Ptolemy.

ANTICONDYLI, a people placed by Stephanus Byz. in Bœotia, supposed by him to be originally Phrygians.

ANTICOSTI, in *Geography*, a barren uninhabited island, in the mouth of the river St. Lawrence. This island has no harbour, but is covered with wood, and excellent cod is found on the shores. N. lat. 49° 10' to 49° 52' W. long. 61° 42' to 64° 4'.

ATICRAGUS, in *Ancient Geography*, a mountain of Lycia.

ANTICTERIC Spirit, in *Pharmacy*, is obtained by distilling one ounce and a half of spirit of turpentine with half a pound of rectified spirit of wine, with a gentle heat; and then separating the oil that swims above in the receiver from the saturated spirit, which is to be preserved for use. Some have imagined, that this combination of oil of turpentine with ardent spirit will furnish a solvent for biliary calculi. Hence the origin of the name; but though this effect may be produced by a copious application to the calculi in a glass vessel, yet it is not to be expected when the spirit reaches them in the course of the circulation.

ANTICUM, in *Architecture*, a porch before a door; also that part of a temple which is called the outer temple, and lies between the body of the temple and the portico. It is sometimes called *ante*.

ANTICUS, *ferratus minor*. See SERRATUS.

ANTICUS, *peroneus*. See PERONEUS.

ANTICUS, *tibialis*. See TIBIALIS.

ANTICYRA, now ASPRO SPITIA, in *Ancient Geography*, a city in Phocis, in a small isthmus which joins a peninsula in the gulf of Corinth. Pausanias supposes, that this was the city called by Homer *Cyparissa*. This place was famous for its hellebore, and was resorted to by sick persons for the benefit of this medicine, which was prepared by an excellent recipe; and hence the adage, “*naviget Anticyram*,” Hor. Pliny relates, that the philosopher Carneades, and Livius Drusus, tribune of the people, availed themselves of this remedy. Pausanias distinguishes two kinds of hellebore, and says that it grew among the rocks which encompassed the city. This place was

adorned with many statues of brass. Above the port was a temple consecrated to Neptune; and this city had gymnasia, baths, and other curiosities, which Pausanias has particularly described. The inhabitants of Anticyra were twice driven from their city; once by Philip, son of Amyntas, and a second time by Titus Flaminius, the Roman general, as a punishment for their attachment to Philip king of Macedonia. Some traces of the buildings, from which it received its present name *Aspro-Spitia*, or white houses, still remain. The port, which is land-locked, is frequented by vessels for corn.

ANTICYRA was also a town of Greece, belonging to Thebais, near the mouth of the Spercheus, at an equal distance from Mount Oeta and the Maliac gulf. Strabo says, that its environs produced better hellebore than that of Anticyra in Phocis, but that the latter was prepared in a better manner.

ANTICYRA was also the name of another town belonging to the Western Locrians.

Some writers have mentioned an island of this name among those of the Ægean sea; but as neither Pliny nor Gellius mention its situation, there was probably no such island.

ANTIDACTYLUS, from *anti*, and *δακτυλος*, *dactyle*, in *Poetry*, a name given by some to a kind of poetical foot, which is the reverse of a dactyl, as consisting of three syllables, whereof the first two are short, and the last long.

ANTIDÆMONICI, from *anti*, and *δαιμων*, *dæmon*, in *Ecclesiastical History*, a sect who denied the existence of devils or evil spirits; also all spectres, incantations, witchcrafts, &c.

ANTIDALEI, in *Ancient Geography*, a people placed by Pliny in Arabia Felix.

ANTIDESMA, from *anti*, and *δεσμος*, *vinculum*, excellent for making ropes, in *Botany*, class *dicoccia pentandria*, Linn. Gen. 1110. Gært. 39. *Gen. character*, male; *calyx* p. five-leaved; *leaflets* oblong, concave, *corolla* none; *stamina*, filaments five, capillary, longer than the calyx, equal; *antheræ* roundish, semibifid. Female, *calyx* as in the male, permanent; *corolla* none; *pisfil* germen superior, ovate; *style* none; *stigmata* five, obtuse; *perianthium* a drupe roundish, one-celled, crowned with the stigmata, and having a furrowed shell; *seed* none. *Species* 1. *A. alexiteria*, a middle-sized tree, with leaves resembling those of the lemon, ever-green flowers in racemes; fruit red and acid like the barberry: it is common in Malabar, where its fruit is esteemed for its pleasant cooling quality; the bark is used for making ropes. 2. *A. acida*, leaves obovate, spikes solitary, and either axillary, or terminating very short lateral branches. It is a native of the East Indies. 3. *A. scandens*, leaves palmate, ferrate; stem climbing without tendrils; filaments of the male flowers short, terminated by erect antheræ, gaping at the tip. A native of China, near Canton.

ANTIDICOMARIANITES, from *αντιδικος*, *adversary*, and *Μαρια*, *Mary*, in *Ecclesiastical History*, a sect of ancient Christians who thought that the Holy Virgin did not preserve a perpetual virginity, but that she had several children by Joseph after our Saviour's birth.

These are otherwise called *anticommaritæ*; and *anticommarites*, and *anticommarianists*; sometimes also *antimariani*. The opinion was grounded on some expressions of our Saviour, wherein he mentions his brothers and his sisters; and on that text of St. Matthew, wherein he says, that Joseph knew not Mary till she brought forth her first-born son.

The anticommarianites were the disciples of Helvidius and Jovinian, who appeared in Rome towards the close of the fourth century.

ANTIDINICA, in the *Materia Medica*, medicines suited to cure giddiness.

ANTIDORON, in *Ecclesiastical Writers*, a name given by the Greeks to the consecrated bread, out of which the middle part, marked with a cross, wherein the consecration resides, being taken away by the priest, the remainder is distributed, after mass, to the poor.

On the sides of the antidoron are impressed the words, *Jesus Christus vicit*. The word is formed from *δορον*, *donum*, a gift, as being given away *loco muneris*, or in charity. The antidoron is also called *panis presanctificatus*.

Some suppose the antidoron to be distributed in lieu of the sacrament, to such as were prevented from attending in person at the celebration; and thence derive the origin of the word, the eucharist being denominated *doron*, *gift*, by way of eminence.

ANTIDOSIS, from *αντι*, and *δίδωμι*, *I give*, in *Antiquity*, denotes an exchange of estates, practised by the Greeks on certain occasions with peculiar ceremonies, and first instituted by Solon.

When a person was nominated to an office, the expence of which he was not able to support, he had recourse to the antidosis, that is, he was to seek some other citizen of better substance than himself, who was free from this and other offices; in which case the former was excused. In case the person thus substituted denied himself to be the richest, they were to exchange estates, after this manner: the doors of their houses were close shut up and sealed, that nothing might be conveyed away; then both took an oath to make a faithful discovery of all their effects, except what lay in the silver mines, which by the law was excused from all imposts: accordingly, within three days, a full discovery and exchange of estates were made. Potter, *Archeol. lib. i. cap. 15*.

ANTIDOTARY is used by some writers for what we more usually call a **DISPENSATORY**.

We have *antidotaries* extant of several authors, as those of Nicolaus, Meuse, Myrepsus, Rhafis, &c.

ANTIDOTE, a remedy taken either to prevent or cure some contagious, malignant, or other dangerous disease. The word is borrowed from *αντι*, *against*, and *δίδωμι*, *I give*, as being something given against poison, either by way of cure or preservative.

ANTIDOTE, is also used to signify a medicine taken to prevent the ill effects of some other; for instance, poison.

In which sense the word has the same signification with alexipharmic, alexiterial, and counterpoison.

The Indian physic consists much in the use of antidotes, *viz.* the root *mungo*, and the viper stone; both held sovereign against the bite of the *cobras de capello*, and other venomous creatures.

ANTIDOTE is also used, in a more general sense, for any compounded medicine.

In which sense, Peter Damian speaks of a person who in his whole life never took an antidote.

ANTIDOTE is also used in a less proper sense for any remedy against any disease, chiefly if it be inveterate, and arise from some ulcer or abscess.

ANTIDOTE is also used for a perpetual form of medicines, otherwise called *opiates*, or more properly **CONFECTIONS**.

ANTIDOTE is also *mystically* applied to the philosopher's stone.

ANTIEN. See **ANCIEN**.

ANTIDYSENTERICA, in the *Materia Medica*, medicines suited to cure dysentery.

ANTIETAM CREEK, in *Geography*, a creek of America in Maryland, rises by several branches in Pennsylvania, and empties into Potowmac river, three miles south-south-east from Sharpsburgh. Elizabeth and Frank's towns stand on this creek; and it has also a number of mills and forges.

ANTIFEBRILIA, in the *Materia Medica*, medicines suited to cure fever.

ANTIGARECA, in *Geography*, an island near the west coast of the peninsula of India, in the tract called "the Pirate's Coast;" 10 leagues north of Gharia.

ANTIGENIDES, in *Biography*, a famous musician of antiquity, was, according to Suidas, a native of Thebes in Bœotia, and the son of Satyrus, a celebrated flute-player, who, as we are informed by Ælian, was so charmed with the lectures of Aristotle, that, upon retiring from them, he said, "If I do not break my flute, I hope I shall have my head cut off." Antigenides, after the example, and by means of the instructions of his father, and also of Philoxenus, became eminent in the same art; and is said to have brought it to a greater degree of perfection than any musician of his time. Suidas says, that he was flute-player in ordinary to Philoxenus, and that he accompanied him in the musical airs which he had set to his own verses. He had also disciples of the first class who were attached to himself; and he was caressed by the most celebrated princes. Pericles invited him to Athens, and committed his nephew, Alcibiades, to his tuition in the art of flute playing. According to Athenæus, Antigenides played upon this instrument at the nuptials of Ipnierates, when that Athenian gentleman espoused the daughter of Cotys, king of Thrace; and Plutarch ascribes to him the power of transporting Alexander to such a degree, by his performance of the Harmatian air, at a banquet, that he seized his arms, and was on the point of attacking his guests. Highly, however, as he was esteemed, he regarded public favour as a precarious possession, and was never elated by the applause of the multitude. He endeavoured to inspire his disciples with the same sentiments; and to this purpose he is said to have consoled an eminent performer, who received little applause from his audience, by saying, "the next time you play, it shall be to me and the Muses." Antigenides was so fully persuaded of the bad taste of the common people, that one day, hearing at a distance a violent burst of applause to a player on the flute, he said, "there must be something very bad in that man's performance, or those people would not be so lavish of their approbation." Antigenides was the author of many novelties on the flute. He increased the number of holes, which extended the compass of the instrument; and, probably rendered its tones more flexible, and capable of greater variety. This musician had great occasion for flutes upon which he could easily express minute intervals and inflexions of sound; since, according to Apuleius, he played upon them in all the modes; the Æolian and the Ionian, the one remarkable for simplicity, and the other for variety; the plaintive Lydian; the Phrygian, consecrated to religious ceremonies; and the Dorian, suitable to warriors. His innovations extended even to the robe of the performer; and he is said to have been the first who appeared in public with delicate Mithian slippers, and a robe of saffron colour, called "croceoton." Plutarch has preserved a bon-mot of Epaminondas, relative to Antigenides. This general, upon being informed, in order to alarm him, that the Athenians had sent troops into the Peloponnesus, equipped entirely with new arms, asked, "whether Antigenides was disturbed when he saw new flutes

States in the hands of "Telis?" who was a bad performer. *Burney's Hist. of Music*, vol. 1. p. 418--422.

ANTIGNANA, in *Geography*, a town of Asia, two miles and a half north-west of Pedena.

ANTIGUCA, or ANTIGONIA, a town of European Turkey, 60 miles south of Jussfa.

ANTIGONE, daughter of Oedipus and Jocasta, is celebrated by the ancient tragedians as a model of filial and fraternal virtue. She accompanied her father in the voluntary exile to which he was condemned, and conducted him in his wanderings after he had lost his sight; and when her brother Polynices was killed in the fatal war of Thebes, she ventured to counteract the inhuman order of Creon, and to pay funeral honours to his exposed corpse. The tyrant commanded her, for this offence, to be starved to death in prison; but she eluded his barbarous sentence, by strangling herself to death; and Hemon, the son of Creon, who was her lover, killed himself upon her lifeless body. *Gen. Biog.*

ANTIGONE, in *Fabulous History*, the daughter of Laomedon, boasted of being more beautiful than Juno; and was transformed by this goddess into a stork.

ANTIGONE, in *Ornithology*, a species of ARDEA. The head is naked, collar papilous, and red; body cinereous; primary quill feathers black. Linnaeus, Gmelin, &c. This is the Indian crane of Latham, and grus orientalis indica of Brisson and Klein. According to Pennant and Latham, it inhabits the Mongolian deserts; from whence it migrates into that part of the Russian dominions which lies beyond Lake Baikal, keeping chiefly within the plains below the rivers Onon and Arun, which is the western extremity of the Gobeon plain.

This bird is larger than the common crane, being in height five feet; the bill is of a greenish yellow, dusky at the tip; irides bright reddish hazel; crown of the head bare and white; on each side of the head, about the ears, is a bare white spot; the rest of the head, and a small part of the neck, covered with a fine red skin, and is also destitute of feathers; the plumage of the bird is ash-colour, lightest about the neck; the quills are black; tail and secondaries ash-colour; those nearest the body are pointed at the ends, longer than the quills, and hang over them; the legs and bare space above the knee are red; the claws white; the middle and outer toe connected by a membrane as far as the first joint. *Lath. Gen. Syn. v. p. 38.*

There is a variety of this species found also in the East Indies, β grus torquata, and grue à collier of Buffon, which is four feet three inches and an half in length; bill long and black; the head and neck, for above half its length, are almost naked, being covered with a reddish-white down; round the middle of the neck is a collar of red; the lower part of the neck, and rest of the body, bluish ash-colour; on the rump is a tuft of stowing feathers, which hang over the ends of the wings and tail, as in the common crane; the tail is black, legs dusky.

ANTIGONEA, in *Ancient Geography*, a city of Macedonia in Mygdonia, founded, according to Stephanus Byz., by Antigonus, the son of Gonatas. This was also the name of a city of Epirus, placed by Steph. Byz. in Chaonia, and by M. d'Anville south-east of Apollonia, and near Celydnus. Another, in Arcadia, was founded on the ruins of the ancient Mantinea, and this name had superseded the other by the adulation of the Greeks, who gave it the name of King Antigonus.

ANTIGONIA, a city of Troas, probably the same with that which was called Alexandria. This name was

also given, according to Strabo, to Nieza, a city of Bithynia. Antigonis was also a city of Syria, upon the Orontes. Diodorus Siculus informs us, that it was built by Antigonus, and that it was 170 stadia in circuit, and that it was designed for the residence of the governors of Egypt and of Syria; but when Seleucia was built, he destroyed Antigonis, and removed the inhabitants to this city. There was also a city of the same name in Asia Minor, in the vicinity of Cyzicus, or rather a fortress, about 50 stadia from the sea. Antigonis was also an island of the Thracian Bosphorus, now called *Isola del principe*. This was also the name of a city of Macedonia, in the Chalcidic territory, in the Thermanic gulf, now the gulf of Thessalonica. It is called Antigneia.

ANTIGONIA, in *Geography*, an island of the Portuguese, in the Æthiopic gulf, near that of St. Thomas, called by them *Iha da principe*.

ANTIGONIS, in *Ancient Geography*, a country of Greece, in Attica.

ANTIGONUS, in *Ancient History and Biography*, one of Alexander's chief generals, was the son of Philip, a Macedonian nobleman. Upon the division of the Macedonian empire, after the death of Alexander, Pamphylia, Lycia, and Phrygia Major were assigned to him; but Perdiccas, who assumed regal power, and who derided the talents and high spirit of Antigonus, determined to take him off; and with this view formed and encouraged various accusations against him. Antigonus, whilst he appeared to submit to Perdiccas, and prepare for his trial, retired with his son Demetrius into Greece, in order to avoid the danger that threatened him, and put himself under the protection of Antipater and Craterus. After the death of Perdiccas, when the provinces were again divided by Antipater, Lycia and Caonia was added to those which Antigonus had originally possessed; and he was appointed to the command of the troops that were destined to act against Eumenes, who was now reputed a public enemy. Eumenes was at first totally routed, through the treachery of Apollonides, general of his horse; and compelled to retire into the castle of Nora, which was situated on an inaccessible rock, and very strongly fortified. The place was invested by Antigonus, but he soon found that it was impossible to reduce it by force; and he therefore contented himself with erecting a strong wall about it, and leaving a sufficient number of troops to guard it, and marched against Alcetas and Attalus, who had raised a considerable force for the succour of Eumenes. Having taken the one and reduced the other to the alternative of surrendering or destroying himself, which latter mode of escape he preferred; their troops were dispersed, and Antigonus had leisure to concert those plans of ambition which he determined to accomplish. Upon receiving the news of the death of Antipater, he resolved to seize Asia. In order to facilitate the execution of his projects, he removed all the governors of provinces who were not in his interest, and endeavoured to secure friends in whose constancy and valour he might confide. With this view, he solicited the concurrence of Eumenes; but this faithful commander having contrived to make his escape from the castle of Nora, assembled an army, and was appointed the royal general in Asia. After several advantages which he gained over the army of Antigonus, he was at length delivered by treachery to his enemy, and put to death. Having thus removed the principal obstacle to his progress, he soon vanquished lesser difficulties; and making himself master of the immense treasures of Susa, he marched forward to Babylon, of which Seleucus was governor. Seleucus escaped, and entered

entered into a league with Ptolemy, Lyfimachus, and Cassander, in order to reduce the power of Antigonus, and secure themselves in their possessions; but in the mean while Antigonus seized the provinces of Syria and Phœnicia. In consequence of a diversion given by Cassander to his arms, Ptolemy recovered Syria, and defeated Demetrius, his son, who had been sent to oppose him. Antigonus, however, who was then in Phrygia, hearing of this disaster, hastened his march over mount Taurus to join his son, and recovered all the provinces which he had lost. Emboldened by his success, he formed a design of subduing the Nabath Arabs, who inhabited the deserts bordering on Judæa. To this service his general Athenæus was appointed; but after having surprised Petra, and possessed himself of its treasures, he was followed by the Arabs; and his whole army, indulging themselves in their imagined security, was cut off, with the exception only of 60 horse, who made their escape. Upon this Antigonus sent his son Demetrius against the Arabs, but he could only succeed so far as to bring them to a kind of composition, with which he was obliged to be satisfied, and to return. He was afterwards sent against Seleucus, who had recovered the province of Babylon, but which he was now obliged again to abandon; and the result of this expedition was, that the confederates made a treaty with Antigonus, and surrendered to him the possession of the whole of Asia, upon condition that the Greek cities should remain free. The treaty was soon broken; and Ptolemy made a descent in Lesser Asia, and some of the islands of the Archipelago, which was at first successful; but he was defeated in a sea-fight by Demetrius, who took the island of Cyprus, and also a great number of prisoners. Such was the effect of these successes on the mind of Antigonus that he assumed the title of king, and conferred the same on his son; and from this period (ante Christ. 306) properly commence his reign in Asia, and also the reigns of Ptolemy in Egypt, and those of the other captains of Alexander in their respective territories. Antigonus now formed the design of driving Ptolemy out of his Egyptian dominions, and for this purpose he prepared a powerful army and fleet, putting himself at the head of the former, and committing the command of the latter to his son Demetrius. This expedition, however, proved unsuccessful, and the design was abandoned. The reduction of Rhodes was the next object to which the attention of Antigonus was directed; but the enterprise was difficult of execution; and Demetrius having made a favourable treaty with the inhabitants, obeyed the summons which he received to assist the Athenians against Cassander. This was followed by a new confederacy on the part of Cassander, Seleucus, and Lyfimachus, against Antigonus and his son; and in order to resist it, they combined their forces, and marched with a powerful army to Phrygia. Here they met Seleucus and Lyfimachus with a force nearly equal; and there ensued the decisive battle of Ipsus, of the event of which Antigonus seemed to have some presentiment; for in the prospect of it he appeared thoughtful and melancholy, and was frequently silent; and, contrary to his usual manner, was slow in his resolutions, consulted much with Demetrius, and as he was reviewing his troops, recommended him to the officers as his successor. His usual confidence, therefore, seems to have forsaken him. On the morning of the battle, as he was rising from a fall with some difficulty, he exclaimed, "Immortal gods! grant me victory, if it be your will; but if not, let me fall in battle, and not survive my fading glory." Whilst the battle was advancing, the king was deserted by a number of traitors, who went over to the enemy; and at length he

was overpowered by a shower of arrows, and thus terminated his life in the 84th year of his age, ante Christ. 301.

The character of Antigonus was that of a soldier of fortune, brave, active, sagacious, of insatiable ambition and avarice, and too heedless of the means by which these passions were gratified. He had also other better qualities; and towards the close of his life he became more mild and tolerant, and endeavoured by good will to retain the subjects whom he had acquired by force. In all private concerns he was strictly just; and to his brother, who wished him to hear in his cabinet a cause in which he was a party, he replied, "No, my dear brother; I will hear it in the open court of justice, because I mean to do justice." Concerning the weight and duties of his office, he frequently uttered philosophical sentiments; and when addressed by Hermodotus, a Greek poet, and one of his flatterers, with the title of a god, and the offspring of the sun, he remarked, that his chamberlain well knew the contrary. At another time, when he was complimented upon his recovery from sickness, he said, "This disease was sent to apprise me, that being a mortal, I should not grasp at any thing above a mortal." As an apology for his extortion, to which he was urged by his exigence, and when he was reminded that Alexander acted differently, "True," said he; "Alexander reaped Asia, and I only glean it." With regard to his domestic conduct, and the harmony with which he lived with his wife and family, Antigonus was peculiarly distinguished: and such was his affectionate confidence in his son Demetrius, that, though he was a youth of splendid talents and considerable ambition, he admitted him as an associate both in his title and government; and Demetrius approved himself not only the dutiful son, but the loyal subject and attached friend. *Anc. Un. Hist. vol. vii. p. 443—479. vol. viii. p. 1—7.*

ANTIGONUS GONATAS, so called from the place of his birth, was the son of Demetrius Poliorcetes, and grandson of the preceding Antigonus, and distinguished by his prudence and mildness more than by his valour. His hereditary claims to the dominions of Demetrius, which comprehended several cities of Greece and the kingdom of Macedon, involved him in various contests, in which he alternately succeeded and was defeated. After the death of Sophenes, and the evacuation of Macedon by the Gauls, he asserted his claim, which he had before done without effect against Ptolemy Ceraunus; but on this occasion he was opposed by Antiochus Soter; the event of the contest was favourable, and he was restored to his possessions. He afterwards established himself by defeating the Gauls, who made an irruption into his kingdom; but was himself expelled by Pyrrhus, king of Epirus. He afterwards recovered a great part of Macedon; and followed Pyrrhus to the neighbourhood of Argos. But the inhabitants wished neither of the contending princes to enter their city. Pyrrhus acquiesced, and at the same time challenged Antigonus to determine the contest by single combat. To this challenge Antigonus replied; "That in making war, he used not only arms, but time; and that if Pyrrhus was weary of life, there were many ways to death, which lay directly before him." Pyrrhus, in a conflict that ensued, was slain: and when the son of Antigonus brought the head of the vanquished prince to his father in triumph, Antigonus thrust his son from him with disdain; "Barbarous wretch!" says he, "dost thou think, that he whose grandfather was thus slain, and whose father died a captive, should rejoice at such a sight?" Then covering the head with his robe, he bedewed it with his tears, and ordered the body to be fought, and burned with all the funeral

ral honours due to a king. When Helenus, the son of Pyrrhus, was brought to him by the same son, who had treated his captive kindly; "Well my son," said Antigonus, "this is better than you did before; however, you have done less than your duty still, because you have suffered a person of his quality to approach me in that thread-bare coat, which is not a disgrace to him, but to our victory." Having entertained Helenus with respect, and comforted him for the loss of his father, he set him at liberty. He also extended his favour to the principal officers in the army of Pyrrhus, and incorporated the troops they commanded in his own. In the closing years of his life and reign he governed his subjects in Macedonia, recovered to him from the Gauls by his son Demetrius, in peace; and enlarged his authority, and conciliated the attachment of the people both to himself and to his descendants. On occasion of the siege of Thebes, in the earlier period of his life, he remonstrated with his father on account of the loss of so many lives for an object so inconsiderable. Nevertheless, he was eminently distinguished by filial affection and respect to his father; for when he was made prisoner by Seleucus, he offered himself as hostage to procure his liberty; and not succeeding, wore deep mourning, and declined participating in any festivities, while his father remained in prison; and on the news of his death, he prepared a fleet, with which he failed to meet his ashes, which he received with the utmost sensibility and respect. One of the least honourable transactions of his life, was his gaining possession of the citadel of Corinth by means of a stratagem, the success of which threw him into a phrenzy of joy; and of the power which he acquired by this event, he made use in augmenting his dominions in Greece, and supporting the petty tyrants against the free states. The Achæans, under their illustrious chief Aratus, vigorously opposed him, and at length recovered Corinth; but Antigonus, indisposed to war, pursued his course of artful and peaceable policy. After a reign of 34 years, and having attained the age of above 80 years, he died, ante Christ. 343, and was succeeded by his son Demetrius II. *Anc. Un. Hist. vol. viii. p. 53—62.*

ANTIGONUS DORON, *q. d. will give*, so called because he was more ready to promise than to perform, succeeded his brother Demetrius II., whose widow he married, in the throne of Macedon; and was distinguished by his great talents in maintaining peace at home, and prosecuting war abroad; by his reputation for justice; by clemency towards his enemies; and by affability and kindness towards his friends. The Achæans invited him into Greece, to aid them in counteracting the power of Cleomenes, king of Sparta, who was himself assisted by the Ætoliens. The citadel of Corinth was put into his hands; and Aratus, who was now become a friend to the Macedonians, was distinguished by his respectful attention. Whilst the greater part of his army was absent, he declined an engagement with Cleomenes; but as soon as his forces arrived, he totally defeated him at Selasia; and by this victory, became master of the hitherto unconquered city of Sparta, which, however, he treated with great lenity, and left free. He then made a precipitate march back into Macedonia, in order to resist the Illyrians, who had, during his absence, invaded that kingdom. In his return, he restored the little republic of Tegea; and arriving at Argos, during the celebration of the Nemæan games, he received many testimonies of respect from the Grecian states. The deliverance of his country cost him his life; for in a battle with the Illyrians, though victory was decisive and complete in favour of the Macedonians, the king fell a sacrifice, not to the sword of the

enemy, but to the exertion he used in straining his voice during the engagement, and to a spitting of blood that was the consequence of this exertion. This soon terminated in his death, ante Christ. 221. Having, died, as he had lived, in the service of his country, he appointed for his successor Philip, his brother's son, to whom he had acted the part of a kind and faithful guardian. *Anc. Un. Hist. vol. viii. p. 63—66.*

ANTIGONUS, king of the Jews, the son of Aristobolus II., was established on the throne of Judæa by the assistance of the Parthians. Soon after his accession, he caused the ears of his uncle Hyrcan, the high priest, to be cut off, that he might be incapacitated for the office; but Herod, who had betrothed, and afterwards married, Mariamne, the grand-daughter of Hyrcan, invaded Jerusalem, and at length, after a siege of six months, took it by storm. With this event, which happened ante Christ. 37, ended the reign of the Asmoneans, which had continued 129 years, from Judas Maccabæus to Antigonus, the last male of that race who bore the regal title. Sosius, governor of Syria, who commanded the Roman forces, and who had assisted Herod on this occasion, having presented a crown of gold to the temple, left Jerusalem, and conveyed Antigonus in chains to Antony; by whom he was, at the earnest solicitations of Herod, put to a shameful death in the third year of his reign. *Anc. Un. Hist. vol. iii. p. 159.*

ANTIGONUS CARYSTIUS, a philosopher and historian, flourished under the Ptolemies Lagus and Philadelphus, about 300 years before Christ. He wrote several lives of philosophers, an heroic poem, entitled, "Antipater," mentioned by Athenæus, and other works; but none are extant, except *Ἱστοριῶν παραβολῶν Συναγωγῆς*, a collection of wonderful stories concerning animals and other natural bodies, compiled from various authors. This work was first published by Xylander, with a Latin version, at Basil, in 568, 8vo.; and reprinted at Leyden, by Menrsius, in 619, 4to. *Fabric. Bib. Græc. lib. iii. c. 27. § 8. tom. ii. 672.*

ANTIGONUS SOCHÆUS, a Jew, was born at Socho, on the borders of Judæa, flourished in the time of Eleazer the high priest, about 300 years before Christ, and was a disciple of Simeon the Just. Offended at the innovations, which were introduced by the patrons of the traditionary institutions, and particularly at the pretensions which were made to meritorious works of supererogation, by which men hoped to establish a title to extraordinary temporal rewards, he strenuously maintained and taught, that men ought to serve God, not like slaves for hire, but from a pure and disinterested principle of virtue. This refined doctrine, opposed by Antigonus merely to the expectation of a temporal recompence for works of religion and charity, was misinterpreted by his followers, and extended to the rewards of a future life; and particularly by Sidæe and Baithofus, two of his disciples, who taught that no future recompence was to be expected, and consequently that there would be no resurrection of the dead. This doctrine they taught to their followers; and hence arose, about 200 years before Christ, the sect of the Baithofæi, or Sadducees. *Brucker, Hist. Philos. by Enfield, vol. ii. p. 172.*

ANTIGRAPHE, from *αἰτι*, and *γραφα*, *I write*, in *Antiquity*, denotes a law suit about kindred, whereby a person claimed relation to such or such a family.

The *antigraphæ* appears to have been the same with *παρακαταβολῆς*.

ANTIGRAPHUS, in *Antiquity*, an officer of Athens, who kept a counterpart of the *apodeicti*, or chief treasurer's accounts,

accounts, to prevent mistakes, and keep them from being falsified. Potter Arch. lib. i. c. 14.

ANTIGRAPHUS is also used, in *Middle Age Writers*, for a secretary or chancellor. He is thus called, according to the old glossarists, on account of his writing answers to the letters sent to his master. The antigraphus is sometimes also called *archigraphus*; and his dignity *antigraphia*, or *archigraphia*. Du-Cange.

ANTIGRAPHUS is also used in Isidorus for one of the notes of sentences, which is placed with a dot to denote a diversity of sense in translations.

ANTIGRAPHUS is also applied, in *Ecclesiastical Writers*, to an ABBREVIATOR of the papal letters. In which sense the word is used by pope Gregory the Great in his Register.

Of late days, the office of *antigraphus* consists in making minutes of bulls from the petitions agreed to by his holiness, and renewing the BULLS after engrossing.

ANTIGUA, called also ANTEGO, in *Geography*, one of the Antilles or Caribbee islands, belonging to Britain, and lying about 20 leagues east from St. Christopher's, and 10 north-east from Montserrat; and being about 50 miles in circumference, is reckoned the largest of all our Leeward islands. It contains 59,838 acres of land, of which about 34,000 are appropriated to the growth of sugar, and pasture annexed; its other principal staples are cotton-wool and tobacco; and in favourable years it furnishes great quantities of provisions. Antigua was one of the Caribbee islands discovered by Colon, in his second voyage, and is said to have been planted by the English in 1632. The first regular grant of it was made by Charles II. about 1663, to William lord Willoughby of Parham. The French were masters of this island for a few years, but in 1668 it was restored to the English by the treaty of Breda. It owes its chief prosperity to the attention of colonel Christopher Codrington, who, in 1674, removed from Barbadoes to Antigua; and having been appointed captain-general and governor of all the Leeward Islands, made this the seat of his government. He applied his knowledge in sugar-planting with such good effect and success, that others, animated by his example, and assisted by his advice and encouragement, adventured in the same line of cultivation. The climate of Antigua is hotter than that of Barbadoes, and so subject to hurricanes, that if it were not for the convenience of its situation and harbours, it would probably be uncultivated and desert. Its soil is of two different kinds; the one, a black mould on a substratum of clay, which is naturally rich, and in favourable seasons, when unchecked by the droughts to which the island is subject, very productive. The other is a stiff clay on a substratum of marl; less fertile than the former, and abounding with a kind of grass which is not capable of being eradicated, so that many estates once profitable, are now covered with it, and so impoverished, as to become either pasture land or utterly abandoned. Exclusively of such deserted land, and such part of the island that is altogether unimproveable, the whole of it may be said to be under cultivation. It is not easy to ascertain an average return of the crops; because they vary to such a degree, that the quantity of sugar exported from this island in some years is five times greater than in others. In 1779, were shipped 3,382 hogheads, and 579 tierces, and in 1782 the crop was 15,102 hogheads, and 1,603 tierces. Mr. B. Edwards is of opinion, that the island has progressively decreased both in produce and in white population. It appears from the returns to government in 1774, that the white inhabitants of all ages and sexes were 2,590, and the enslaved negroes 37,808; and 17,000 hogheads of sugar of

16 cwt. are reckoned a good saving crop; which is about a hoghead of sugar per acre for each acre that is cut.

Antigua is divided into six parishes and 11 districts, and contains six towns and villages: *viz.* St. John's, the capital, Parham, Falmouth, Willoughby Bay, Old Road, and James Fort, of which the two first are legal ports of entry. No island in that part of the world can boast of so many excellent harbours; the principal of which are English harbour and St. John's, both well fortified; and at the former, the British government has established a royal navy-yard and arsenal, and conveniences for careening ships of war. The governor of the Leeward Islands is generally stationary at Antigua; in hearing and determining causes from the other islands, he presides alone; but in causes arising in Antigua, he is assisted by his council; and by an act of assembly of this island, confirmed by the crown, the president, and a certain number of the council may determine chancery causes, during the absence of the governor-general. The other courts of this island are a court of king's bench, a court of common pleas, and a court of exchequer. The legislature of Antigua is composed of the commander in chief, a council of 12 members, and an assembly of 25. This legislature presented the first example of the melioration of the criminal law, respecting negro slaves, by giving the accused party the benefit of a trial by jury; and allowing, in the case of capital conviction, four days between the time of sentence and execution. The military establishment generally consists of two regiments of infantry, and two of foot militia, besides the force raised in the island. The Moravians have been active in their endeavours to enlighten the minds of the negroes, and to lead them into the knowledge of religious truth; and the number of converted negro slaves under the care of the brethren, at the end of the year 1787, was 5,465. St. John's lies in N. lat. 17° 4' 30". W. long. 62° 9'. Edwards's West Indies, vol. i. p. 437—455.

ANTIGUGLER, is a crooked tube of metal, so bent as easily to be introduced into the necks of bottles, and used in decanting liquors, without disturbing them. For this purpose the bottle should be a little inclined, and about half a spoonful of the liquor poured out, so as to admit an equal quantity of air; let one end of the bent tube be stopped with the finger, whilst the other is thrust into the body of the liquor near to the bubble of air already admitted. When the finger is taken off, the bottle will have vent, and the liquor will run out steadily and undisturbed. See SIPHON.

ANTIHECTICS, in the *Materia Medica*, remedies against hectic disorders.

ANTIHECTICUM *Poterii*, in *Pharmacy*, a celebrated chemical preparation, made of equal quantities of tin and chalybeated regulus of antimony, by melting them in a large crucible, and putting to them, by little and little, three times the quantity of nitre: the detonation being over, the whole is to be washed with warm water till no saltness remains.

This was formerly esteemed a very penetrating medicine, making way into the minutest passages, and searching even the nervous cells; whence its use in hectic disorders, from which it derives its name. It was accordingly recommended in heaviness of the head, giddiness, and dimness of sight, from whence proceed apoplexies, and epilepsies; and in all affections and foulnesses of the viscera of the lower belly; and also in the jaundice, dropsies, and all kinds of cachexies. Quincy adds, that there is scarcely a preparation in the chemical pharmacy of greater efficacy in most obstinate chronic distempers. But Neumann observes, that it has no claim to

antihætic virtues, nor indeed to any salutary operation; and it is now generally disregarded. See Neumann's Chem. Works, p. 89, and 138.

It is also called *antimonium diaphoreticum joviæ*. There are divers methods of preparing it, given by Wedelius, Ettmüller, &c. A learned author speaks of it as fatal to consumptive persons. Junker says of it, that in hætic fever, it is rather injurious than salutary. Gmelin's Apparatus Medic. vol. i. p. 235.

ANTILOGOMENA, in *Scripture Criticism*, an expression denoting doubtful, but acknowledged by most to be genuine, one of the three classes into which Eusebius has distributed the books of the New Testament; the other two are homologoumena, i. e. of undoubted authority, and notha or spurious. To this class he refers the epistles ascribed to James and Jude, the second of Peter, with the second and third of John, whether they were written by the evangelist, or by another person of the same name. He is of opinion that these books may be received as genuine productions of the Apostolic age, even if they were not written by the evangelists. Euseb. Eccl. Hist. lib. iii. c. 2.

ANTILEXIS, from ἀντιλεγω, *I contradict*, in *Antiquity*, denotes a new trial granted in the Athenian judicatories, where judgment had before passed against a party for non-appearance.

ANTILIBANUS, in *Ancient Geography*, a chain of mountains in Cælo-Syria, which ran parallel to the other chain denominated Libanus, and both extended from south to north. Antilibanus was to the east, and commenced nearly to the north of Upper Galilee, from which it was separated by mount Hermon, and reached almost to Heliopolis, where it terminated; and thus a distinction is established between Libanus and Antilibanus, though the scriptures call them both by the same common name, Lebanon. The long valley that was situated between these two chains of mountains was called Cælo-Syria. These mountains are now inhabited by those semi-christians called Druses. The Jordan has its source in these mountains.

ANTILLARUM, in *Conchology*, a species of NERITA, very frequent on the shores of the Antilles islands. The shell is sub-globose and black; within white, grooved, and striated; vertex obtuse; and both pillar and outer lip rugose and denticulated. Gmelin.

ANTILLARUM, in *Ornithology*, a species of FALCO, described in L'Histoire des Antilles, tom. ii. p. 252, under the name of Mansfenny, after Buffon; and likewise called le faucon des Antilles by Brisson, Orn. i. p. 361. This is the falco Antillarum of Gmelin, who says it is brown, crown black, and belly white; and Mansfenny of Latham, who characterises it specifically as having the body totally brown. This bird has the shape and plumage of an eagle, but is smaller, being not much bigger than a falcon, and has legs and claws double the size in proportion to those of the falcon tribe. It is found in the Antilles or Caribbee islands, and feeds on small birds, snakes, lizards, &c.

ANTILLES, in *Geography*, a denomination differently applied by various geographers. The term is applied by Hoffman (Lexic. Univ.), to the Windward or Charibbæan islands only; and he says, "dicuntur Antilæ Americæ quasi ante insulas Americæ, nempe ante majores insulas sinûs Mexicanî". Rochfort and Du Tertre explain the word nearly in the same manner; whilst M. D'Anville applies the name to those islands only which are *anti-insula*, or more immediately opposed to, or situated against the continent. Thus he terms Cuba, Hispaniola, Jamaica, and Porto-Rico, the *Great Antiles*; and the small islands of Aruba, Curaçoa, Bonair, and Margarita, and some others near the coast of Caraccas on the southern peninsula, the *les*; altogether ex-

cluding the Charibbæan islands. The Spanish historians plainly prove, that the word *Antilia* was applied to Hispaniola and Cuba, before the discovery either of the Windward islands, or any part of the American continent. This appears from a passage in the first book of the first decad of Peter Martyr, bearing date from the court of Spain, Nov. 1493, eight months only after Columbus's return from his first expedition: "Ophiram insulam sese reperisse refert, sed cosmographorum tractu diligenter considerato, *Antilia* insulæ sunt illæ et adjacentes aliæ; hanc Hispaniolam appellavit, &c." The cluster of islands, denominated the Antilles, is usually divided into Great and Small. They lie from 18 to 24 degrees of N. lat. and are by many geographers distinguished into Windward and Leeward islands; and they lie in the form of a bow, stretching from the coast of Florida north to that of Brazil south. The Greater Antilles have usually been made to comprehend Cuba, Hispaniola, Jamaica, and Porto-Rico; and the Les to include Aruba, Curaçoa, Bonair, Margarita, and some others near the coast of Terra Firma. See each under its proper head. See also CARIBBEES.

If we examine, says M. Buffon, the position of the Antilles, beginning with the island of Trinidad, which is the southernmost, it is impossible to doubt but that Trinidad, Tobago, the Grenades, St. Vincent, Martinico, Marigalante, Antigua, Barbadoes, and all the adjacent isles, once formed a chain of mountains, which extended from south to north, like Newfoundland, and the country of the Esquimaux. The direction also of the Antilles from east to west, if we begin with Barbadoes, and pass on to St. Bartholomew, Porto-Rico, St. Domingo, and Cuba, is nearly the same with the coasts of Cape Briton, Arcadia, and New England. All these islands lie so contiguous, that they may be regarded as a continued belt of land, and as the most elevated parts of a country now occupied by the sea. These islands, therefore, he considers as relics of ancient continents, that seemed to unite the old continent with America. Buffon's Works, by Smellie, vol. i. p. 316., vol. ix. p. 192.

ANTILLON, in *Geography*, a town of Spain, in Navarre, five leagues from Balbatro.

ANTILOCHUS, in *Entomology*, a species of PAPILIO that inhabits North America. The wings are tailed, and yellow both above and beneath, with black bands and margin; tail white, and as long as the wings. Linnæus, Fabricius, &c. This is *papilio caudatis maximus striis umbrisque nigris* of Pevier mus. p. 50. n. 505.

ANTILOGARITHM, the COMPLEMENT of the LOGARITHM of a sine, tangent, or secant; and it is found by beginning at the left hand, and subtracting each figure from 9, and the last figure from 10.

ANTILOGY, ἀντιλογία, q. d. *contrary saying*, a contradiction between two expressions or passages in an author.

Tirinus has published a large index of the seeming *antilogies* each other, but which are all explained and reconciled by him, in his comments on the Bible. Dom. Magri, a Maltese of the Oratory in Italy, has attempted the like; but he has done little more than rehearse what occurs of that kind in the principal commentators.

ANTILOIMICA, in the *Materia Medica*, medicines which preserve against the plague.

ANTILOPE, in *Entomology*, a species of LUCANUS that inhabits Africa, and is described in the Stockh. Transf. 1787. The jaws are exerted, and bimarginated on the interior side; upper margin two-toothed, lower margin five-toothed. Swederus, Gmelin: found in Sierra Leona; it is brown, and rather smooth.

ANTILOPE, in *Zoology*, See ANTELOPE.

ANTILUTHERANS, in *Ecclesiastical History*, a sect or party among the ancient reformers, who maintained opinions, chiefly in relation to the eucharist, different from those of Luther.

Such were Carolostadius and his followers, called also *Sacramentarians*; and those of Zuinglius, denominated *Zuinglians*.

The sect of Antilutherans, at first confined within narrow bounds, in a few years time subdivided into six or seven inferior sects; and ere long into an infinite number, more variously denominated.

ANTILYSSUS *pulvis*, in *Medicine*, is composed of equal parts of the LICHEN cinereus terrestris, & piper niger. It is reckoned useful in preventing the RABIES canina. Phil. Trans. N^o 448.

The pulvis antilyssus of Hill, composed of half a scruple of alum, half an ounce of chalk, three drams of bole-armoniac, one dram of the root of helenium, and six drops of oil of aniseed, is commended by Heysham for preventing hydrophobia. Med. and Philos. Com. Edinb. vol. i. p. i. Lond. 1777-8.

ANTIMACHUS, in *Biography*, a name applied to three Greek poets, of whom the most celebrated was the son of Hipparchus, a native either of Claros or the neighbouring Colophon, who flourished in the 93d Olympiad, about 408 years before Christ. He was reckoned one of the six most famous Greek poets; and he is ranked by Quintilian next to Homer, at a great distance, in heroic poetry. His great work was a "Thebaid," or an epic poem on the war of Thebes. It is said that it consisted, before the seven chiefs were brought to the siege, of 24 books; and at a public recital of his piece, all his auditors, except one, deserted him: but this one was Plato; and Antimachus declared, that he would read on, as Plato alone was equal to the whole audience. When his fame was almost forgotten, the emperor Adrian endeavoured to revive it, and to give him the priority to Homer; but a Roman emperor could not do this. Antimachus wrote a poem to Lyde, supposed to be either his wife or his mistress, the celebrity of which may be inferred from the mention of it by Ovid:

"Nec tantum Clario Lyde dilecta poetæ."

"More lov'd than Lyde by the Clarian bard."

Nothing of this writer has reached modern times. Vossius, Gen. Biog.

ANTIMACHUS, in *Entomology*, a species of PAPILO that inhabits Africa. The wings are indented, long, and black; interior pair spotted with rufous; disk of the posterior pair rufous, radiated, and marked with black spots. Fabricius, &c.

ANTIMACO, MARK ANTONY, in *Biography*, a learned Italian, was born at Mantua about the year 1473. He spent five years at Greece in the study of the Greek language; and on his return opened a school at Mantua for the study of this language and of polite literature, which became famous. He pursued the same employment at Ferrara, where he died in 1532. Antimaco translated several pieces from the Greek, which were printed at Basil in 1540, together with an oration in praise of Grecian literature. He also wrote Latin poems. Tiraboschi, Gen. Biog.

ANTIMENSIVM, a kind of consecrated table-cloth, occasionally used in the Greek church, in places where there is no proper altar.

F. Goar observes, that in regard the Greeks had but few consecrated churches, and that consecrated altars are not things easy to be removed; that church has, for many ages, made use of certain consecrated stuffs, or linens, called antimensia, to serve the purposes thereof.

ANTIMENSIVM, in the *Greek Church*, answers to the *altare portabile*, or portable altar, in the Latin church. They are both only of late invention, though Habertus would have them as old as St. Basil. But Durant and Bona do not pretend to find them in any author before the time of Gregory and Charlemagne.

ANTIMENSIA is also applied to other tables, used in offices of religion, besides those whereon the eucharist is administered: such, e. gr. are those whereon the host is exposed, &c. The origin of the antimensia is described by Meuschen: when the bishop had consecrated a church, the cloth which had been spread on the ground, and over the communion-table, was torn in pieces, and distributed among the priests, who carried each a fragment away, to serve to cover their tables in their churches and chapels. Not that it was necessary that such cloths should be laid on all tables, but only on those which either were not consecrated, or at least whose consecration was doubted of.

ANTIMENSIUS, an ancient officer in the Greek church, whose business it was to introduce and place the communicants at the eucharist.

Some have imagined that he had the care of the *antimensia*. But this rather belonged to the office of great *scenophylax*. He is otherwise called chief of the *antimensii*.

ANTIMERIA, from *αντι*, and *μερος*, a part, in *Grammar*, a figure whereby one part of speech is used for another: e. gr. *velle suum cuique est*; for *voluntas sui cuique est*; also *populus late rex* for *populus late regnans*.

ANTIMERIA, in a more restrained sense, is a figure whereby the noun is repeated instead of the pronoun.

The antimeria is frequent in the Hebrew, and is sometimes retained in our version of the Old Testament; accordingly, e. gr. *Hear my voice, ye wives of Lamech, for my wives*. Gen. ch. iv. ver. 23.

ANTIMETABOLE, in *Rhetoric*, a figure which sets two things in opposition to each other.

The word is compounded of *αντι*, against, and *μεταβολη*, from *μεταβαλλω*, I shift, or transfer; i. e. a shifting, or setting two things over against each other.

This figure is twice exemplified in an apophthegm of Musonius; which, on account of its excellence, is called *aureum monitum*, the golden maxim or precept:

Ἐάν τι πράξης καλὸν μετὰ πόνου, ὃ μὲν πόνος ἄρχεται, τὸ δὲ καλὸν μένει, Ἐάν τι ποιήσης αἰσχερὸν μετὰ ἡδονῆς, τὸ μὲν ἡδὴ ἀρχεται, τὸ δὲ αἰσχερὸν μένει.

In English thus:

"Allowing the performance of an honourable action to be attended with labour; the labour is soon over, but the honour immortal: whereas, should even pleasure wait on the commission of what is dishonourable, the pleasure is soon gone, and the dishonour eternal."

ANTIMETATHESIS, from *αντι*, and *μετατιθημι*, I transfer, in *Rhetoric*, is the inversion of the parts or members of an ANTITHESIS. Such is that of Cicero, in Verrem, lib. iv. cap. 52. "Compare this peace with that war; the arrival of this governor with the victory of that general; his profligate troops with the invincible army of the other; the luxury of the former with the temperance of the latter: you will say, that Syracuse was founded by him who took it; and taken by him, who held it when founded."

ANTIMILO, in *Geography*, a small desert island of the Archipelago, a few miles north-west of Milo, and like it appearing volcanic.

ANTIMISIUM, in *Antiquity*, a table placed before the Roman tribunal or judgment-seat.

What relation this has to the *antimensia* in the Greek church

church, does not appear. Some writers confound them together as the same thing.

ANTIMONARCHICAL, from *αντι* and *μοναρχικος*, *μονος*, alone, and *αρχη*, dominion, something that opposes or stands against monarchy or kingly government.

Antimonarchical is frequently used in the sense of republican.

ANTIMONARCHIST, a person who maintains antimonalarchical principles.

Buchanan, Milton, Hottoman, Languet, Ludlow, Sidney, and others, are celebrated antimonalarchists.

ANTIMONARCHOMACHI, from *αντιμοναρχος*, and *μαχη*, contest: *antimonarchomachist*, is used by some political writers to denote maintainers of monarchical or absolute power vested by divine right in the persons of princes. In which sense, *antimonarchomachi* stand opposed to *monarchomachi*.

King James the First, Salmasius, Peter du Moulin, bishop Bramhall, Albericus Gentilis, Ziegler, William and George Barclay, Bochart, &c. have distinguished themselves in the class of monarchomachists. Acker has treated professedly of the monarchomachists and antimonalarchomachists.

ANTIMONIALS, in *Medicine*, denote preparations of antimony, or remedies whereof antimony is the basis or principal ingredient.

Antimonials are chiefly of an emetic tendency; though they may be so qualified as to become either cathartic or diaphoretic, or even only alterative. See *WARD'S Pill*.

An antimonial cup, made either of glass of antimony, or of antimony prepared of salt-petre, though a substance indissoluble by the stomach, will give a strong cathartic or emetic quality to any liquor poured into it, without any diminution of its own weight.

ANTIMONIATED, something tinged with the qualities, or resembling the appearances of antimony.

Dr. Woodward speaks of a kind of striated, or antimoniated lead ore.

ANTIMONY, *Στιβιον*, *Στιβιον*, *στυβιον*, Gr. *Stibium* *Furbason*, Lat. *Spießglas*, *Spießglanz*, Germ. *Spießglas*, Swed. *Spießglas*, Dan. *Pisgotz*, Hung. *Antimoine*, Fr. *Antimonio*, Ital. *Antimonia*, Russ. *Protus*, *leo ruber*, *plumbum nigrum*, *balneum regis*, *lupus metallorum*, Alchem.

Antimony is a brittle metal, of a brilliant white colour; fusible at a moderate red heat; and at a higher temperature, with access of air, it exhales a white inodorous vapour. It is soluble in nitro-muriatic acid, and precipitable from its solution of a white colour by distilled water, and of a deep brick-red by sulphuret of ammonia (volatile liver of sulphur.)

§ I. Ores of Antimony.

The antimonial ores have not as yet been analysed with sufficient accuracy to clear up all doubts as to the nature of their contents; an arrangement of them must, therefore, as yet principally depend on their external characters. We shall follow the example of Weidenmann, Emmerling, &c. in dividing them into several species, though probably the whole may be reduced to the native, the sulphurated, and the oxydated.

Sp. I. Native antimony. *Gediegen Spießglas*, Germ. *Antimonium nativum*, Werner. *Antimoine natif*, & *A. blanche ou arsenicale*, Delisle, Haüy, and Born.

Has a light tin-white colour, with an occasional shade of yellow. Occurs massive, disseminated, or kidney-shaped. Is internally of a brilliant metallic lustre. Its fracture is either striat or curved foliated. The fragments are usually

large or small grained; seldom conchoidal. It is soft, approaching to half hard, and of considerable specific gravity.

It melts with ease on charcoal before the blowpipe, exhaling a white arsenical fume, and readily amalgamates with mercury.

By the analysis of Mongez the younger, it appears to be a native alloy of antimony and arsenic, in the proportion of about 96 of the former to 4 of the latter.

Native antimony is a mineral of very rare occurrence; it was first found in 1748, by Schwab, in the silver mines of Sahla in Sweden, with a gangue of calcareous spar; and has since been detected by Sage imbedded in quartz in the mines of Allemont in Dauphiné.

Sp. II. Sulphurated A.—Grey antimonial ore. *Graues Spießglaserz*, Germ. *Mine d'Antimoine gris ou sulfureuse*, Delisle. *Antimoine sulfuré*, Haüy.

Of this ore there are three varieties, the compact, foliated, and striated.

Var. 1. Compact. *Dichtes graues Spießglaserz*, Germ. *Antimonium mineralizatum griseum densum*, Werner.

The colour of this is lead grey, passing into steel-grey, and tarnishes blue or purple on exposure to the air. It occurs massive or disseminated. Is of a metallic lustre, shining or little shining. Its fracture is small-grained uneven. It flies, when broken, into irregular blunt-cornered fragments. Is soft, gives a bright metallic streak, and is of considerable specific gravity.

It melts with great ease before the blowpipe, and burns with a blue flame, exhaling a copious white sulphurous vapour.

It is the scarcest of the sulphurated antimonial ores, and is found principally with quartz and spathose iron ore at Braunndorf in Saxony, Goldkronach in Bayreuth, Auvergne in France, and Majurka in Hungary.

Var. 2. Foliated. *Blättriges graues Spießglaserz*, Germ. *Antim. mineraliz. griseum lamellosum*, Werner.

This differs from the former variety in the following particulars. Colour, light steel-grey. Fracture fine grained foliated, sp. gr. 4. 36. Occurs in quartz at Braunndorf, and at Nagyag in Hungary.

Var. 3. Striated. *Strahliges graues Spießglaserz*, Germ. *Antim. mineraliz. grif. radiatum*, Werner.

Its colour is light steel-grey, passing into a blackish grey, azure blue, golden yellow, and other splendid iridescent tints. It occurs disseminated, or in glandular mamillated and stalactitic masses or crystallized. The primitive form of its crystals has not yet been ascertained. Haüy has shewn that they are most easily and neatly divisible in one direction only, parallel to their axes; other natural joints are, however, discernible by the varying reflection of light from these surfaces when held before a candle. The only crystalline form that has hitherto been determined, is a compressed hexahedral prism, terminated by obtuse tetrahedral pyramids with trapezoidal surfaces (*antimoine sulfuré sexoedronal* of Haüy). See crystallographical plates, fig. 206. Incidence of *n* on *s* 134°; of *l* on *l'* 106° 30'; of *l* on *s* 146°. Born also mentions specimens from Hungary and Norway of truncated tetrahedral prisms. The surface of the crystals is generally marked longitudinally, with delicate striæ, and possesses much lustre. The internal lustre both of the amorphous and crystallized kinds is metallic and bright, or little shining. Its fracture is striated either broad or narrow, radiating, diverging, or implicated. When broken, it flies into irregular prismatic, or long granular fragments. Is soft and brittle. Specific gravity from 4.13. to 4.51. Its component parts, according to Bergman, are,

74 antimony,
26 sulphur.

100

The Hungarian antimony also contains a small variable proportion of gold.

This is the commonest of all the antimonial ores: it is procured at Kremnitz and Tefobanya in Hungary, at Draviza in the Banat, Braunsdorf in Saxony, the Black Forest in Swabia, Pereta in Tuscany, Lubillac in Auvergne, and Corawall in England; also in Spain, Mexico, and Siberia. The splendid iridescent specimens come principally from Hungary.

Sulphurated antimony is sometimes confounded with oxyd of manganese; it may, however, be easily distinguished by the great ease with which it is fusible even in the flame of a common candle: it differs also from native antimony in exhaling, when heated, a sulphureous, and not an arsenical odour; in being of a darker colour, and leaving a dark grey trace when rubbed on paper.

It is found, for the most part, in primitive mountains, in micaceous schistus, and clay porphyry, mixed with pyrites and oxyds of iron: the gangue is sulphated barytes in Hungary, but elsewhere, for the most part, quartz; also, though rarely, chalcedony fluor and calcareous spar.

Sp. III. Plumose antimony. *Federerz, Silber Federerz*, Germ. *Mine d'argent grise antimoniale*, Delisle. *Antimoine sulphuré argentifere*, Haüy. *Antimonium plumosum mineralizatum argentiferum*, Born. *Antimonium mineralizat. griseum plumosum*, Werner.

The colour of plumose antimony is steel-grey, passing into greyish black, lead, or smoky grey: by exposure to the air, it tarnishes to an iridescent blue or yellow. It occurs in slender minute capillary crystals investing the surface of quartz and other minerals with a delicate brittle down or wool: the crystals are sometimes scarcely visible to the naked eye, and so implicated with each other, as to appear like an amorphous crust. According to Delisle, the form of the crystals is that of a compressed hexahedral prism, terminated by dihedral summits with pentagonal faces; the longitudinal striæ, however, are generally so strongly marked as to obscure the sides of the prism. Its lustre is semi-metallic, more or less glimmering. The fracture is confusedly fibrous, and the fragments are indeterminate. It is brittle: sp. grav. 3.57. Before the blowpipe it emits a smoke that deposits a white and yellow powder on the charcoal, and the residuum then melts into a black slag. No accurate analysis has yet been made of it; but, according to Bergman, it consists of antimony, iron, arsenic, sulphur, and sometimes silver.

This substance is ranked by many mineralogists among the silver ores; but improperly, as the proportion of silver is casual and variable, and never exceeds $3\frac{1}{2}$ or 4 per cent.

It is met with in the Saxon mines, especially that of Himmelfurt near Freyberg; also at Stöllberg in the Hartz, and Schemnitz in Hungary.

Sp. IV. Red antimony. *Rothes Spießglaserz*, Germ. *Soufre doré natif strié*, et *Kermes mineral natif*, Delisle. *Antimoine hydro-sulfuré*, Haüy. *Antimonium auripigmento mineralizatum*, Cronstedt. *Antimonium mineralizatum rubrum*, Werner.

The colour of red antimony is a deep crimson approaching to blood red, sometimes, though seldom, clouded with iridescent blue. It occurs generally in minute short hair, or needle-form crystals, radiating or implicated: sometimes also it is found massive or disseminated. Its lustre is vitreous,

little shining. Its fracture is fine, and irregularly diverging fibrous. It is opaque, brittle but somewhat elastic: sp. grav. 4. to 4.7.

Before the blowpipe it melts easily and evaporates, exhaling a slight sulphureous odour.

The only mineral with which it is liable to be confounded is the red silky oxyd of copper: this last, however, is of a brighter colour, and dissolves with effervescence in nitrous acid, giving it a green tinge; the red antimony, on the contrary, is not dissolved, but becomes covered with a whitish crust. No accurate analysis has yet been made of this ore; from its colour it was formerly supposed to contain arsenic and sulphurated antimony: according to Sage, however, it is a native mineral kermes. Thus much is certain, that it is met with in the crevices, and investing the surface of the common sulphurated antimony, and appears to be this in an advanced state of natural decomposition: the amorphous or massive variety is frequently studded with small crystals of native sulphur, in the form of rhomboidal octahedrons.

It is met with at Braunsdorf in Saxony, Malazka and Kremnitz in Hungary, and Allemont in Dauphiné.

Sp. V. White antimony. *Muriated antimony*, Kirwan. *Weißes Spießglaserz, Spießglanzspat*, Germ. *Muriate d'antimoine*, Born. *Antimoine oxydé*, Haüy. *Antimonium mineralizatum album*, Werner.

The colour of white antimony passes from snow-white through greyish and yellowish white into ash grey. It is seldom found massive, often radiating like zeolite, but generally crystallized in small and long quadrilateral prisms or rectangular tables, which are accumulated together in bundles or cells. The surface of the crystals is plain, or longitudinally striated, and bright shining or specular. Internally this mineral is much shining, or shining with a vitreous lustre passing into pearly. Fracture striat foliated. It flies when broken into irregular, not particularly sharp-cornered fragments. Is translucent, soft, brittle, and heavy.

In whole crystals it decrepitates before the blowpipe; but when powdered, it melts quietly and without difficulty, giving out a white smoke, and by degrees totally evaporates. Between two coals it is reducible to the metallic state.

From the analysis of Klaproth, it seems to consist of antimony and muriatic acid; but the acicular variety from Dauphiné afforded Vauquelin,

86 oxyd of antimony,
3 oxyd of iron and oxyd of antimony,
8 silic,
3 loss.

100

This beautiful, but uncommonly rare fossil, was first discovered in 1782, by Mongez the younger, at Allemont in Dauphiné, mixed with native antimony: afterwards, in 1787, by Röslér at Przißram on the surface of galena: it occurs also at Malazka in Hungary, with the red and sulphurated antimony.

Sp. VI. Yellow antimony. *Supposed phosphorated antimony*, Kirwan. *Phosphate d'Antimoine*, Fr. *Gelbes Spießglaserz*, Germ. *Antimonium mineralizatum flavum*, Werner.

The colour of this is orange or wax yellow, or yellowish white, passing into black when tarnished. It occurs in long striated needleform crystals, or quadrilateral tables. It is shining, and when black has a metallic lustre. Is soft, flexible, and heavy.

Before the blowpipe it neither flames nor smokes, but melts easily into a brittle slag, containing a small tin-white bead

A N T I M O N Y.

head of metal. It has not been analysed. This mineral was first discovered by Count Rafumawfky, in a vein of sulphurated antimony at Fincigny in Savoy, and has since been found at Malazka in Hungary.

Sp. VII. Antimonial ochre. *Spießglasker*, Germ. *Antimonium ochraceum*, Werner.

Its colour is blew or lemon yellow, and yellowish grey. Occurs massive, disseminated or incrusting. Is dull; of a fine earthy fracture; soft, brittle, and heavy.

Before the blowpipe it becomes white, volatilizes, but does not melt. It effervesces strongly with borax, and is partially reduced. It has not yet been analysed, but is supposed by Karsten to be an oxyd of antimony.

It is found at Briantbrunn near Freyberg, and in Hungary, mixed with sulphurated and red antimony.

Emmerling, vol. ii. Wiedenman, Handbuch, &c. Lenz, Versuch. &c. vol. ii. Haüy, Traité de Mineralogie, vol. iv. Delisle, Crystallographie, vol. iii. Kirwan's Mineralogy, vol. ii.

§ 2. *Assay and Analysis of Antimonial Ores.*

All the antimonial ores are easily reducible before the blowpipe on charcoal; and by a continuation of the heat, they exhale a dense smok of a white or yellowish colour, with little or no arsenical odour, and deposit yellowish flowers, or white needleform crystals, on the surface of the charcoal: these appearances are, however, liable to considerable modification on account of the variable proportion of lead, arsenic, sulphur, &c. that are usually mixed with the antimony. A more certain, therefore, though not so expeditious a method of ascertaining the presence of this metal, is to reduce 200 grains of the ore to fine powder, and digest it in a moderately diluted nitro-muriatic acid, in which the nitrous is not more than one-third of the muriatic part. The clear liquor, after slow digestion for an hour, is to be decanted and reduced by evaporation to about half its bulk, and then poured into a large quantity of distilled water: a copious white precipitate immediately takes place of antimonial oxyd, which when edulcorated and mixed with an equal weight of crude tartar, is to be put into a small lined crucible fitted with a cover, and by a moderate red heat the oxyd will be reduced into a metallic button.

The analysis of antimonial ores presents no particular difficulties, except such as are common to all minerals in which arsenic enters. The following are the substances which have been found mixed with antimony, *viz.* iron, silver, lead, copper, arsenic, and sulphur; to which must be added, flint and alumine, as composing the stony gangue, which cannot always be entirely separated previous to analysis.

(a) Let 500 grains of the ore be reduced in an agate mortar to an impalpable powder, and afterwards mixed in a flask with 1500 grs. of pure nitrous acid of sp. gr. 1.25, and 1000 grs. of distilled water; digest the mixture at a temperature considerably less than boiling, for an hour, then pour off the clear liquor, and add nitrous acid equal to half the quantity first used; digest this for a few minutes, and add by degrees, during the remainder of the digestion, half as much distilled water as acid; then pour off the clear liquor, and wash the residue with distilled water.

(b) Add together the two nitrous solutions and the washings, and drop in a saturated solution of muriated soda as long as any precipitate takes place, and allow it to stand for a few hours; pour off the liquor, and boil the precipitate in a little distilled water; filter and edulcorate. Add the washings to the liquor.

(c) The precipitate (b), consisting of muriated silver, and probably a little arsenic, being dried in a heat just inferior to its fusion, is to be weighed, and reduced in a small crucible by twice its weight of pearlash: 75 parts of silver denote 100 of muriated silver, and if the produce of metal is less than that obtained by calculation, the deficiency may be let down as arsenic.

(d) The nitrous solution (b), containing a great excess of acid, is to be reduced to only a slight excess by the addition of potash or soda; and is then to be treated with nitrated barytes for sulphuric acid: the sulphat of barytes thus produced, contains the sulphur of the ore oxygenated by the nitrous acid. This being separated, add a saturated solution of sulphated soda, as long as any precipitation takes place. This is sulphated lead.

(e) The residue of solution (d), being evaporated to dryness, is to be mixed with soap, and heated in a subliming flask, the arsenic will thus be obtained in a metallic state.

(f) Upon the insoluble residue (a) digest two or three ounces of nitro-muriatic acid, composed of nitrous acid 1, muriatic acid 5, water 3. By this the antimony, iron, and copper will be dissolved, together with a little alumine and flint. Separate this from the undissolved residue, and pour the liquor into three or four times its quantity of distilled water, and the oxyd of antimony will be precipitated. Separate this by filtration, wash, and add the washings to the other liquor: 130 parts of oxyd of antimony well dried denote 100 of metal.

(g) Evaporate the fluid (f) to a small bulk, and superaturate it with caustic ammoniac, the iron and earths will be precipitated, and the copper will be held in solution, giving it a blue colour. Separate the precipitate by a filter; and add sulphuric acid to the ammoniacal liquor till it becomes acidulous, then precipitate the copper by a bar of clean iron.

(h) The precipitate (g) being digested with a little caustic potash, the flint and alumine will dissolve, leaving the oxyd of iron behind.

(i) The undissolved residue of (f) being dried and weighed, is to be ignited to drive off the sulphur, the quantity of which is denoted by the loss of weight after ignition. What remains is earth and a few atoms of metallic oxyd, which being fused with black flux, will reduce the oxyd, and render the earths soluble in water.

(k) The sulphated lead (d) is to be reduced by fusion with tartar, and the oxyd of antimony also by the same method: being then weighed separately, as much pure lead is to be added as will make the lead twice the weight of the antimony. The metals being melted together are to be divided into two equal parts, and subjected to cupellation; if any silver remains, its amount is to be added to that of (c). Bergman's Ess. Klaproth's Analytical Essays. Kirwan's Mineralog. vol. ii.

§ 3. *Reduction of Antimonial Ores.*

The grey or sulphurated antimony is the only one of this metal that is found in sufficient abundance for the purposes of manufacture, and the treatment that it undergoes is extremely simple. The larger pieces of the earthy or stony matter of the gangue being first picked out, the remainder is coarsely bruised, and subjected to a low red heat in close vessels: the sulphurated metal then melts on account of its very easy fusibility, leaving the impurities behind. This process is usually performed in a crucible, whose bottom, perforated with a number of small holes, is inserted into another

other

other crucible. (See Chemistry, Plate iv.) A. B. *fig. 15*, or connected with the lower crucible by means of a pipe, *fig. 16*. In each apparatus the ore is put into the upper crucible, which serves the purpose of a filter, by detaining the stony impurities, while the melted metal flows into the lower receptacle. *Fig. 17, 18, 19, 20, 21, 22*, are plans and sections of the furnaces generally made use of. This method, however, of extracting the ore is far from being the most economical possible, on account of the length of time necessary to charge a multitude of crucibles, the expence of replacing those that are broken, and the extra quantity of fuel required when the ore is not in immediate contact with the flame. On this account some of the founderies in Hungary and France have altogether discarded the crucibles, and melt the antimony in mass by a reverberatory furnace, taking care to keep the surface of the metal covered with charcoal to prevent oxydation. *Fig. 23 and 24* are a plan and section of such a furnace. The rough ore being placed in the bed A, and covered with charcoal, is gradually brought to a state of fusion; and the plug at B being then withdrawn, the melted metal flows into the receptacle C. *Fig. 25, 26*, represent another kind of furnace for the same purpose made use of at Ramée in La Vendée. The sulphurated antimony thus obtained is remelted, and cast into loaves or cakes, forming the common or crude antimony of the shops.

§ 4. *Regulus of Antimony.*

The sulphurated ore of the preceding section having been long known by the name antimony, the term regulus of antimony was employed to designate the pure metal: in the reformed nomenclature, on the other hand, the former of these substances is called sulphuret of antimony, and the latter simply antimony. This ambiguity it is of consequence to be aware of, and we shall endeavour to avoid it as much as possible by using the term regulus of antimony wherever by so doing the sense may be made clearer.

The substance from which the regulus is prepared, whether in the large way for the purposes of commerce, or in the laboratory, is universally the native sulphuret. This consists of antimony and sulphur in the proportion, according to Bergman, of 74 of the former to 26 of the latter. Numerous methods have been proposed by different chemists for the separation of the metal, all of which may be conveniently arranged under the three following general heads. I. Reduction by roasting. II. Reduction by scorification. III. Reduction by dry parting or precipitation.

I. Reduction by roasting.

The native sulphuret of antimony being previously separated by fusion from all earthy impurities, as described in § 3, is to be pulverized and spread thinly on the floor of a reverberatory furnace or muffle, to be freed from its sulphur by roasting. At the commencement of the process the fire must be managed with particular care, and the temperature ought scarcely to be greater than what is necessary for the fusion of tin, otherwise the antimony will clog, and even melt, so as to require being removed from the fire, and again pulverised: as soon as the fumes of sulphur become visible to the eye, in the form of a light lambent blue flame, it is a proof that the heat is sufficient; and the ore should now be continually stirred with a tobacco-pipe, or any other earthen rod. In a short time the antimony will begin to oxydate, and assume a greyish earthy appearance; the fire may then be raised a little, to hasten the evaporation of the sulphur; and thus the operator may go on gradually increasing the heat as the ore will bear it; and continually

stirring it, so as to expose fresh surfaces to the air. When the ore is moderately red-hot, and ceases to give out a sulphureous vapour (which will not be till after some hours), the roasting is finished. By this means an ash grey oxyd is obtained; still, however, not entirely free from sulphur, weighing from 30 to 36 per cent. less than the original sulphuret.

In order to obtain the regulus from this grey oxyd, the common way is to mix it with half its weight of crude tartar, and expose it in a covered crucible to a full red-heat; the tartar will thus be decomposed, its carbonaceous part serving to deoxygenate the antimonial oxyd; and its alkaline base combining with the sulphur still contained in the ore, forms sulphuret of potash, by which a portion of antimony is held in solution, while the rest of the regulus, by its superior specific gravity, unites into a mass at the bottom of the crucible. The quantity of regulus obtained by this means in the large way, is from 66 to 70 per cent. on the oxyd; but the produce depends essentially on the accuracy with which the roasting has been performed: if much sulphur still remains in the oxyd, a large proportion of the metal will be dissolved in the sulphurated alkaline scoria. Kunkel's method appears to be more economical, and better in every respect: he mixes the roasted oxyd with oil or fat and a little powdered charcoal, puts the mixture into a crucible to melt, and as soon as the regulus begins to shew itself, injects by degrees some powdered nitre, in the proportion of an ounce to a pound of antimony: the matter in thin fusion being poured out, a pure regulus is obtained in much greater quantity than by the common way. Most of the sulphurated ores, as those of lead and copper, are reduced to the metallic state after roasting by a simple carbonaceous addition, by which means the product of metal is greater than if an alkaline flux was made use of, and the whole expence of the flux is saved. Induced, therefore, by these motives and analogies, a series of experiments was undertaken by Haffenratz, Vauquelin, and Buillon la Grange, to obtain the regulus of antimony by cheaper means than the use of tartar or nitre. For this purpose different parcels of the roasted grey oxyd were mixed with charcoal powder, with tallow and with pitch, and exposed in covered crucibles to a reducing heat; being then withdrawn, and the contents of each examined, nothing was found in the crucibles but a little carbonaceous matter, and a few minute globules of antimony, the rest being evaporated. Some grey oxyd was then mixed with, 1. equal parts of lime, alumine, and silix; 2. equal parts of sulphat of barytes, chalk and clay; 3. with common salt; 4. with sulphat of soda; and the materials being strongly heated, they were all found converted into yellow glasses, but not a particle of regulus could be perceived. The above four mixtures, with some charcoal rubbed up into them, were next treated as before: vitreous scoriae were obtained, but no greater quantity of regulus than when charcoal alone was made use of. Lastly, some of the same grey oxyd being fluxed with half its weight of tartar, yielded a perfect button of pure antimony. Hence it appears, that potash, and probably alkalies in general, exert some specific action on antimonial oxyd, which induces it to become much more fixed while converting into regulus, than when mere carbonaceous matter is employed.

II. Reduction by scorification.

This, although the most expensive and inaccurate method of procuring the regulus of antimony, is generally preferred in the laboratory to every other on account of its expedition. For this purpose the antimonial sulphuret is reduced to a fine powder,

powder, and mixed with nitre and tartar; a crucible being then made red hot, successive spoonfuls of the mixture are gradually projected into it till the vessel is nearly filled; being then covered, and a full red heat applied for half an hour, the contents are either poured out into a greased iron cone, or suffered to cool in the crucible; a pure regulus is thus obtained, covered with a mass of saline scorix. In this process the acid of the nitre is decomposed, and is employed in acidifying the sulphur and partly oxydating the antimony, while the carbonaceous matter of the tartar serves to deoxydate the metal, and in some degree also to decompose the sulphuric acid; hence the scorix consist of the potash of the nitre and tartar, partly united with sulphuric acid, forming sulphat of potash, and partly with sulphur, forming sulphuret of potash, which last also holds in solution a considerable proportion of the antimony.

If the quantities of nitre and tartar are large compared with that of the crude antimony, nearly the whole of the metal will be taken up by the scorix. According to Lemery, sixteen ounces of sulphurated antimony, mixed with the same weight of nitre and also of tartar, yielded no more than five ounces and a half of regulus. Whereas sixteen ounces of crude antimony, twelve ounces of tartar, and six ounces of nitre, afforded six ounces and one dram of regulus. The usual proportions are four parts of crude antimony, with three parts of tartar, and one and a half of nitre. Some advise to detonate the nitre and tartar together, before the antimony is added, but this is decidedly a bad way, as the use of the nitre is not to alkalize the tartar, but to oxygenate the sulphur. A greater proportion of regulus than usual would probably be obtained by mixing the antimony and nitre alone, and not adding the tartar till after the detonation had taken place.

III. Reduction by precipitation.

This is effected by fusing the antimonial sulphuret with any other metal whose affinity for sulphur is greater than that of antimony, in which case the sulphur combines with the added metal, while the regulus of antimony collects in a button at the bottom of the crucible. The metals capable of thus decomposing the sulphurated antimony are iron, copper, lead, silver, and tin, whence originated five varieties of antimonial regulus, known among the alchemists by the names of martial, venereal, saturnine, lunar, and jovial. As equal parts of these metals require different quantities of sulphur for their saturation, a greater or less proportion of them is necessary for a given weight of crude antimony: thus two parts of this last substance are decomposed by one part of iron, by two parts of copper, or by four parts of lead.

In order to prepare the martial regulus (for all the others are now become obsolete), a number of formulæ are given by Lemery, Beaumé, and other practical writers, the relative merits of which can only be duly appreciated by a comparison of the quantity and purity of the regulus with the expence of time, of fuel, and of nitre, required in its preparation. The following are those which seem best worth notice:

1. Take eight ounces of horseshoe nails, and heat them nearly to whiteness in a crucible, then add, by degrees, sixteen ounces of coarsely pulverized antimonial sulphuret; cover the crucible and keep up the fire; in a few minutes the mixture will be in perfect fusion, at which time, add little by little, three ounces of nitre, a slight detonation will take place, and the whole will be brought to a state of perfect fusion; then pour it into an iron cone, heated and greased, and strike the sides of it gently as the mass becomes solid to favour the precipitation of the regulus. When cold it

will be found to consist of a button of antimony, weighing about ten ounces, covered with an alkaline ferruginous scorix, from which it is readily separated by a blow with a hammer. This regulus, however, is far from pure, containing both iron and a little sulphur; it is therefore to be remelted, and mixed while in fusion with two ounces of crude antimony and three ounces of nitre; after all detonation has ceased, pour it into an iron cone as before, and separate the regulus from the scorix. Remelt the regulus and project upon it by degrees three ounces of nitre. Separate this regulus from the scorix, and melt it again once more with three ounces of nitre; heat it strongly and rapidly, and pour the whole into a cone; there will be obtained about eight ounces of a beautiful stellated regulus, covered with yellowish white scorix. In this process the whole of the materials employed are eighteen ounces of crude antimony, eight ounces of nails, and twelve ounces of nitre; four separate fusions are required, and the product is eight ounces of regulus.

2. Pulverize and mix together 16 ounces of crude antimony, 12 ounces of tartar, 10 ounces of nitre, and eight ounces of iron filings; project it by degrees into a red hot crucible, a strong detonation will take place, and the mass will enter into fusion; keep it at a full heat for a few minutes, and then pour the whole into an iron cone; when cold, there will be found beneath the scorix a pure stellated martial regulus, weighing about six ounces.

3. Heat in a crucible till they are white hot, five ounces of horseshoe nails, and then add 16 ounces of crude antimony, coarsely pounded; the two will presently melt down together, and as soon as the mass is in very liquid fusion, project at several times one ounce of pulverized nitre; during each projection there will be a detonation, and when the last has ceased, increase the heat for a few minutes, and then take out the crucible and allow it to cool gradually; there will be found at the bottom of the vessel a perfectly pure martial regulus.

In the reduction of antimonial sulphuret by iron, the success of the experiment depends much upon the temperature; a high heat briskly applied, and of short continuance, so as to bring the whole into very liquid fusion, is far preferable to an inferior heat of longer continuance: since the regulus separates more completely from the scorix, and the proportion of metal, lost by evaporation, is not nearly so considerable.

The antimony obtained by roasting or scorification, by proper care, may be rendered absolutely pure; but the martial regulus, though purified so as to exhibit the stellated appearance on its surface, which is usually reckoned characteristic of purity, is, in fact, an alloy of antimony and iron; hence it is harder and more difficultly amalgamable than the former; and when reduced to fine powder, is, according to Lemery, attracted by the magnet.

§ 5. External Characters and Physical Properties of Reguline Antimony.

This metal, when perfectly pure, is of a dusky white colour, between that of tin and iron; it appears to be absolutely destitute of ductility, and may easily be reduced in a mortar to a fine powder; it is moderately hard, and may be cut without much difficulty by a common knife. Its fusibility is not quite so great as that of zinc, since it requires to be made red hot before it flows. Its specific gravity, according to Bergman, is 6.86; but by the later experiments of Brisson, amounts to 6.7021. Its fracture is usually broad foliated, but sometimes the facets are so minute as to give it almost a granular appearance; in general the slower it is cooled, the broader will be the plates of which it

is composed, but this rule is not without its exceptions. Antimony is one of the most easily crystallizable of all metals, and this tendency is shewn in a striking manner by the appearance of a radiated star, or of pinnated leaves, like those of fern, with which the convex surface of a mass of antimony that has been allowed to cool slowly is generally covered. It was this circumstance that induced the alchemists to pay so much attention to antimony; by their heated imaginations every thing singular was considered as a type or mysterious hint, and thus confounding sacred with profane, they denominated this appearance, which in truth is only the result of a confused crystallization, the eastern star that was to conduct the sages (themselves) to the cradle of their king, i. e. to the method of making gold, the king of metals. These rays or branches are merely superficial as Lemery demonstrated, by making transverse sections of various masses of stellated regulus. If a crucible, furnished with a plug at the bottom is filled with melted antimony, and the fluid part allowed to run out by withdrawing the plug as soon as a crust is formed on the surface of the metal, there will be found under the crust various crystalline groups, consisting of cubes, of lengthened rectangular parallelepipeds, or ramifications, made up of small octohedrons implanted in each other, and frequently aggregated into a trihedral pyramid, with furrowed sides. The primitive crystalline form of antimony has hitherto eluded the sagacity of Havy: it is divisible at the same time parallel to the faces of a regular octohedron, and of a rhomboidal dodecahedron.

§ 6. *Oxyds of Antimony.*

The action of air and moisture at the usual temperature upon reguline antimony is scarcely perceptible, as it remains a long time without even tarnishing, and the oxydation is never more than merely superficial. By a low red heat, however, and the contact of air, this metal is gradually converted into a greyish white oxyd, volatile at a higher heat, and capable of being more completely oxygenated. When antimony is brought quickly to a bright red heat, and then exposed to the air, it is rapidly converted into a white oxyd, which being volatile, exhales in the form of a dense smoak from the surface of the melted metal, and condenses in the upper and cooler part of the crucible into beautiful crystalline needles of a snowy or silvery white; which have obtained the name of argentine flowers of antimony, or snow of reguline antimony. As this crystallized oxyd is not easily obtained in a common crucible, we shall mention the method of preparing it as given by Beaumé. "Place a wide cylindrical earthenware tube closed at one end in a wind furnace, so that it shall remain in a slanting direction, with the open end protruding a little way through a hole or door in the side of the furnace; and to prevent the inside of the tube from being too much cooled, an earthenware stopper must be prepared to fit loosely into the open mouth of the tube.—The apparatus being properly put together, light the fire, and when the bottom of the tube is red hot, introduce the antimony in small pieces, and close the mouth of the tube with the stopper. The metal being melted, will begin in a short time to smok, and the crystalline oxyd will be deposited in the upper part of the tube, from which it may be scraped from time to time with a clean iron spoon. The first portions are generally yellowish on account of a small quantity of sulphur contained in the metal; this, however, is soon burnt off, and the succeeding flowers are of a pure brilliant argentine white colour." Although antimony is not combustible at so low a temperature as zinc, yet, at a white heat, with access of air, it burns with a white flame, throwing out copious vapours of white oxyd. Another

pretty experiment on the inflammation of antimony, was discovered accidentally by Cit. Gillet. Place a small piece of antimony on a bit of charcoal, and fuse it by the blowpipe; when it is boiling hot, shake it gently out so that it may fall three or four feet through the air; it presently divides into a few globules, which immediately take fire, and explode when they reach the ground like fireworks.

The crystalline oxyd, like the other white oxyds that we shall have occasion to notice in the next section but one, appears to be a saturated combination of antimony and oxygen in the proportion, according to Thenard, of 80 of the former to 20 of the latter; in many of its properties it resembles the metallic acids; it is soluble, though but sparingly, in water, has a decided taste, forms a crystallizable salt with potash, from which it may be separated by the action of any of the stronger mineral acids. When heated by itself in a porcelain tube, it may be reduced nearly to the metallic state; the first impression of the fire converts it into a yellow oxyd, very easily fusible into glass, and containing 0.19 of oxygen; afterwards, as the heat increases, it assumes a reddish brown tint, and holds only 0.16 of oxygen; at length it arrives at the state of black oxyd, wanting only to be deprived of 0.02 of oxygen, to return to the metallic form. Oxyd of antimony, by hasty fusion in a crucible, is converted into a vitreous mass, which, when transparent, is of a yellowish orange colour, and is called *glass of antimony*; and when opaque, is of a brown colour, and has hence obtained the name of *liver of antimony*. These preparations, however, must not be confounded with the glass and liver of antimony, as procured from the sulphuret of this metal.

§ 7. *Action of Acids on Antimony.*

1. The *sulphuric acid*, when cold, appears to exert no action on antimony; but when boiling hot, it is decomposed by this metal, a copious extrication of sulphureous acid gas takes place, accompanied by violent effervescence; and if the mixture is distilled to dryness in a retort, a small quantity of sulphur sublimes, and a mass of white antimonial oxyd is at the bottom of the vessel. When the process is stopped short of desiccation, there remains in the retort a white bulky, soft, and moist mass, and this, when washed with a little water, occasions a copious deposit of white oxyd, while the clear liquor becomes diluted sulphuric acid, holding in solution a small portion of antimony; a larger quantity of water added to this liquor, precipitates what remains of antimonial oxyd. The action of heat also has the same effect, for while evaporating it becomes turbid without forming crystals; the same takes place on the mixture of any alkaline solution. If the unwashed sulphated oxyd of antimony is mixed with common salt and distilled, the result is oxymuriat, or butter of antimony.

2. *Sulphureous acid*, whether hot or cold, has no effect whatever on reguline antimony; it will, however, decompose most of the acid salts of this metal, especially that formed by muriatic acid. If sulphureous acid is added to a solution of muriated antimony, a white powder is thrown down of an acrid and harsh taste, which appears to be a true insoluble sulphite of antimony, decomposable with extrication of the sulphureous acid by the sulphuric, or by mere heat in close vessels; the residue of this last operation is a reddish brown matter, soluble in fixed alkali, and again precipitable by the muriatic acid in form of kermes or hydrofulphurated oxyd of antimony.

3. *Nitric acid*, especially the yellow, is speedily decomposed on antimony, even in the cold. During the mutual action of these two bodies, a large disengagement of nitrous gas takes place, and the metal is converted into a white oxyd so rapidly, as sometimes to cause actual inflamma-

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tion. In its eager absorption of oxygen, a great analogy subsists between antimony and tin; for not only the nitric acid, but even the water that is mixed with it, are decomposed by the antimony; the azot of the former, and the hydrogen of the latter of these fluids, combine together during their nascent state, and produce ammonia, which with the undecomposed acid, forms nitrated ammonia, the crystals of which salt, thus unexpectedly occurring, have sometimes been mistaken for nitrat of antimony. If the white oxyd, resulting from this chemical action, is mingled, before it has been washed, with lime or caustic alkali, antimoniocal gas will be disengaged. The greatest part of the antimoniocal oxyd remains uncombined at the bottom of the vessel; a very small quantity, however, is taken up by the supernatant acid; but even this little is precipitated by water, by evaporation, and by mere standing for a few days. The white nitrous oxyd is fully saturated with oxygen, of which it contains, according to Theuars, about 30 per cent. It is considered as one of the most refractory and irreducible of the metallic oxyds, which it certainly is when treated with the common fluxes; but when rubbed with a little regulus of antimony, and heated in a close vessel, it becomes in succession yellow, orange, brown, and then black; containing only about two per cent. of oxygen, as is related of the argentine flowers in the former section.

4. *Muriatic acid*, when assiled by heat, is capable of dissolving a small proportion of antimony; part of this, however, is again deposited in the form of a white oxyd as the liquor cools: by evaporation it may be brought to crystallize in small acicular deliquescent needles. The oxyd of antimony is more easily soluble in muriatic acid than the metal itself, and also in greater proportion: it crystallizes, according to Monnet, in brilliant plates, like the boracic acid, and is decomposable by water.

5. The *oxygenated muriatic acid*, when in the form of gas, exerts a very striking action on reguline antimony: if this metal, previously reduced to a fine powder, is thrown by small quantities at a time into a vial filled with the acid gas, each parcel will be found to take fire, and burn with a white flame, throwing out, at the same time, a number of bright sparks, and thus forming a most beautiful shower of fire. The antimony is converted into a white muriated oxyd. The liquid oxymuriatic acid changes the metal into a powdery oxyd, but holds a very small quantity of it in solution; no doubt on account of the great proportion of water, which even the most concentrated liquid oxymuriatic acid necessarily contains. If a solution of either the muriat or oxymuriat of antimony be gently evaporated nearly to dryness, and afterwards exposed in a retort to a low sand heat, a thick oleaginous liquid will come over, that by cooling concretes into a soft mass, called, from its consistence, by the ancient chemists, *butter of antimony*; the above, however, is not the actual method of preparing this salt in the laboratories; it is more expeditiously made by taking advantage of the superior affinity which antimony has over mercury: for this purpose some reguline antimony is well mixed in a mortar with twice or two and a half times its weight of oxymuriated mercury (corrosive sublimate); during trituration, much heat is extricated, the evidence of a chemical action between the two substances: the mixture being put into a wide necked retort, with a suitable receiver adapted, is exposed in a sand bath to a gentle heat. During the first half hour, a small quantity of a clear liquid passes into the receiver, which is afterwards followed by a thick liquor that concretes by cooling in the receiver, and often in the neck of the retort into a white mass; this is the *butter of antimony*. A moderate fire is

kept up till nothing more comes over, at which time the receiver is unluted, and emptied of its contents; there remains in the retort fluid mercury with some muriated oxyd of antimony. By continuing the distillation at a greater heat, the mercury is volatilized, and collect'd in a liquid state in the receiver. It is to be remarked, however, that there are two objections to this process; the one, that if the mercurial salt is in too great proportion, a little of it will rise with the butter of antimony, and be dissolved in it; the other objection is, that if too little oxymuriat is used, the produce will be much diminished, as a considerable proportion of the antimony will be merely in the state of muriated oxyd. The best way, therefore, of preparing this salt, is to mix the unwashed sulphat of antimony (1. § 7.) with common salt and black manganese, and distil the whole to dryness.

The London Pharmacopœia orders the sublimed muriat to be made thus. Mix together one part of crocus of antimony with two parts of decrepitated salt; put the mass into a glass retort, and add one part of sulphuric acid; then distil, and what comes over is butter of antimony.

Butter of antimony, though solid at the usual temperature of the atmosphere, liquefies at a very gentle heat, and by slow cooling crystallizes in large parallelepipeds. It is intensely caustic, destroying the organization both of animal and vegetable substances; by exposure to the air and light it becomes coloured, and deliquesces into a thick oleaginous fluid. When dropped into distilled water, it is for the most part decomposed, and a copious white precipitate is thrown down, which is little else than a perfect oxyd of antimony. This, after being washed and dried, forms the *powder of ALGAROTH*, or *mercurius vite*. The clear liquor separated from the precipitate still holds a little antimoniocal oxyd in solution, as is obvious from a further precipitation taking place on the addition of an alkali.

Scheele has given the following method of preparing powder of algaroth, in an essay of his on this very subject. To two parts of sulphurated antimony add three of nitre, and detonate the mixture in a hot crucible; pulverise the mass, and stir in one part of this to three of water, with one of sulphuric acid, and one of common salt. Let the whole digest together for twelve hours in a sand bath, and strain it through a cloth; separate the clear liquor, and add to the residue more salt and diluted sulphuric acid, which digest and filter as before. Mix the two liquors together, and pour them into a large quantity of boiling water; a white precipitate immediately takes place, and this, when washed and dried, is the powder of algaroth.

If to any quantity of sublimed muriat of antimony an equal weight of nitric acid is added, the liquor becomes highly coloured, copious orange-coloured fumes are disengaged, and a considerable degree of heat is excited; after a while, a white magma of oxyd is deposited. If before the latter effect takes place, the liquor is evaporated to dryness, a pure white oxyd remains behind; and this being three times more abstracted with fresh nitric acid, and afterwards heated moderately red in a crucible, assumes the appearance of a pulverulent mass, white at the surface, and rose-coloured beneath; this being ground in a mortar, so that the white and coloured parts may be thoroughly mixed, is known in the shops and old pharmacopœias by the name of *bezoar mineral*; and, in fact, is nothing more than a perfect oxyd of antimony, holding, perhaps, a very small portion of the acid.

6. *Nitro-muriatic acid* is the best solvent of reguline antimony; if the acid is made moderately warm, and the metal put in by small pieces at a time, taking care not to add

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add a second till the first is completely dissolved, it may be thus charged with a considerable proportion of antimony, only a small part of which is deposited by cooling. This, however, like all the preceding antimonial solutions, is almost wholly decomposed by the addition of distilled water. A piece of iron or zinc also causes a precipitation of a black oxyd (§ 6.), almost in the metallic state, which, according to Theuars, when dried at a low temperature, acquires the properties of a pyrophorus, inflaming spontaneously by contact with the air.

7. The *fluoric, boracic, and carbonic* acids, have no action on reguline antimony; they are capable, however, of combining with its oxyds, forming salts, the particular properties of which have not been examined.

8. The action of all the *metallic acids* on antimony, except the arsenic acid, is wholly unknown: and for this see *ARSENIAL of Antimony.*

9. The *vegetable acids* produce no other effect on metallic antimony, except blackening its surface; they dissolve, however, its oxyds without much difficulty, forming salts, a few only of which have been properly examined: these we shall proceed to particularise.

10. The *antimoniated tartar, or emetic tartar*, is the most important of the combinations of antimony with the vegetable acids. It was first prepared by Adrian Mynsicht, in 1631; and from that time to the present, has attracted the notice of chemists and physicians. Bergman, in his admirable essay on Emetic Tartar, was the first who gave any thing like a consistent account of the rationale, and the various chemical affinities concerned in its preparation; and the subject has of late been finally elucidated by the able and sagacious experiments of Theuars.

The tartareous acid, the acidulous tartrate of potash (or cream of tartar), and the tartrate of potash (soluble tartar, or tartarized tartar), are each capable of dissolving and combining with oxyd of antimony; an inquiry, therefore, into the chemical properties of emetic tartar, necessarily includes the consideration of the above different menstrua, and thus renders it a very complicated affair.

Pure tartareous acid and boiling water, digested on any of the oxyds of antimony, except that which is saturated with oxygen, as the diaphoretic antimony, may be made to take up one-third or one-fourth part of its own weight; and the solution, when concentrated by evaporation, and allowed to cool gradually, usually deposits a few crystalline grains, but is for the most part converted into a brownish gelatinous mass, which, at a red heat, is charred, and the antimony contained in it is partly extricated in the form of a white smoke, and partly reduced to metallic grains.

A solution of tartrate of potash, at a boiling temperature, takes up at least as much oxyd of antimony as tartareous acid is capable of dissolving; the liquor becomes slightly alkaline, and upon evaporation, yields a number of crystalline grains.

A solution of tartareous acidulum, or cream of tartar, being boiled with any of the simple oxyds, or sulphurated oxyds of antimony, dissolves a considerable quantity; and by evaporation and cooling, deposits elongated octahedral crystals of emetic tartar.

The taste of this triple salt is slightly harsh and metallic; it reddens vegetable blues; it effloresces in the air, loses its transparency, becomes of a dead white, and is then pulverulent: it requires for its solution about 40 times its weight of boiling water, and nearly twice as much at the common temperature. Sulphuric acid precipitates from it a sulphated oxyd of antimony, leaving the cream of tartar pure; the alkalies, both pure, and carbonated, decompose it in part only, a loose white oxyd being

precipitated by the first, and by the second, a carbonated oxyd, which, in a short time, crystallizes in the form of divergent rays. If either tartareous acid, or tartrate of potash, is added to the solution of emetic tartar previously to pouring in the alkali, there will be no precipitate; for the tartrate of potash produced by the alkaline addition, or already existing in the fluid, immediately dissolves the antimonial oxyd; and for the same reason, a simple solution of emetic tartar cannot be wholly decomposed by any quantity of alkali; and hence probably have arisen the great seeming differences in the proportion of its constituent parts, as the salt has been analysed by means of a pure alkali, a carbonated alkali, or other re-agents. According to Theuars, the crystals of emetic tartar, from whatever antimonial oxyd they are prepared, and whatever has been the proportion of ingredients employed, contain in a given weight precisely the same quantity of antimony, of tartareous acid, of potash, and water; and even the degree of oxydation of the metal is also invariable. His method of analysing this salt, is first to ascertain its water of crystallization, by drying in a heat just not sufficient to decompose it; secondly, to dissolve the emetic tartar, and precipitate the antimony by sulphurated hydrogen; thirdly, to ascertain the tartareous acid by dropping in acetite of lead; fourthly, to determine the quantity of potash by igniting the residue, and extracting the alkali by dilute nitrous acid. By a very careful analysis, conducted in the above manner, he found 100 parts of emetic tartar to contain 38 oxyd of antimony, 34 tartareous acid, 16 potash, and 8 water, besides 4 loss. But the tartareous acidulum, which supplies both the acid and alkali to the emetic tartar, contains 57 tartareous acid, 33 potash, and about 10 water and loss; or 70 tartrate of potash, and 20 tartareous acid in excess. Hence it follows, that there is a greater excess of tartrate of potash in cream of tartar over the acid, than exists in the emetic tartar; and this excess of tartrate of potash is found in the mother water, in which the crystals of the emetic are decomposed; when, therefore, the whole is evaporated to dryness, as is often the case in the preparation of emetic tartar, there is a portion of antimoniated tartrate of potash superadded, which, no doubt, modifies its effect, and produces variations, which are unjustly charged to the emetic tartar. Another objection to evaporating the whole mass to dryness without separating the crystals, is, that the tartrate of lime which exists in a variable proportion in all cream of tartar, according to Vauquelin, is also mingled with the antimonial salt, and weakens its operation. To make, therefore, emetic tartar uniformly of the same strength, select an antimonial oxyd somewhat below the maximum of oxydation, and digest it in a hot saturated solution of cream of tartar, taking care that the oxyd shall be rather more than enough to saturate the salt (if the grey oxyd from the sulphuret of antimony is made use of, or even the common glass of antimony, as these are not already sufficiently oxydated, there will be a decomposition of water, and a small quantity of kermes will be formed); when the liquor refuses to take up any more antimony, filter and evaporate till a pellicle begins to be formed; allow the solution to cool, and select all the octahedral and tetrahedral crystals that are deposited; wash them in cold water, and again dissolve in hot water, and crystallize. For the particular formulae of the different pharmacopœias, see § 12.

11. The only remaining antimonial salts of any consequence, are the oxalat and acetite of antimony; and we are as yet acquainted with very few particulars even concerning these. The oxalat of antimony is easily formed, and concretes into small crystalline grains; these are soluble in wine, giving it an emetic quality; and this preparation has

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been used by some medical men instead of the common antimonial wine. The acetite of antimony being known before the discovery of emetic tartar, was recommended for the same uses to which the former is now applied, by Angelo Sala. Neither the oxalat, nor the acetite, however, of this metal appear to be possessed of any superiority over the emetic tartar, and are now, we believe, wholly disused.

§ 8. Action of Neutral Salts on Antimony.

Muriat of soda is said to be in part, at least, decomposable by antimony at a red heat; but the experiments on this subject are contradictory, and require to be performed afresh with care and exactness.

Sulphat of potash (and probably all the alkaline sulphats), is decomposed without any difficulty. This was first shewn by Monnet; he fused together in a crucible two parts of sulphated potash, and one of antimony; the metal disappeared, and he obtained a yellow, semi-vitrified mass, intensely caustic, of antimoniated sulphuret of potash; which, when washed with warm water, depolished, by cooling, a hydro-sulphurated oxyd of antimony. The metal, therefore, in this case, became oxydated at the expence of the sulphuric acid; and the sulphuret of potash resulting from this combined with the metallic oxyd, rendering it partly soluble in hot water.

Oxymuriat of potash has a very powerful action on antimony, as it has indeed upon all the easily combustible metals: if equal parts of this salt, and antimony previously reduced to a fine powder, are mixed together, and struck briskly on an anvil, or any suitable hard body, a remarkably loud and vehement detonation takes place: if the mixture, instead of being struck, is poured into sulphuric acid, or rather if the acid is poured upon the powder, a hissing noise is produced, red sparks are emitted, and the metal is converted into an oxyd.

Nitre and antimony, in equal parts, or two parts of the former to one of the latter, being thrown into a red-hot crucible, detonate with a vivid flame, the acid of the nitre is decomposed, and the metal is completely oxygenated. The white mass remaining in the crucible being pulverised and digested in hot water, is separated into two parts, one soluble, and the other insoluble: the latter of these was formerly considered as a pure oxyd of antimony, but Theuars has shewn, that it contains about one-fifth of potash, intimately united with the oxyd, which appears to act the part of an acid: it was formerly known by the name of *reguline diaphoretic antimony*, but appears, in fact, to be a kind of *antimonite of potash*, rendered insoluble by an excess of oxyd; the soluble part differs from the other merely in the proportion of its ingredients, being an *antimoniated potash*, crystallizable and decomposable, with precipitation of its oxyd, by any of the mineral acids. As, however, this is generally prepared from the sulphuret of antimony, we shall refer the reader for further particulars to the next section.

§ 9. Sulphuret of Antimony—Glas of Antimony—Kermes, &c.

1. Sulphuret of antimony may be prepared artificially, by pulverizing a pound of reguline antimony, and mixing with it eighteen ounces of flowers of sulphur; this being put into a crucible, and brought to a low red heat, melts into an uniform mass, of the weight of about two pounds, which, when cold, exhibits a striated appearance, exactly similar to the native grey sulphuret (§ 3.), and is possessed of all the same physical and chemical properties; hence, for cheapness sake, all the preparations from the antimonial sulphuret are made with the native ore, just separated by fusion from the stony and earthy matters that it is mixed with, which is

known in commerce by the name of *crude antimony*, or *antimony of the shops*.

2. If the sulphuret of antimony is exposed to a red heat, with access of air, most of the sulphur is volatilized, and a small but variable proportion of the metal is carried up at the same time: this operation being performed in a melting-pot, surmounted by a series of aludels, the vapour as it rises, is condensed in the form of a light pulverulent substance, called *flowers of antimony*. The flowers, at the beginning of the process, are of a greyish yellow colour, and consist of sulphur, with antimony, either in the metallic state, or at least very little oxydated; the next portions are orange-coloured, and those which rise towards the end of the operation, are almost yellow, and consist of little else than pure sulphur. What remains behind at the bottom of the melting-pot is a greyish ash-coloured oxyd, still holding a little sulphur: among the old chemists it was known by the name of *grey calx of antimony*; by the moderns it is called the *grey sulphurated oxyd of antimony*. It is most commonly prepared by slow roasting of the crude antimony in a flat dish or reverberatory furnace, and the sulphur and metal that are volatilized with it are allowed to escape. See § 4.

3. The grey sulphurated oxyd, when urged by a sufficient degree of heat, forms a transparent glass, possessing, according to circumstances, every shade of colour from light yellow to the deepest hyacinthine red; this is the *glas of antimony*, or, according to the modern nomenclature, the *vitreous sulphurated oxyd of antimony*. In order to prepare this, any quantity of the grey oxyd is put into a crucible, and kept at a full red or low white heat till it enters into perfect fusion; soon after this has taken place, the end of a clean tobacco pipe should be dipped in it; and if the matter that adheres to the pipe is transparent, and may be drawn into a thread like common glass, it has been heated sufficiently: the crucible is then to be removed from the fire, and its contents are to be poured on a compact flat stone or plate of copper. When the glass has become solid, it should be removed into a covered vessel, as it cracks and flies while cooling.

It sometimes happens in making the glass of antimony, that the grey oxyd begins to melt as soon as it is red hot, and continues limpid like water, without acquiring the property of drawing into threads like glass: at other times, on the contrary, even the long continuance of a white heat will do no more than bring it to a pasty consistence. In the former case, the glass is of an unusually deep colour; in the latter of a very light colour. This inequality arises from a difference in the grey oxyd; if it has been too little roasted, it flows with the first impression of the heat, but when more completely oxydated and desulphurated, it proves very refractory: this last, however, may be remedied by throwing in a little crude antimony in powder, which will immediately determine its fusion and vitrification; and in this case there are always found at the bottom of the crucible a few grains of very pure regulus of antimony.

If the previous desulphuration has been very slight, the oxydation also will have proceeded but a little way; and the glass produced, though possessed of a vitreous fracture, is perfectly opaque, and of a dark liver colour, hence it has obtained the name of *liver of antimony*: the same name, however, has been given to a preparation of crude antimony and nitre, which will be mentioned presently.

4. The action of acids upon the sulphuret of antimony is upon the whole so similar to their action on the regulus, as described, § 7, that it will only be necessary to point out the circumstances in which they differ. In general, the metallic part of the sulphuret is more easily dissolved and retained

retained

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tained by acids than the mere regulus is, and the sulphur of the compound is not at all or very little acted upon. The sulphuric and nitric acids are decomposed with considerable energy, on pulverized sulphuret of antimony; sulphureous acid in one case, and nitrous gas in the other, being copiously disengaged, the metal is oxydated, and remains intimately mixed, though no longer combined with the sulphur, very little of it being actually dissolved by these acids. The muriatic acid, even when cold, will decompose a large quantity of sulphuret, during which process there is a considerable extrication of sulphurated hydrogen; if the mixture is heated, the whole of the metal enters into solution, leaving the sulphur at the bottom unaltered; a small portion, however, both of the sulphur and metallic oxyd is dissolved in the hydrogen, and escapes in a gaseous form; for Bergman observed, by performing this experiment in a vessel with a long narrow neck, that the sulphurated hydrogen, in its passage through, deposited a little kermes, or hydrofulphurated oxyd of antimony. The best menstruum, however, for crude antimony, is a nitro-muriatic acid, composed of one part nitric, and three parts muriatic acid; the metallic oxyd is entirely taken up, part of the sulphur is carried off by the hydrogen gas, another part is acidified and mixes with the other acids, and the remainder, about 26 per cent. is left at the bottom of the vessel in form of a white powder. In § 7, we have given an account of the original method of preparing the butter of antimony by sublimation of the regulus with corrosive mercurial muriat: the same antimonial salt may be obtained by using sulphuret of antimony, but instead of obtaining the mercury in a metallic state, it is combined with the sulphur of the antimony into a violet-coloured mass, which, at a full red heat sublimes, and is deposited in the upper and cooler part of the vessel, in needle-form crystals of cinnabar, hence called *cinnabar of antimony*.

5. The fixed alkalies are capable by the dry way of combining with sulphurated antimony, forming several important preparations. If 15 ounces of pulverized crude antimony, 12 ounces of decrepitated sea salt, and 3 ounces of tartar, are mixed together, and fused in an earthen crucible, there will be found, on breaking the vessel when cool, that it contains two substances; the upper is of a lighter colour than the other, and consists of the salt with a little sulphur; the inferior substance is very heavy, opaque, of a black colour, and on being broken, exhibits a shining vitreous fracture: it has obtained the name of *medicinal regulus*, though improperly, being a simple alkalized sulphuret of antimony, in which the metal is probably uncombined with oxygen, and nearly saturated with sulphur. A similar preparation to this is the *ruby of antimony*, or *magnesia opalina*, differing, however, in containing less sulphur, and in the metal being perhaps more oxydated. It is prepared by mixing equal parts of muriated soda (sea salt), nitre, and crude antimony, and fusing the whole in a crucible; there is a large quantity of scoria in this as in the former process, and underneath them is a compact vitreous mass transparent in thin shivers, and, if well made, of a deep, somewhat smoky-red colour, and brilliant semi-metallic lustre. Neither of these preparations is deliquescent or soluble in water, on account of the small proportion of alkaline salt that they contain. By increasing, however, the dose of alkali, the mass becomes soluble; thus, if to one part of sulphurated antimony we add two parts of pure dry pearl ash, we obtain by fusion a compact reddish-brown mass of alkaline sulphuret of antimony, and a little of the metal in its pure reguline state is found at the bottom of the crucible. If the whole of the antimony is required to be dissolved in the sulphurated alkali, as is the case in the preparation of kermes, it is requisite to add to the above ingredients about

one-twentieth of their weight of sulphur. Hence it appears, that the sulphur of the crude antimony is divided between the metal and the antimony, in the compound ratio of their weights and their respective affinities for sulphur, in consequence of which some of the antimony is entirely desulphurated, and remains in an uncombined state, while the remainder being only partially desulphurated, unites into one mass with the sulphurated alkali. If this alkaline sulphuret of antimony, coarsely powdered, is boiled in pure water, nearly the whole is held in solution as long as the liquor continues hot, so that it may be passed hastily through a filter; but in proportion as the liquor cools, a copious precipitation takes place of a bulky, flocculent substance, whose colour is a deep brick-red approaching to that of the kermes insect, whence it has been called *kermes mineral*: after the deposition of kermes has ceased, the liquor being separated from it by a filter, is of a wine-yellow colour; and upon the addition of any acid, a still further precipitation is brought about, of an orange yellow powder, which is called the *golden sulphur of antimony*. Kermes may also be prepared in the humid way, as was first shewn by Lemery in the year 1707. Since that period a multitude of processes have been published by the French chemists for the preparation of this substance; none of them, however, appear to be essential improvements of Lemery's original method; and as this has received the high sanction of the observant and accurate Beaumé, we shall select it for the use of our readers. Put into a clean iron pan five or six parts of pure liquid fixed alkali, with fifteen or twenty parts of water; set it over the fire to heat, and as soon as it has begun to boil, stir in some well levigated sulphuret of antimony, equal in weight to one-sixteenth of the alkali; stir the mixture well, and when it has boiled for a minute or two, throw the whole on a filter, so that the clear liquor may pass through while hot; a large quantity of kermes will be deposited while it cools, which, after being separated from the alkaline solution, is to be washed first in cold, and then in hot water, till the water comes off quite insipid; the powder being then dried in the shade by a gentle heat, and levigated and passed through a fine sieve, is to be kept in a well-closed phial for use. The alkaline liquor, when it has ceased to deposit kermes, may be made to yield the golden sulphur, by saturating it with dilute sulphuric acid. In this process by the humid way, as in the other by the dry way, a partition of the sulphur takes place between the alkali and the metal, by which a portion of this last is left undissolved in the form of a grey powder; and this, by simple fusion in a crucible, is reduced to a mass of regulus. According to the French chemists, both the kermes and golden sulphur are *hydrofulphurated oxyds of sulphuret of antimony*: and Theuars, in his experiments on the antimonial oxyds, has given the following as the result of his analyses of these two substances, viz. Kermes mineral contains,

72.760 brown oxyd of antimony,
20.298 sulphurated hydrogen,
4.156 sulphur,

97.214
2.786 lbs.

100.000

Golden sulphur contains,

68.3 orange oxyd of antimony,
17.877 sulphurated hydrogen,
11 to 12 sulphur.

98.177

The theory concerning their formation is, that the alkaline antimonial sulphuret coming into contact with water, decomposes it; that the oxygen of the water combines with the sulphurated metal, while its hydrogen dissolves some of the sulphur with which it is in contact, and unites to the sulphurated metallic oxyd in different proportions, according to the different degrees of oxydation of these oxyds: that when the antimony is the least oxydated, it unites with the greatest quantity of sulphurated hydrogen, and becomes insoluble in alkali, forming the kermes; and, on the other hand, when more oxydated, it unites with less sulphurated hydrogen, and remains dissolved in the alkali till precipitated thence by an acid, forming the golden sulphur. Kermes may also be made by passing sulphurated hydrogen through a solution of muriat of antimony; and this among others is adduced as a proof of the kermes containing the metal in an oxydated state. Notwithstanding, however, the excellent experiments of Berthollet and Theuars on this subject, many very strong objections may, in our opinion, be urged against their theory: to enter into them at full length would be inconsistent with the plan of this work, but we shall resume the subject when treating of the *Metallic Hydrosulphurets*.

6. The nature of the preparations resulting from the mutual action of nitre and sulphurated antimony, depends very much on the proportion which the nitre bears to the other ingredient. The nitrous acid is consumed in acidifying the sulphur and oxydating the antimony; and the alkaline base of the nitre unites with the sulphur, if any remains, with the sulphuric acid forming sulphat of potash, and with the metallic oxyd. When the nitre considerably exceeds the antimonial sulphuret, as in the preparation of diaphoretic antimony, the sulphur is entirely oxygenated, and partly escapes in the form of sulphureous acid gas, while the remainder, with part of the alkali, forms sulphat and sulphite of potash; the metal also is completely oxygenated at the expence of the nitre; and the oxyd hence resulting, combines with the potash in two proportions; that portion which is united to a large quantity of alkali is rendered soluble, and the other remains insoluble. Hence when the result of the above process is lixiviated with hot water, we find dissolved in the liquor, and may obtain, in a crystalline form, sulphat and sulphite of potash, some undecomposed nitre, and antimonite of potash; the undissolved residue, or diaphoretic antimony, consists of the perfect oxyd of antimony combined with about a fifth of potash.

When the nitre and crude antimony are in equal proportions, only part of the sulphur is acidified, and the metal is at a low state of oxydation; by the action of warm water the mass is divided into an insoluble and soluble portion; the first, called *crocus metallorum*, seems, like the glass of antimony, to be merely a sulphurated oxyd; the latter consists of kermes, of golden sulphur, and sulphat of potash. For further particulars see § 12.

§ 10. *Phosphuret of Antimony.*

Pelletier, in his *Essays on Phosphorus*, has given the three following processes for combining antimony with that highly inflammable substance. 1. To one ounce of regulus of antimony add an equal weight of glass of phosphorus, and one dram of charcoal; pulverize the whole well together, and fuse the mixture in a covered crucible; the result is a white metallic mass of phosphorated antimony, very brittle, with a lamellar fracture, and nearly cubical fragments. When a little piece of it is put upon lighted charcoal, and exposed to the action of the blowpipe, it emits, at the moment of fusion, a faint green flame, and then volatilizes like pure antimony, in the form of white flowers.

2. Equal parts of regulus and glass of phosphorus furnish by fusion a metallic mass, whose fracture displays minute facets, and in every other respect is similar to No. 1. 3. A phosphuret of antimony, with the same properties as the former, may also be prepared by projecting on the melted regulus small pieces of phosphorus. In this case, however, the crucible must be removed from the fire immediately after the last portions are thrown in, otherwise by a continuance of the heat it would be all volatilized.

The phosphurets of antimony are not applied to any use, and the above are all the facts which we are possessed of concerning them.

§ 11. *Alloys of Antimony.*

1. *Antimony with gold.* See GOLD.
2. *Antimony with platina.* See PLATINA.
3. *Antimony with silver.*

According to Lemery, one ounce of reguline antimony and three drams of expelled silver, being fused together in a strong heat, yielded an alloy of the same weight as the original materials, and similar to common regulus of antimony, but more compact, and not so brittle. Gellert (*Chymie Metallurg.*) relates, that 181 grains of silver being fused with 255 grains of reguline antimony, the alloy was found to have lost during the process 115½ grains; the remainder was very brittle, and in colour similar to regulus of antimony: its specific gravity was = 8.44. But the sp. gr. of the silver being = 9.1, and that of the antimony being = 6.7, the sp. gr. of the alloy, supposing the whole loss of weight to have been antimony, ought to be = 7.56. Therefore the sp. gr. of this alloy is greater than the mean of its constituent parts. It is made no use of.

4. *Antimony with copper.*

These two metals mixed together in nearly equal proportions, form a hard brittle alloy, of a violet colour internally, which is not very soon affected by exposure to the air. Gellert, having mixed together 314 grains of copper, sp. gr. = 8.7, with 464 grains of reguline antimony, sp. gr. = 6.7, obtained an alloy whose sp. gr. was = 8.02. During the fusion there was a loss of 43½ grains; and putting the whole of this to the account of the antimony, the sp. gr. of the alloy ought, by calculation, to have been = 7.49. The sp. gr. therefore of this alloy is greater than the mean of its constituent parts. It is made no use of.

5. *Antimony with iron.*

The general properties of antimony with a very small proportion of iron, or *martial regulus*, may be found above in § 4. Gellert having mixed by fusion 115½ grains of iron, sp. gr. = 8.0 with 173 grains of reguline antimony, obtained an alloy of 63 grains less by weight than the materials. It was brittle, of an ash colour, and contained specks like rust of iron. Its sp. gr. was = 6.92. Now supposing the loss of weight to be placed to the account of the iron, the density of the alloy ought to be = 7.05; its sp. gr. therefore is less than the mean of its ingredients. This alloy was wholly unaffected by a powerful magnet, except one or two particles which appeared to be iron. It is not made any use of.

6. *Antimony with mercury.* See MERCURY.

7. *Antimony with tin.*

These two metals being mixed together in nearly equal proportions, form a moderately hard, very brilliant, and brittle alloy, capable of receiving an exquisite polish, and not easily tarnished; it has therefore been occasionally manufactured into speculums for telescopes. Gellert mixed together by fusion 231¾ grains of tin, sp. gr. = 7.36, with 231¾ grains of antimony; 77 grains were lost in the process, and the alloy was = 6.94 sp. gr. Supposing the whole loss to be

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be attributed to the tin, the density of the compound ought to be = 7.0; its sp. gr. is therefore less than the mean of its ingredients.

8. *Antimony with lead.*

This is the most important of all the alloys of antimony, it being the material of which the common types for printing are made. In proportion as the lead exceeds the other ingredient, will be the ductility of the mass; and the lead may be hardened, and its fusibility unimpaired by so small a proportion of antimony as not to injure its ductility. Gmelin found that equal parts of the two metals produced a porous brittle alloy; one part antimony, and two lead, afforded a more compact metal, but still brittle; one part antimony and three lead, gave a homogeneous metal ductile under the hammer, and much harder than lead: one part of antimony gave to eight of lead an increase of fusibility, hardness and colour, without materially injuring its malleability. According to Gellert, $386\frac{1}{2}$ grains of lead, sp. gr. 11.7, being fused with 333 grains of antimony, experienced a loss of 101 grains. The alloy was brittle, and presented a granular somewhat shining fracture; its sp. gr. was = 9.17; and even if the whole loss of weight is attributed to the antimony, the density by calculation ought to be = 9.12. The mass is therefore of a greater sp. gr. than the mean of its ingredients.

9. *Antimony with zinc.*

Equal parts of the two metals being fused together, formed a homogeneous brittle mass of a light ash colour; the loss of weight was about one-sixth of the whole; as however both these metals are very volatile, it is impossible to say with any certainty what proportion of the loss is to be attributed to each; the sp. gr. of the mass was rather less than that of the antimony, which is the lighter of the two. It is not used.

10. *Antimony with bismuth.*

According to Gellert, equal parts of the two metals being fused together, lost $\frac{1}{3}$ of their weight, and produced an alloy of a lighter colour than bismuth, and very brittle, displaying in its fracture a cubical structure like that metal; the sp. gr. of the mass was = 8.96; whereas, supposing the $\frac{1}{3}$ of loss to have been sustained by the bismuth, the heavier of the two, its density by calculation ought to have been only = 7.94. Not used.

Concerning the combination of the other metals with antimony nothing is as yet known, except merely that cobalt unites easily with antimony, and manganese with great difficulty, and very imperfectly.

§. 12. *The medicinal Virtues, and pharmaceutical Preparations of Antimony.*

This metal affords several of the most valuable articles of the pharmacopœia; and as it has for so many years engaged the attention of chemists and alchemists (of whom a large number have ever been zealous to add to the resources of the healing art), we possess an almost infinite variety of antimonial preparations, all of them valuable as medicines, all enjoying many virtues in common, but a few out of the number recommending themselves peculiarly to the medical practitioner from the uniformity of their composition, or from a greater tendency to one mode of operation rather than another, whereby particular indications in the cure of diseases may be fulfilled.

The first and most unquestionable operation of antimony on the human body is that of an emetic. This operation appears to be always in direct proportion to the activity of the antimonial in every other respect; and it exists in the highest degree in those preparations that are almost too virulent

to be given internally with safety in common cases. Antimonials excite to vomit very speedily, and their action is continued on the stomach for a considerable time; hence they are of a peculiar service, either where any acrid or poisonous matter has been taken which requires to be speedily and effectually removed; or in such cases as incipient fever, where, along with the clearing of the first passages, the physician wishes to prolong the mechanical action of vomiting, so as to induce a relaxation on the skin, and complete perspiration.

The operation of antimony is also extended to the intestinal canal, and hence it proves considerably *purgative*; and this effect takes place, either when the dose has been greater than necessary, merely to produce vomiting; or when the stomach has escaped the action of this powerful mineral. In order to secure the purgative, and prevent the emetic operation of antimony, it is advisable to unite it with some of the usual aperient medicines, whose operation it will thus assist in a considerable degree.

Antimony appears to promote almost all the excretions, and to quicken and stimulate the action of the absorbent vessels. It is therefore eminently *diaphoretic* (or promoting perspiration); *expectorant*, and often *diuretic*. It frequently happens that a single one of the antimonial preparations may be made to produce each of these effects by varying the dose, increasing it to render it a vigorous emetic or cathartic; and diminishing it when the gentle and more gradual operation of a diaphoretic or expectorant is to be secured.

A long continued course of antimonials, in the mildest form, wherein the direct operation of this metal is scarcely at any one time to be detected, has been found of essential service, both in various obstinate cutaneous complaints, and to produce that change of constitution and supposed resolution of internal obstruction, which entitle a medicine to the (somewhat ambiguous) character of *alterative* and *deobstruent*.

We shall now proceed to take notice of those preparations of antimony which are actually in use, or which have acquired a certain reputation in medicine.

Antimonium preparatum (*Pharm. Lond. & Edin.*). This is nothing but the crude antimony or native black sulphuret, prepared for medicinal use simply by triture to an impalpable powder, edulcoration with water, and subsequent drying. In this native mineral the proportion of the sulphur to the metallic part is so large, as to render it almost entirely inert, at least with regard to any sensible operation. It is sometimes, however, though rarely, employed in cutaneous complaints; and formerly it was used in the preparation of decoctions of sarsaparilla, guaiacum, and the other sudorific woods; a quantity of the mineral being tied up in a loose cloth, and suspended in the vessel in which the decoction was preparing; but as scarcely the minutest portion of the antimony could be dissolved by this process, it has properly been omitted.

The crude antimony still, however, is retained in veterinary practice; and it may be given to many animals in doses of several ounces without any apparent operation.

It is likewise the material from which all the other antimonial medicines are prepared, directly or indirectly.

Antimonium vitrefactum (*Pharm. Lond.*), *vitrum antimonii* (*Pharm. Edin.*), Glass of antimony.

To prepare this, the crude antimony is roasted on a tile or other shallow vessel, with a very slow fire, and frequent stirring, till all the sulphur is expelled which can be separated in this method. What remains is a grey powder, which is to be melted in a crucible and an intense fire into a yellowish vitrescent mass, to be poured out on a warm copper or iron plate, and when cold reduced to a very fine powder.

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powder. This preparation is an oxyd of antimony not at its highest point of oxydation, and still retaining a small portion of sulphur, which it is impossible to separate by mere heat. When well prepared it is pretty uniform in its nature, and is a very violent medicine, operating even in small doses as a strong emetic and cathartic. It is scarcely ever employed internally, but is the basis of the emetic tartar, and the antimonial wine, in the London Pharmacopœia.

Vitrum antimonii ceratum (Pharm. Edinb.).

Take one ounce of glass of antimony in fine powder, add it to one dram of yellow wax melted in an iron vessel, heat them gently together for a quarter of an hour, with constant stirring; pour out the mass when cold, and reduce it to powder.

The glass of antimony here incorporates with the wax, and changes its colour from lemon yellow to brown in the process. The wax appears to lessen in a very great degree the activity of the antimony, so that this medicine may be given with safety, and has been much recommended in dysenteries and other bowel complaints. It is rejected from the London pharmacopœia; but retained in those of Edinburgh, Amsterdam, and some others.

A great variety of preparations have been made from the crude antimony by the intermedium of nitre. The operation of this salt on the metallic sulphuret when dephlagrated together, is first to consume the sulphur, and afterwards, if the quantity be sufficient, to oxydate the metal to the highest point. It is remarkable, that the perfect oxyd of antimony, entirely divested of sulphur, and fully saturated with oxygen, appears almost as inert as the crude sulphuret of antimony itself, whilst in the intermediate states of desulphuration, and oxydation, many very active medicines are found.

Of these the two following alone are now retained, the first with a smaller proportion of nitre, the latter fully saturated.

Crocus antimonii (Pharm. Lond. & Edin.). Crocus of antimony, also called crocus metallorum, safran des metaux, and hepar or liver of antimony, by foreign writers.

To prepare this, take one pound of crude antimony, one pound of nitre, and one ounce of common salt, mix them accurately, and project them, a spoonful at a time, in a large crucible heated red hot; when the whole is dephlagrated, increase the fire so as to melt the mass, and pour it out. When cold it will be found to consist of two parts, the upper a whitish saline scoria, to be separated from the lower, which is the crocus of antimony. This is to be rubbed to a fine powder, and repeatedly washed with warm water, till it comes off from the powder quite insipid.

The crocus of antimony is a very violent emetic and purgative, and is seldom employed internally except in farriery. When washed it appears to have the greatest resemblance to the glass of antimony above described, and it is reserved for similar purposes, that is, as a basis for the tartar emetic and some other of the antimonial preparations.

When prepared in the large way, it would appear that it is not necessary to heat the vessel in which the mixture is fired, the heat excited by the dephlagration being sufficient to fuse the whole to the requisite degree. The whitish scoria here produced consist of sulphat of potash (formed by the potash of the nitre and the sulphuric acid, generated by the dephlagration of the sulphur), of the sea-salt, and probably of a portion of uncombined alkali, with some particles of the metallic sulphuret that may have escaped the action of æbe nitre.

Antimonium calcinatum (Pharm. Lond.), *antimonium*

ustum cum nitro (Pharm. Edin.), *calx antimonii*, or diaphoretic antimony.

This is prepared, according to the London college, by projecting gradually in a hot crucible a mixture of one part of crude antimony with three parts of nitre, raising the heat after dephlagration, and continuing it for half an hour; and when cold, pulverizing and edulcorating it.

The Edinburgh college direct one part of the grey powder left after roasting crude antimony for the glass of antimony, to be dephlagrated with only an equal weight of nitre, to be heated for an hour, and afterwards reduced to powder and washed till insipid.

These two preparations are, however, essentially the same, and consist of the oxyd of antimony left after the sulphur has been entirely dissipated by the nitre, itself having been oxydated to a high degree by the same dephlagration.

As the intention of using so much nitre in the first method is to consume the whole of the sulphur as well as to oxydate the metal, it is obvious that a much less quantity of this neutral salt will be sufficient where so much of the sulphur has been driven off by roasting, as is the case in the second method. Formerly a distinction was made between the pulverized oxyd taken before, or after washing; in the first instance being termed *antimonium diaphoreticum nitratum*; and in the second, *antimonium diaphoreticum lotum*; the former, as it contained an alkaline salt, was deliquescent to a certain degree, and required to be preserved in a close vessel. It is now, however, disused, the *washed* alone being retained.

The diaphoretic antimony, owing probably to its high state of oxydation, is mild in its effects, and may be taken in large doses, without producing sickness or purging. It is naturally white and in a pulverulent state, the antimonial oxyd not being truly vitrified in the process, as it is in the preparation of the crocus of antimony, but only involved in the alkali of the nitre, from which it is separated by washing.

The several washings of this substance contain a mixture of sulphat of potash, with part of the nitre undecomposed, and the naked alkali, all holding in solution a certain quantity of antimonial oxyd.

If this compound liquor is decomposed by an acid, the metallic oxyd precipitates in the form of a white powder, which has been called the *cerusse of antimony*, or *materia perlata*; but if the liquor is merely evaporated to dryness, part of the salts crystallize together with metallic oxyd, and form the *nitrum sibiatum*, or *antimoniated nitre of Stahl*. These latter preparations are now in disuse.

Some other antimonial medicines have been prepared with different proportions of antimony and nitre, forming oxyds, all of which act in a similar manner upon the human body, but with different degrees of energy. It should seem that the middle point with regard to the proportions of antimony and nitre, that is, equal parts of each, furnishes the most active antimonial oxyd, which is the crocus; and the medicinal power seems to diminish in proportion as either of these ingredients is used in excess. Thus the completely oxydated metal, the diaphoretic antimony, is possessed of but little activity; and on the other hand, the *crocus antimonii medicinalis*, formed by dephlagrating eight parts of antimony with one of nitre, and consequently but partially desulphurated, is equally mild in its operation.

The *crocus antimonii mitior*, the proportions of which are two parts of antimony to one of nitre, is another medicine now in disuse, which appears to be more active than the last mentioned, but milder than the common crocus.

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The *emeticum mite antimonii* of Boerhaave is made by employing one part of antimony to two of nitre, and is a mild and safe medicine.

Another antimonial oxyd, formerly employed in medicine, is prepared by dephlagrating the *regulus* of antimony with twice or thrice its weight of nitre, and this has also been termed by some the *cerussa antimonii*.

The nitre here, having no sulphur to engage it, acts entirely on the metal, and reduces it to the state of a perfect oxyd, which, when washed, resembles in every respect the washed diaphoretic antimony made with the black sulphuret and three times its weight of nitre. The *regulus*, however, does not require more than its own weight of nitre for this preparation; all the rest is superfluous.

Regulus antimonii medicinalis, vel febrifugum Craanii, an antimonial remedy much recommended by many of the German physicians, and introduced in the former pharmacopœias of Edinburgh, Brandenburg, Strasburg, and others of celebrity, but now disused.

This, which is improperly termed a *regulus*, is prepared by fusing together five parts of crude antimony with four of common salt and one of salt of tartar. On cooling, two substances are found in the crucible, an upper scoria, containing the sea-salt, the alkali, and part of the sulphur, and the lower, a reddish mass composed of the greater part of the metal, deprived of a portion of its sulphur by means of the alkali, and thus rendered more active as a medicine than the crude antimony. It is this lower reddish mass which is the *medicinal regulus*. The use of the common salt seems to be merely to assist the fusion.

Regulus antimonii. The methods of preparing the true *regulus* of antimony have been already mentioned. This metal used formerly to be cast in the form of a cup, and, owing to its slight degree of solubility in various menstrua, a powerful emetic liquor was prepared simply by filling the cup with wine, and suffering it to stand for some hours. At the same time the cup had lost so little of its weight that it would continue to give the same properties to fresh portions of wine for years, or almost centuries, without being corroded through.

In like manner the *regulus* cast into the form of pills would produce the emetic or purgative operation to any number of persons in succession, and hence they were called *perpetual pills*.

These preparations are now, however, discontinued.

Vinum antimonii. (*Pharm. Lond.*) Instead of the *regulus*, the glass of antimony is now employed as the basis of this medicated wine. One ounce of this, in fine powder, is to be digested for twelve days with frequent agitation, in a pint and a half of white Lisbon wine.

This is a very valuable antimonial, principally employed in doses of from ten to sixty drops as a diaphoretic. The quantity of the metal taken up by the wine is extremely small, but is liable to vary in proportion to the acidity of this menstruum, which is one inconvenience attending its use.

Vinum antimonii tartarificati. (*Pharm. Lond. and Edin.*) In the former dispensatory it is directed to be made by dissolving forty grains of emetic tartar in two ounces of boiling water, and afterwards adding eight ounces of white Lisbon wine.

In the latter, twenty-four grains of emetic tartar are simply dissolved in a pint of the wine.

The nature and preparation of the celebrated *kermes mineralis*, or *pulvis carthusianus*, have been already explained; this is at present laid aside, and in its place the London and

Edinburgh pharmacopœias have adopted the precipitate, formed from a liquid solution of sulphuret of antimony in caustic alkali, by the addition of an acid, instead of by mere cooling, as is the case with the *kermes*: this is the

Sulphur antimonii precipitatum vel auratum, the golden sulphur of antimony.

To prepare it, boil for three hours two pounds of crude antimony with four pounds of the aqua kali puri (or caustic lye), diluted with three pounds of distilled water; strain it while hot through a linen cloth, and immediately add gradually dilute vitriolic acid, sufficient to precipitate the sulphurated antimony, which is of a fine golden colour. Wash it well with warm water, and dry in a gentle heat.

The golden sulphur is of a lighter colour than the *kermes*, the latter being generally of a brown or brick red. Both of them consist principally of sulphur, but holding in solution a certain quantity of the metal which renders them emetic or purgative when taken in doses of several grains. The golden sulphur is never used with a view of acting violently or by any sensible operation, but it is employed (often combined with mercury) as a gentle alterative, with a view of keeping up a constant perspirable state of the skin, and determining a gentle increase to the several emunctories. Hence its use in various obstinate cutaneous complaints, and other chronic disorders.

The only solutions of antimony in acids employed in medicine are the *muriated antimony*, more commonly known by the name of *butter of antimony*, and the *antimoniated tartaric of potash*, or the *tartar emetic*. The chemical nature of each of these interesting preparations has been already described.

The *muriated antimony* is much too acrid and violent to be employed for internal purposes. It is used externally as a caustic, especially in farriery. The *powder of algarobis*, or the antimonial oxyd, precipitated from this salt by water alone, or by an alkaline solution, is used by several chemists as the basis of the emetic tartar.

Antimonium tartarificatum vel tartarus emeticus. (*Pharm. Lond. and Edin.*) To prepare this most valuable medicine according to the London Pharmacopœia: take one pound and a half of crocus of antimony in fine powder, two pounds of cream of tartar, and two gallons of water, boil them together in a glass vessel for a quarter of an hour, strain the liquor through paper, and set it by to cool: the crystals that form are the emetic tartar.

The Edinburgh college directs: first, to add some of the *muriated antimony* to hot water, holding salt of tartar in solution, to collect the white precipitate thus formed, and edulcorate it thoroughly: next to add nine drams of this precipitate, and two ounces and a half of cream of tartar, in fine powder, to five pints of water, and to boil the whole till the tartar is dissolved; afterwards to evaporate the liquor in a glass vessel, till a pellicle appears on its surface, and to set it by to crystallize.

The emetic tartar is by much the most valuable of all the antimonial preparations; its composition renders it sufficiently soluble in simple menstrua, and as it is almost entirely insipid, and as the requisite dose is in all cases comparatively small, it may be given with great ease to children, or wherever there would be a difficulty of getting down bulky medicines. In doses of from one to about three grains it proves emetic, and often purges even after the stomach has been emptied: in smaller quantities, or mixed with various other medicines, and especially with those that correct its emetic property, it fulfills the other intentions with which antimonials are given; and with proper precautions it is always safe, manageable, and highly to be depended on.

When prepared in the same way, it is generally very uniform in its nature, but it is liable to some variation, when different antimonial oxyds are used; an inconvenience it would be of great importance to prevent.

The last of the antimonial medicines that we shall mention, is the *pulvis antimonialis* (*Pharm. Lond.*), or the *antimonium calcareo-phosphoratum*. (*Pharm. Edin.*)

To prepare it. Take equal parts of crude antimony and hartshorn shavings, mix them together, and throw them into a wide iron pan, heated fully red, and stir them constantly till they acquire an ash-colour; then take them out, reduce them to powder, fill a coated crucible with it, and lute over the top another crucible, inverted, and with a small hole at the bottom, to serve as a cover: then raise the fire gradually to a full white heat, and keep it in this state for two hours; when cold, take out the contents, reduce them to a molt subtile powder, and it is the *pulvis antimonialis*.

This preparation is intended as a substitute for the JAMES'S POWDER, one of the molt celebrated empiric medicines in this or any other country, the value of which has long been established by the molt unequivocal testimony. We shall refer the reader to this article for an account of the ingenious analysis made by Dr. Pearson of this powder, and published in the *Philosophical Transactions*, whereby it is proved to be a mixture of an oxyd of antimony with the earth of bones, or calcareous phospat; and hence the *pulvis antimonialis* has been employed as a substitute.

This preparation is given in doses of one to five or six grains, or even more, and is employed peculiarly in removing general fever, by means of perspiration. It is never intentionally given in such large doses as to prove emetic; but it is generally supposed, that the genuine James's Powder may be taken in larger doses than the antimonial powder, without exciting sickness.

We may add, that Mr. Chenevix, (in the *Philosophical Transactions* for 1801) has given the following ingenious method of preparing this medicine in the moist way, which removes every cause of variation which may take place whenever the oxyd of a metal so volatile as antimony is in certain states, is subjected to intense and long-continued heat. The following is the simple process: "Dissolve together, or separately, in the least possible portion of muriatic acid, equal parts of the white oxyd of antimony, formerly called algaroth powder (made by dropping the butter of antimony into water), and of phospat of lime; pour this solution gradually into distilled water, previously alkalized by a sufficient quantity of caustic ammonia: a white and abundant precipitate will take place, which, well washed and dried, is the proposed substitute for James's Powder."

In this process, the antimony and the phospat of lime are precipitated from their solution in muriatic acid at the same instant, the former by means both of the ammonia and the water in which it is dissolved, and the latter merely by this alkali. Hence, the inventor gives the useful caution to pour the mixed muriatic solutions *into the alkaline liquor*, and not to add the latter to the former; in order that the precipitation of the antimony and the phosphate of lime may be confentaneous, and therefore in uniform proportion from first to last. The muriatic acid simply dissolves phospat of lime, and does not decompose it, and therefore it is separated unchanged from its solution by the ammonia. If it be wished to prepare this powder with a stronger dose of antimony, it is only requisite to increase the proportion of muriated antimony to the muriated calcareous phospat, before the precipitation is made.

We shall only add to this short review of the various antimonial preparations used in pharmacy, that several other pre-

parations, slightly varying from those which we have mentioned, have been at times recommended by several eminent men, and have had a certain vogue; but it does not appear that any thing further can be expected from any other change in the preparation of antimonial medicines; and those which we already possess, form some of the molt valuable articles of the *Materia Medica*.

§ 13. *Uses of Antimony.*

The uses of antimony are not very numerous; it is of high value in medicine, and is employed, in combination with other metals, in the manufacture of printers' types, and specula for telescopes. Its oxyds are used in colouring glass; the sulphuret is employed in scurifying copper and other metals which are found mixed with gold; hence it was called by the alchemists *balneum regis*, or *balneum solis*.

The native antimony, at first, was of service only in the composition of paint. Scripture describes it to us as a sort of paint, with which the women blacken their eye-brows. Jezebel understanding that Jehu was to enter Samaria, painted her eyes with antimony, or, according to the Hebrew, "put her eyes in antimony."

At this day the women of Syria, Arabia, and Babylonia, anoint and blacken themselves about the eyes; and both men and women put black upon their eyes in the desert, to preserve them from the heat of the sun, and the piercing of its rays. M. D'Arvieux tells us, that the Arabian women border their eyes with a black colour made of *tuty*, which the Arabians call *rebel*. They draw a line of this kind of blacking without the corner of their eyes, to make them appear larger. Isaiah, in his enumeration of the several ornaments belonging to the daughters of Sion, has not forgot the needles which they made use of in painting their eyes and eye-lids: nor has this practice escaped the lash of Juvenal.

"Ille supercilium madida fuligine tinctum
Obliqua producit acu, pingitque trementes
Attollens oculos."

Ezekiel, describing the irregularities of the Jewish nation, under the idea of a debauched woman, says, that she bathed and perfumed herself, and that she anointed her eyes with antimony. Job shews sufficiently how much antimony was in esteem, by calling one of his daughters a vessel of antimony, or a box to put paint in, *cornu sibirii*. Tertullian and St. Cyprian have declaimed very warmly against this custom of painting the eyes and eye-brows.

ANTINE, in *Biography*, a Benedictine monk, was born at Gonireux, in the diocese of Liege, in 1688, and published several useful works of an historical kind. In 1736, he published the five first volumes of a new edition of "Du Cange's Glossary," with valuable corrections and editions. He also bestowed much pains upon "Bouquet's collection of French Historians," and on "The Art of verifying Dates," published in 4to. in 1750, and reprinted, with enlargements, in 1770. Nov. Dict. Hist.

ANTINOE, or ANTINOOPOLIS, now called *Enfene* by the Arabs, in *Ancient Geography*, a city of Upper Egypt, on the east side of the Nile, was built near the ruins of Abydus, where the Egyptians worshipped the god Besa, and revered his oracles; and became the capital of a nome or prefecture. The oracle of Besa was famous in the time of Ammianus Marcellinus, who says that all the neighbouring people went to consult him, and assembled at a certain period to celebrate festivals in his honour. Hence the Arabs call Antinoe the city of the Magi. This city was built in consequence of a shameful passion, which ill disguised the appearance of gratitude affected by Adrian, its founder.

This

This prince, renowned for his political and military talents, was, at the same time, contemptible on account of his passion for Antinous, the perfection of whose form is proved by one of the finest statues bequeathed to us by antiquity. Adrian, equally superstitious and depraved in his manners, while he was in Egypt with his court and army, consulted the oracle of Bêsa, which declared, that he was threatened with great danger, unless a person that was dear to him, and by whom he was beloved, was immolated for his preservation. Antinous offered himself for the victim, and the emperor had the cruelty to accept the sacrifice. The beautiful and generous Antinous precipitated himself from the summit of a rock into the Nile, and Adrian thought to efface his ingratitude and infamy by building, in honour of his favourite, whom he likewise regarded as his deliverer, a city which, under the name of Antinoe or Antinoopolis, has perpetuated at once his barbarous cruelty, and his criminal passion. This city he embellished with all the most valuable productions of art. The statues of Antinous were here considered as sacred images; and the emperor not only erected temples in honour of him, but instituted games and sacrifices, and regulated the worship that was to be paid to his memory. Savary says, that this city was half a league in circumference, and that two principal streets, 45 feet wide, intersecting each other at right angles, traversed its whole extent. The others were narrower, but equally straight. The two largest terminated by four gates, some of which still subsist; the handsomest has three vaulted entries; that of the middle is 40 feet high by 22 in width, and 20 thick; the other two are smaller. Each of the façades of this edifice is ornamented with four pilasters in bas relief, the Corinthian capitals of which, with the leaf of the Acanthus, have a considerable projection. This beautiful gate was surrounded by eight Corinthian columns, of the same height with itself. One only has escaped the ravages of time, and of men; the rest are either mutilated or destroyed; but the pedestals remain entire. Besides this edifice, one discovers in different quarters of the town, heaps of rubbish, which announce temples or palaces destroyed. If we may judge from the distances of the pedestals along the streets, they were bordered by a colonnade, which formed a portico on each side, and allowed the inhabitants to walk sheltered from the sun. Besides these embellishments, one of the squares was ornamented with four large pillars of the Corinthian order, three of which have perished, their bases only remain. The fourth is preserved, and is about 50 feet high. The shaft is composed of several stones. On the first is carved an ornament of oak leaves. On the pedestal is a Greek inscription, half effaced, which dedicates it to the emperor Alexander Severus.

The vestiges of the city, says Sonnini, excite regret for its destruction. The extent of ground, strewed with the most beautiful remains of antiquity, threw him into admiration and astonishment. In the time of Vansleb and of Paul Lucas, there were existing piers of architecture altogether entire, which he could not find. What appeared to him most remarkable was a triumphal arch, or magnificent gate, decorated with fluted pillars; its front was 50 yards in length; and he has given a drawing of it. On the other side of the mountain which terminates, towards the east, the site of the ancient Antinoopolis, are to be distinguished many apertures in the rock, which led to grottoes, that were burial-places or catacombs. The mosque of the village which is near the city, the appearance and population of which form so striking a contrast with the superb edifices and elegance of the ancient city built by Adrian, contains a tomb, and the relics of a saint, from whom this place has

obtained the name of *Sheick Abadé*; and this saint, though regarded by the Mahometans as a zealous defender of the koran, was, at the same time, claimed by the Christians as one of their bishops, who enjoyed the painful honour of martyrdom at *Infiné*. Towards the end of the fourth century, this city is said to have been peopled by Christians. Palladius assures us, that it had 12 convents of virgins, and several others inhabited by monks. It is now occupied by the worst people and most determined banditti and robbers in Egypt. Savary's Letters, vol. i. p. 552. Sonnini's Travels in Upper and Lower Egypt, p. 517.

ANTINOËIA, in *Antiquity*, annual sacrifices, and quinquennial games, in memory of Antinous the Bithynian.

They were instituted at the command of Adrian the Roman emperor, at Mantinea in Arcadia, where Antinous was honoured with a temple and divine worship. They were also celebrated at Argos.

ANTINOMIANS, in *Church History*, denote those who maintain the law of no use or obligation under the gospel dispensation, or who hold doctrines that clearly supersede the necessity of good works and a virtuous life.

The Antinomians took their origin from John Agricola, about the year 1538, who taught that the law is no wise necessary under the gospel; that good works do not promote our salvation, nor ill ones hinder it; that repentance is not to be preached from the decalogue, but only from the gospel.

This sect sprung up in England, during the protectorate of Oliver Cromwell; and extended their system of libertinism much farther than Agricola, the disciple of Luther. Some of their teachers expressly maintained, that as the elect cannot fall from grace, nor forfeit the divine favour; the wicked actions they commit are not really sinful, nor are to be considered as instances of their violation of the divine law; and that consequently they have no occasion either to confess their sins, or to break them off by repentance. According to them, it is one of the essential and distinctive characters of the elect, that they cannot do any thing which is either displeasing to God, or prohibited by the law.

Luther, Rutherford, Schlusfelburgh, Sedgwick, Gataker, Witfius, Bull, Williams, &c. have written refutations; Crisp, Richardson, Saltmarsh, &c. defences of the Antinomians; Wigandus, a comparison between ancient and modern Antinomians.

The doctrine of Agricola was in itself obscure, and perhaps represented worse than it really was, by Luther, who wrote with acrimony against him, and first styled him and his followers Antinomians. Agricola stood on his own defence, and complained, that opinions were imputed to him, which he did not hold. Nicolas Amsdorf fell under the same odious name and imputation, and seems to have been treated more unfairly than even Agricola himself. It is rather hard to charge upon a man all the opinions that may be inferred from things that have hastily dropped from him, when he himself disavows such inferences.

ANTINOMY, ANTINOMIA, derived from *αντι*, *contra*, and *νομος*, *lex*, a contradiction between two laws, or between two articles of the same law.

ANTINOMY, sometimes also signifies an opposition to all law. Whence a sect of enthusiasts, who are for carrying gospel liberty above all moral regards, and who slight the motives of virtue as insufficient to salvation, are called Antinomians; and sometimes Anonians.

ANTINOUS, in *Astronomy*, a part of the constellation AQUILA, or the eagle.

ANTINOUS, in *Mythological History*, a Bithynian youth,

youth, the favourite of Adrian, and the object of his unnatural and detestable passion. Some have said, that he fell accidentally into the Nile, as he was sailing on that river with the emperor, and was drowned. Dio Cassius assures us, that he was sacrificed in the manner already related under ANTIQOE. The emperor, whatever was the occasion of his death, bewailed him, says Spartian, with all the tenderness and weakness of a woman lamenting the death of her husband. To soothe in some measure his grief, he desired the Greeks to rank him among the gods, which they accordingly performed; so that in a short time all the Eastern provinces were filled with statues, temples, and chapels, consecrated to this new divinity. It was even pretended, that he uttered oracles; but his answers were commonly thought to have been composed by Adrian. The Astrologers, having discovered, or pretended to discover a new star, gave out that it was Antinous. Adrian caused the body of his beloved catamite to be buried with the utmost magnificence, built a city on the spot, and converted his tomb into a temple, where he was said to work miracles; which we find exposed and ridiculed by the Pagans themselves.

ANTINOUS, in *Sculpture*, a very famous Roman antique statue; originally in the collection of cardinal Alexander Albani: it is at present in the gallery of antiques, in the museum at Paris.

This statue is in marble; it is a standing figure of a young man, entirely naked; the head looks downwards, with a melancholy air; this is in every respect a highly finished and beautiful performance.

There are nearly as many statues of Antinous as of the Venus de Medicis; and they are very similar to each other: the hair is always disposed in the same manner, covering the forehead nearly as low as the eyebrows; and they all resemble one another in conveying a melancholy idea to the mind.

Mr. Richardson supposes that the vast number of these statues may be attributed to the nobility of Rome, who probably might make court to the emperor Adrian, by having statues of his favourite Antinous.

Among the different statues referred to, was one of late in the yard of the palace of the grand duke at Florence. There were two in the Villa Mattei; another in the garden of the Belvidere, found in Adrian's baths by Leo. X. Another fine statue of Parian marble, formerly broken to pieces, but well put together, stood in the Villa of Cassali, on Monte Caelio. The pieces of this statue had been made use of by the Goths to build a wall with, at the demolishing of which, they were found and put together. All the statues of this Villa had been treated in the same manner.

There is also a number of very fine busts of Antinous; among which, was one twice the size of life in the palace Farnese, at Rome; another in the palace Giustiniani; besides many others.

ANTIO, or ANZIO, *Capo*, in *Geography*, a promontory of Italy, in the ecclesiastical state, between port Ostia and the gulf of Gaeta. It has a fortified tower, and a convenient port. It takes its name from the ancient *Antium* in its vicinity.

ANTIOCH, in *Ancient Geography*, a city of Syria, was built in memory of his father Antiochus, by Seleucus Nicator, on the river Orontes, about 20 miles from the place where that river empties itself into the Mediterranean; being equally distant from Constantinople and Alexandria in Egypt, or about 700 miles from each. It soon became, and continued to be for many ages, the metropolis of the east, for the Syrian kings, and afterwards the Roman governors, who presided over the affairs of the eastern provinces, chose it for their place of residence; and in the Christian times, it

was the see of the chief patriarch of Asia. It ought also to be particularly mentioned, that the disciples of Christ were first called Christians at Antioch, and this Chrysolom specifies as the distinguishing prerogative of this city above all others; and he has celebrated this honour in a distinct homily on Acts XI. Here also the gospel was preached to Grecians who were incorporated into the Christian church. Here also Barnabas and Saul were sent out by the church, under the direction of the Holy Ghost, to travel through Pagan cities, to give light to the Gentiles, and to publish Jesus for salvation to the ends of the earth. We cannot forbear observing, that the Gospel acquires credibility from its having been first taught in the most populous, enlightened, and learned cities, never shunning the public eye, but challenging full examination; and that in those cities it obtained numerous converts by conviction, without the aid of force or fraud. Antioch was particularly honoured by the Jews, on account of the jus civitatis, which Seleucus Nicator had given to them in that city, together with the Greeks and Macedonians; and which, according to Josephus (*Ant. lib. xii. c. 13.*), they retained in his time. This metropolis of Syria was afterwards known by the name of Tetrapolis, being divided, as it were, into four cities, each of them having its proper wall, besides a common one, which enclosed them all. The first of these cities or quarters was built by Seleucus Nicator; the second by those who repaired thither on its being made the capital of the Syro-Macedonian empire; the third by Seleucus Callinicus; and the fourth by Antiochus Epiphanes. At the distance of about four or five miles was a place called *Daphné*, and reckoned a suburb of Antioch. Here Seleucus planted a grove, and in the midst of it erected a temple, which he consecrated to Apollo and Diana. To this place the inhabitants of Antioch resorted for their pleasures and diversions; and thus it became at last so infamous, that "to live after the manner of Daphné," was used proverbially to express the most voluptuous and dissolute mode of living. Daphné was formerly of such note, that the metropolis was distinguished by it, and denominated *Antioch near Daphné*.

Antioch, though it continued for 1600 years, as Pliny calls it, the queen of the East, was frequently in danger of being overwhelmed by earthquakes to which its situation exposed it, or of being ruined by its enemies. About 144 years before Christ, the disorders and tumults occasioned by the licentious and tyrannical conduct of Demetrius, the sovereign of Syria, terminated in a general revolt of the inhabitants of Antioch; and Demetrius was under a necessity of seeking assistance from Jonathan, one of the Maccabees, for the purpose of chastising the mutineers. Having obtained 3000 men, he resolved to disarm them, and issued orders for this purpose. This measure inflamed their resentment, and produced an insurrection, so that 120,000 men invested the palace in order to kill the king. The Jews slew to disengage him, dispersed the multitude with fire and sword, burnt a great part of the city, and killed or destroyed very nearly 100,000 of the inhabitants. Upon the destruction of the Syrian empire by the Romans, Antioch submitted, and remained for a long time under their dominion. About the year 115, in the reign of the emperor Trajan, Antioch was almost utterly ruined by one of the most dreadful earthquakes which history records. Trajan himself escaped with difficulty, and not altogether unhurt, through a window of the room in which he had retired; and he afterwards contributed largely towards restoring its ancient splendour. In the year 155, it suffered very much by a fire, the damage of which was repaired by Antoninus Pius. Upon the revolt of Avidius Cassius, the Roman general,

general, about the year 176, the inhabitants of Antioch took part with him, and thus incurred the resentment of Marcus Aurelius, who issued a severe decree, forbidding all shows and public diversions, and even the exercise of all municipal offices; but upon their repentance he pardoned their offences, restored their privileges, and visited their city before he left the province. In the year 194, they were again deprived of their privileges by the emperor Severus, for joining Niger, and subjected, as a mere village, to the authority of Laodicea; but by the intreaties of his son Caracalla, then an infant, he mitigated their punishment.

Upon the decline of the Roman power, Antioch became an object of contention between the Romans and the nations of the East; and accordingly, when Sapor, king of Persia, over-ran Syria and other provinces, the city of Antioch was surprised whilst the idle multitude was fondly gazing on the amusements of the theatre; its splendid buildings, private and public, were either pillaged or destroyed; and the numerous inhabitants were put to the sword, or led away into captivity. This sack of Antioch is assigned, by the decisive testimony of Ammianus Marcellinus, to the reign of Gallienus; though other historians refer it to that of Valerian, some years before. Upon the division of the Roman empire by Constantine, in 331, it was afflicted with a very grievous famine, and relieved by the liberality of the emperor, who sent thither 30,000 bushels of corn. In 347, Constantine II. caused a harbour to be erected at Seleucia for the convenience of Antioch, which was executed at a very great expence. It suffered from famine in the reign of Julian, and also in that of Theodosius the Great, at which latter period the distress of famine was aggravated by a plague. On occasion of a tax imposed in 387, by Theodosius, the people were much enraged; and the cruelty of the governor, in restraining and punishing their sedition, induced many of them to abandon their dwellings, and to retire with their wives and families to the neighbouring mountains. Some of them, however, returned; and to these St. Chrysostom preached some of those admired homilies now in our possession; and these homilies are said to have had a great effect in reforming the licentious and dissolute. Theodosius, when he heard of this tumult, commanded the city to be destroyed, and the inhabitants to be put indiscriminately to the sword; but the order was revoked; and he contented himself with inflicting a punishment similar to that of Severus at a former period. Numbers, however, were condemned; and St. Chrysostom interposed to obtain for them a respite. At last a general pardon was obtained, and the city was restored to its former privileges. Antioch suffered from earthquakes in the years 458 and 526; but when Chosroes, king of Persia, invaded Syria in 540, the city, disdainful of offers of an easy capitulation, was taken by storm, the inhabitants slaughtered with unrelenting fury, and the city itself delivered to the flames; those who escaped were carried into Persia, and sold as slaves. Having again recovered, in a great degree, its former splendour, it was visited with an earthquake, A. D. 587, by which 30,000 persons lost their lives, and the city was almost wholly destroyed. In 611, it was seized by Chosroes II.; but "the aged metropolis, so often overturned by earthquakes and pillaged by the enemy, could supply but a small and languid stream of treasure and blood." In 638, Antioch was reduced by the Saracens, and ransomed with 300,000 pieces of gold: but "the throne of the successors of Alexander, the seat of the Roman government in the east, which had been decorated by Cæsar with the titles of free, and holy, and inviolate, was degraded, under the yoke of the caliphs, to the secondary rank of a provincial town." It was re-

covered by the Greeks under Nicephorus Phocas and John Zimisces, in the 10th century, and again restored as a permanent and useful accession to the Roman empire. But the civil dissensions in the empire afforded to the Turks an opportunity of seizing upon Antioch, as well as the whole kingdom of Syria; and from them it was taken by the crusaders, A. D. 1098. In 1262, it was taken by Bibars, sultan of Egypt, and then its glory terminated.

Antioch, called by the Arabs *Antakia*, anciently so renowned, is now no more than a ruinous town, the houses of which built with mud and straw, and consisting of narrow and miry streets, exhibit every appearance of poverty and wretchedness. It is situated on the southern bank of the Orontes, at the extremity of an old decayed bridge, and is covered to the south by a mountain, upon the slope of which is a wall built by the crusaders. The distance between the present town and this mountain may be about 400 yards; and the intervening space is occupied by gardens and heaps of rubbish.

Antioch, however, seems to be better calculated than Aleppo, which is become the metropolis of these eastern parts, to be the emporium of the Europeans. By clearing the mouth of the Orontes, which is six leagues lower down, boats might be towed up that river, though they could not fail up, as Pococke has asserted, its current being too rapid. The natives, who never knew the name Orontes, call it, on account of the swiftness of its stream, *El-Aafi*, that is, the rebel. Its breadth at Antioch is about 40 paces. Seven leagues above the town it passes by a lake abounding in fish, and especially in eels. Many of these are salted every year; but the quantity is not sufficient for the numerous fasts of the Greek christians. We no longer hear at Antioch either of the grove of Daphné, or of the voluptuous scenes of which it was the theatre.

The walls of each quarter of Antioch, as well as those which surrounded the whole, are still remaining; but as the houses are destroyed, the four quarters appear like so many inclosed fields.

The plain of Antioch, though the soil of it is excellent, is uncultivated, and abandoned to the Turkmans; but the hills on the side of the Orontes, particularly opposite to Serkin, abound in plantations of figs and olives, vines and mulberry trees, which are planted in quincunx, and exhibit a beautiful landscape. N. lat. 36° 20'. E. long. 37° 5'. Anc. Un. Hist. vol. viii. p. 115. Rollin's Anc. Hist. Crevier's Hist. of the Roman Emperors. Gibbon's Hist. vol. i. p. 438., ii. p. 361., iv. 123. 146., v. 59. 64., vii. 313. 417., viii. 220., ix. 417., x. 90., xi. 64. Volney's Travels in Egypt and Syria, vol. ii. p. 154.

There were many other ancient cities which bore the name *Antiochia*. Stephanus, de Urbibus, and Eutathius, in Dionys. p. 170, enumerate 14; and others, particularly Appianus in Syriacis, mention 16 cities distinguished by this appellation. Of these we may mention, Antioch of Pisidia, as it was usually denominated, though it was situated in Phrygia, near Pisidia, or in the northern part of Pisidia; this was a Roman colony, and called also *Cæsarea*. It is mentioned by Strabo and Ptolemy; and also by St. Luke, Acts xiii. 14. Another was of Caria, situate on the Meander river, at the confluence of this with the Corinthus, north-west of Aphrodisius. According to Stephan. Byz. it was also called Pythopolis, and Nyssa or Nyssa; which, according to Strabo, was near Tralles. This was built by Antiochus, the father of Seleucus, and was a bishop's see. Another was of Cilicia, in that part called Trachea, on the borders of the sea, at the foot of Mount Cragus. Steph. Byz. is mistaken in placing this city near the Pyramus, which

which watered Cilicia Campestris. There was also another town of this name in Cilicia, situate on the Sarus, and anciently called Adana; but Antiochus Epiphanes gave it his name, about 171 years before Christ. It was famous under the emperor Titus Antoninus, and distinguished by honorary titles. The Itineraries place it 27 Roman miles from Tarsus, and 18 miles from Mopsuestia. Another Antiochia was situated in Mesopotamia, at the foot of mount Masius, according to Strabo, and the same with Nisibis. A city of this name is placed by Steph. Byz. between Cœlosyria and Arabia; and Berkelius says, it was the same with Gadara. Another Antiochia was situated in the province of Syria, called Comagene, at the foot of mount Taurus, to the west of Samosata, and at a distance from the Euphrates, where Pliny places it. Antiochia was also the name of Edeffa. Pliny places a city of this name in Sittacene, which Hardouin supposes to be that which Ptolemy calls Apollonia. Another Antiochia was in Margiana, called Alexandria, after the name of its original founder, but re-established by Antiochus, son of Seleucus, who gave it his own name. Antiochia was also, according to Pliny, an island at the entrance of the Thracian Bosphorus. Stephanus Byz. says, that there was also a city of this name in Scythia.

ANTIOCHA, in *Entomology*, a species of PAPILO that inhabits South America. The wings are black, with two white bands on the anterior pair. Fabricius, Gmelin, &c. Papiilio clytia of Cramer is considered as a variety β of this species.

ANTIOCHE, PERTUIS DE, in *Geography*, a channel in the Atlantic, on the French coast, near the northern part of the island Oleron, and on the southern of the isle of Rhé.

ANTIOCHETTA, a town of Asiatic Turkey, on the coast of Caramania, and nearly due north from the western end of the island of Cyprus. It is a bishop's see. N. lat. $36^{\circ} 8'$. E. long. $32^{\circ} 15'$.

ANTIOCHIA, a town of South America, in the kingdom of Popayan.

ANTIOCHIAN *secta*, or *academy*, a name given to the fifth academy, or branch of academies.

It took the denomination from its being founded by Antiochus, a philosopher contemporary with Cicero.

The Antiochian academy succeeded the Philonian. As to points of doctrine, the philosophers of this sect appear to have restored that of the ancient academy, except that in the article of the criterion of truth, Antiochus was really a Stoic, and only nominally an Academic. After his time, the professors of the academic philosophy were dispersed by the tumults of war, and the school itself was transferred to Rome. See ANTIOCHUS.

ANTIOCHIAN *epocha*, in *Chronology*, a method of computing time from the proclamation of liberty granted the city of Antioch, about the time of the battle of Pharsalia.

ANTIOCHIS, in *Ancient Geography*, a tribe of Greece, in Attica.

ANTIOCHUS SOTER, in *Ancient History and Biography*, was the son of Seleucus Nicator, by Apama, the daughter of Artabazus the Persian; and took possession of the empire of Asia, on his father's death, and held it for 19 years. He is chiefly recorded in history on account of his passion for Stratonice, his mother-in-law. Fearing to disclose his attachment, he fell into a lingering disease, which endangered his life. But the affection of his father induced him to employ the celebrated physician, Erasistratus, to discover the cause of his disorder, and to administer necessary relief. The physician soon perceived, by the changes of his pulse and countenance whenever Stratonice entered the room, the occasion of his complaint; and he pretended to the father, that Antiochus was in love with his wife, and at the same

time expressed his concern, that his malady admitted of no cure. Seleucus remonstrated, and strongly urged the physician to preserve the life of his son by yielding to his wishes. "Would you do so (said Erasistratus) provided Stratonice were the object of his affection?"—"Most willingly," replied the king.—"The cure then (rejoined Erasistratus) is in your own power:" and when he disclosed to him the secret. Seleucus fulfilled his promise, and resigned the beautiful Stratonice to his son, together with a considerable part of his dominions; and caused them to be crowned king and queen of Upper Asia. Upon the death of his father, he succeeded to the whole empire, and resided at Antioch. Having surrendered his pretensions to Macedon in favour of Antigonus Gonatus, on his marrying Phila, the daughter of Stratonice by Seleucus, he afterwards defeated the Gauls, who had settled in Lower Asia, whence he obtained from these provinces the title of *Soter*, or *Saviour*. He himself was afterwards defeated by Eumenes king of Pergamus; and after this defeat returned to Antioch, where he put one of his sons to death, for raising disturbances in his absence; and at the same time proclaimed the other, called Antiochus, king of Syria. He died soon after in the year before Christ 261. *Anc. Un. Hist.* vol. viii. p. 125.

ANTIOCHUS THEOS, or *God*; so called by the flattery of the Milesians, for delivering them from Timarchus; was the son of the preceding Antiochus by Stratonice, and succeeded his father in the sole possession of all his dominions. In the third year of his reign, a bloody war broke out between him and Ptolemy Philadelphus, king of Egypt, on occasion of an insult offered to Apame, sister of Antiochus, and widow of Magas king of Cyrene and Lybia. During this war, the Parthians revolted, and putting themselves under the conduct of Arfaces, drove out the Macedonians; and thus laid the foundation of the Parthian empire, which at length became formidable not only to all the Princes of the East, but even to the Romans. The Bactrians also, under Theodotus, and the other nations in those parts, shook off the Macedonian yoke, and elected princes of their own; and thus Antiochus lost all the provinces of his empire lying beyond the Euphrates. In these circumstances of desertion and distress, Antiochus concluded a treaty of peace with Ptolemy, on the condition of divorcing his former wife Laodice, who was his own sister by the father, and marrying Berenice, the daughter of Ptolemy, and settling the crown upon the male issue of that marriage. The nuptials were solemnized with extraordinary magnificence at Seleucia. Within two years after this marriage Ptolemy died, and Antiochus repudiated Berenice, and restored Laodice, who embraced this favourable opportunity of securing the succession to her son. With this view, she caused Antiochus to be poisoned, and employed Artemon, who much resembled him in his voice and features, to be placed in his bed, the body of her deceased husband being secretly conveyed away. To complete this stratagem, Artemon strongly recommended his dear Laodice and her children to the lords that visited him. Accordingly, in the name of Antiochus, supposed to be still alive, orders were issued that all his subjects should obey his beloved son Seleucus Callinicus, and acknowledge him for their lawful sovereign. The crown being thus secured, the death of the king was publicly declared, and Callinicus, without opposition, ascended the throne. Antiochus died in the year before Christ 246, after a reign of 15 years. Laodice finished her infamous career by the murder of Berenice and her son. *Anc. Un. Hist.* vol. viii. p. 127.

ANTIOCHUS *the Great*, so called on account of his illustrious actions, was the son of Seleucus Callinicus, and succeeded his brother Seleucus Ceraunus, in the year before Christ

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Christ 225. After the troubles with which his reign commenced, and which were terminated peaceably by his activity, his attention was engaged by the revolt of his uncle Achæus, who usurped the sovereignty of Asia Minor; and by a contest with Ptolemy Philopator, king of Egypt, for the recovery of Cœlosyria. He first resolved on a war with Ptolemy, which, after several advantages gained by him, terminated by a defeat in the decisive battle of Raphia, in the year before Christ 217, which obliged him to abandon all his conquests, and to withdraw, with the remains of his shattered army, to Antioch. The result was a negotiation for peace, which Antiochus obtained, on the condition of surrendering to Ptolemy the whole of Cœlosyria and Palestine. His next object was Achæus, whom he obliged to quit the field, and to shut himself up in the castle of Sardis; but he was at length delivered up by treachery to Antiochus, who, whilst he compassionated the misfortunes of a man to whom he was indebted for his crown, ordered him to be beheaded, and thus put an end to the war of Asia. Antiochus was now at liberty to pursue his plans for the reduction of those provinces in the east, which had shaken off the Syrian yoke. Accordingly he recovered Media and Parthia, and reduced Syringis, the capital of Hyrcania. Arsaces, however, was a formidable enemy; and he therefore made overtures to him for putting an end to the war; the consequence of which was, that it was agreed by treaty, that Arsaces should hold Parthia and Hyrcania, on condition of his assisting Antiochus to recover the other provinces which had revolted. He also, in a similar manner, concluded a peace with Euthydemus king of Bactria. After this pacification, he crossed Mount Caucasus, and entered India, where he renewed his alliance with Sophaganeus king of that country; and having marched through Arachosia, Drangiana, and Carmania, he returned by Persia, Babylonia, and Mesopotamia, to Antioch, after a successful expedition of seven years, and with the surname of *Great*, which he had acquired, and which he might have retained, with the reputation annexed to it, till his death, if he had not unfortunately engaged in a war with the Romans.

Soon after the return of Antiochus, Ptolemy Philopator died, and was succeeded by his son Ptolemy Epiphanes, a child of five years. The youth of the sovereign of Egypt presented to the ambitious views of Antiochus objects which were too alluring to be resisted. This, he thought, was a favourable opportunity, not only for recovering his lost provinces, but for seeking further aggrandisement. Accordingly he entered into a treaty with Philip king of Macedonia, in virtue of which they were to deprive the infant king of his dominions, and to divide them: Philip was to have Caria, Lybia, Cyrene, and Egypt; and Antiochus all the rest. Antiochus, having settled these preliminaries, marched into Cœlosyria and Palestine, and soon subdued them. But it so happened, that at this time Scipio had concluded the second Punic war; and the fame of the Romans was every where spread. The guardians of the young king, incited by the celebrity of the Roman name, sent an embassy to Rome, imploring the protection of that republic, and offering the guardianship of their king, and the regency of the kingdom during his minority. The Romans acceded to the proposal, and immediately signified their compliance to Antiochus and Philip, requiring them to desist from invading the dominions of their pupil, and threatening war upon them for his protection. Aristomenes, an old experienced officer, was appointed the young king's minister, and he deputed Scopas to levy troops in Ætolia, for the service of his master. These troops marched, during the absence of Antiochus, into Palestine and Cœlosyria, in

order to recover those provinces; but after some success, Antiochus returned, defeated Scopas, with the loss of the greatest part of his army, and obliged him to surrender Sidon, into which he had retired, with the whole garrison. Antiochus was cordially received by the Jews; and on his approach to Jerusalem, treated with the utmost respect and hospitality. In return, Antiochus granted them many privileges and favours. Antiochus proceeded from Palestine to Asia Minor; and as he sailed with a formidable fleet along the coast of Cilicia, Pamphylia, Lycia, and Caria, many of the maritime cities of those provinces voluntarily submitted to him. He then sailed to Ephesus, made himself master of it, and took up his winter-quarters there. In the mean time Smyrna, Lampascus, and other Greek cities of Asia, which at that time enjoyed their liberty, concurred in imploring the protection of the Romans, who were at last prevailed upon to exert themselves in restraining the progress of Antiochus. But during this embassy, Antiochus crossed the Hellespont, and seized all Thracian Chersonesus. The succour which these cities solicited was delayed, and much time was lost in ineffectual negotiation; till at length, in the year before Christ 195, Hannibal besought the protection of Antiochus, and engaged him to make war on the Romans. Antiochus strengthened himself by new alliances; having married his daughter Cleopatra to Ptolemy king of Egypt; and Antiochis, his second daughter, to Ariarathes king of Cappadocia. After fruitless embassies between him and the Romans, he formed the fatal resolution of commencing a war with them. Hostilities were mutual, and success for some time was doubtful; but the fleet of Antiochus having been defeated by that of the Romans, and his troops having been withdrawn from the Hellespont, the two Scipios, Cornelius and Africanus, found a free passage into Asia. The king was alarmed, and made proposals of accommodation to the Romans, which, although very advantageous to them, were rejected. He also offered, without ransom, the son of Africanus; and the grateful father acknowledged his obligations, by desiring him not to hazard a battle before his return to the army. But a decisive engagement took place at Magnesia, in Lower Asia; Antiochus was completely vanquished, in the year before Christ 190: and compelled by the circumstances to which he was reduced, to sue for peace. The terms were his giving up all his pretensions on Europe, limiting his Asiatic dominions to the country beyond Mount Taurus, and paying the expenses of the war. The surrender of Hannibal was also stipulated, but he had made his escape. The Syrian monarch did not long survive this humiliation: the manner of his death is not so satisfactorily ascertained. Jerom, on the authority of Strabo, says, that having plundered the temple of Jupiter Belus, in the province of Elemais, he was slain in an insurrection of the people. Aurelius Victor relates, that he gave himself up to every kind of dissolute pleasure; and that he was killed at an entertainment by one of his guests, whom he had insulted. He died, however, in the year before Christ 187, in the 37th year of his reign, and 52d of his age; and he is highly commended by most of the ancient historians for his humanity, clemency, and liberality. Till the 50th year of his age, his prudence in counsel, and courage in action, were such as to command success, and entitle him to the appellation of "Great;" but after that age, he was less wise and valiant, and less prosperous. His conduct in the war with the Romans, the contempt with which he received the wise counsels of Hannibal, and the ignominious peace which he was forced to accept, obscured all the glory of his former expeditions. The prophecies of Daniel, from the 10th verse of the 11th chapter to the 19th, inclusive,

clusive, relate to the actions of this prince, and were all fully accomplished. *Anc. Un. Hist.* vol. viii. p. 139—191.

ANTIOCHUS EPIPHANES, a younger son of Antiochus the Great, succeeded his brother Seleucus, in the year before Christ 176. It was one article of the humiliating treaty of Maguesia, that this prince should be sent to Rome as a hostage; and there he was detained for 13 years, till he was exchanged for his brother's son Demetrius. In his way home, his brother Seleucus was poisoned by Heliodorus, who usurped the crown. But aided by Eumenes, king of Pergamus, and Attalus that king's brother, he drove out the usurper, and ascended the throne. His conduct was foolish and extravagant to an extreme degree; and besides the frantic follies with which he was chargeable, he was addicted to drunkenness, squandered away large sums of money in riotous excesses; and in his mad frolics, scattered handfuls of money among the populace, crying out, "Let him take it to whom fortune gives it." This odd and extravagant conduct, of which many singular instances are related, made his subjects regard him as a madman; whence, instead of "Epiphanes, or the Illustrious," the title which he assumed on being settled on the throne, they used to style him "Epimanes" that is, "the Madman." Soon after his accession, a demand was made by the administration of Egypt for the restoration of Cœlosyria and Palestine; and this demand occasioned a war between the two crowns. Antiochus determined to anticipate the preparations made in Egypt, by a commencement of hostilities, and by an actual invasion of the country; and, at the same time, he sent a splendid embassy to Rome to justify his conduct, and to conciliate the favour of the senate. In his first expedition, he routed the Egyptians, and wintered at Tyre. In a second campaign, in the year before Christ 170, he reduced the whole country, except Alexandria, and gained as much by his clemency as by his arms. On this occasion, Ptolemy Philometer fell into the hands of the conqueror; and the Alexandrians, considering him as lost to them, placed upon the throne his younger brother Ptolemy Euergetes, called also Physcon; and made attempts to recover their country from the Syrians. Antiochus was thus induced to make a third expedition into Egypt, and advanced directly to Alexandria, with the design of besieging it. In this danger, Ptolemy Euergetes, and his sister Cleopatra, sent an ambassador to Rome to supplicate assistance. The senate determined to give them relief, and accordingly sent an embassy into Egypt for the purpose of terminating the war: and the instructions of their ambassadors were, to order the contending princes to suspend all hostilities, and to put an end to the war, on pain of forfeiting the friendship and alliance of the Romans. Antiochus, in the mean time, had made a pacification with Philometor, and engaged to restore him to the possession of his dominions, Pelusium excepted. He then returned to Antioch; but during his absence, the two royal brothers agreed, under the influence of Cleopatra's mediation, to reign jointly, and to renounce their dependence on Antiochus. This produced a fourth expedition into Egypt; and the Syrian king was hastily marching towards Alexandria, after having reduced the greatest part of the country, when he was met by the three Roman deputies. The decree of the senate was announced to him, and he desired some time for deliberation. Popilius, one of the deputies, drew a circle with a rod, which he held in his hand, round the king, and informed him that he expected a peremptory answer before he left that ring. Antiochus hesitated for a few minutes, and then declared his readiness to comply with the requisition of the republic. The three deputies gave him their hands, and Popilius renewed his former

familiarity with him. Antiochus was probably not a little exasperated, though he was obliged to submit; for on his return from Egypt, he visited Jerusalem, and with extreme cruelty compelled the Jews to violate the principles of their religion and worship at the heathen altars which he had caused to be erected. In a former expedition, he had taken Jerusalem by storm, plundered and despoiled the temple, and abolished the Jewish ritual. These violences, which are related in the books of the Maccabees, occasioned the new revolt of Mattathias and his sons; which for a long time filled that country with bloodshed, and despoiled the whole power of Syria.

With a view of further ingratiating himself with the Romans, he celebrated their subjugation of the kingdom of Macedon under Perseus, by causing games to be exhibited at Daphné near Antioch, with a pomp and magnificence which even in that luxurious part of the world had never before been witnessed. The king's conduct was so extravagant and absurd on this occasion, that Tiberius Gracchus, the Roman envoy at his court, informed the senate, that they need be under no apprehensions from any design which he could form. Nevertheless, on a revolt of Armenia and Persia, he left part of his army under Lyfias to reduce Judæa, and marched with the rest against Artaxias, the Armenian king, whom he defeated and took prisoner. From Armenia he marched into Persia, and slew to Elimais, of the immense wealth of which he had received information, with a design to plunder both the city and the temple. Here he was repulsed with the greatest ignominy; and mortified at the disgrace he suffered, he withdrew to Ecbatan in Media. But news arriving of the defeat of Nicanor and Timotheus, two of his generals in Judæa, he hastened towards Babylonia; and was met in his passage by two messengers, who gave him an account of the defeat of Lyfias, and that the Jews had retaken the temple, thrown down the images and altars which he had erected, and restored their former worship. These tidings exasperated him beyond measure; and he determined to march in person against the Jews, and threatened to extirpate the whole nation. He had scarcely uttered these words, when he was seized with an excruciating pain in his bowels, which no remedy could cure or alleviate. He resolved, however, to proceed, till at length he was obliged to halt at a town called Tabæ, on the confines of Persia and Babylonia, in the year before Christ 165, where he expired, after languishing for some time in the most dreadful agony both of mind and body, in the 12th year of his reign, and 39th of his life. The 11th chapter of Daniel, from the 20th verse to the end, wholly relates to this Antiochus. *Anc. Un. Hist.* vol. viii. p. 195. 213.

ANTIOCHUS EUPATOR, was the son of the preceding, and placed on the throne at the age of 9 years, on the death of his father, by Lyfias; though the deceased monarch had appointed Philip, his prime minister, for his guardian. Philip retired into Egypt; and Lyfias prosecuted the war with the Jews which Epiphanes had begun; but the large army which he conducted thither was defeated by Judas Macca-

bæus. From another expedition into Judæa, and the siege of Jerusalem, he was recalled by the intelligence, that Philip had taken possession of Antioch, and seized on the government. Lyfias made peace with the Jews; and having marched against Philip, defeated him, and put him to death. In the mean time the Roman senate had assumed the tutelage of the young king, and sent a commission of guardianship into Syria, with orders to burn all the decked ships, and disable the war-elephants. Octavius, who was appointed chief of this commission, and who executed his orders with great insolence,

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solence, was killed in a popular tumult at Laodicea; and buried with great pomp by Lyfias, who dreaded the indignation of the senate, and sent ambassadors to Rome for his own exculpation. At this time Demetrius, the son of Seleucus Philopator, who had the best right to the crown, but who was kept at Rome as a hostage, contrived to make his escape: and arriving in Syria, was received every where by the people as their lawful sovereign. Lyfias and the inoffensive Eupator were delivered by their own soldiers to Demetrius, who ordered them both to be put to death, in the year before Christ 162, after the young prince had reigned between two and three years. The author of the first book of the Maccabees says, they were taken prisoners by the soldiers of Demetrius, and by them put to death, without any orders from Demetrius. *Anc. Un. Hist.* vol. viii. p. 212. 221.

ANTIOCHUS SIDETES, or the *Hunter*, was the second son of Demetrius Soter, and succeeded to the throne, vacated by his brother Demetrius Nicator, after the expulsion of Tryphon the usurper, by the interest of Cleopatra, the wife of Demetrius, whom he married, and the assistance of Simon, high priest of the Jews, in the year before Christ 138. After his accession, he reduced all those cities of Syria which had rendered themselves independent during the intestine troubles. He then made war with the Jews, besieged Jerusalem, and compelled Hyrcan, who had succeeded his father Simon, to purchase a peace, on the condition of paying tribute. He then entered Parthia, with a motley multitude of cooks, singers, women, and other ministers of luxury, much more numerous than his soldiers, defeated Phraates, and regained the provinces which he had separated from the Syrian empire. But his troops being dispersed into distant winter-quarters, the oppressed people, joined by the Parthians, conspired to attack them all in one day; and Antiochus, and every man under his command, were destroyed. Others say, that he could not survive the disgrace of being vanquished in battle, and that he put an end to his own life. This happened in the ninth year of his reign, before Christ 130. Although Antiochus was addicted to intemperance and amusement, he is represented as a prince possessing many good qualities, a lover of justice, and inclined to clemency. Phraates, on viewing his dead body, is said to have exclaimed, "Your wine, Antiochus, and your too great confidence, have brought you to this untimely end. You thought you could have swallowed the kingdom of Arfaces in your cups." *Anc. Un. Hist.* vol. viii. p. 242—245.

ANTIOCHUS GRYPUS, or *hook-nosed*, was the son of Demetrius Nicator by Cleopatra; and on the death of his brother Seleucus, whom his mother, jealous of her power, caused to be murdered, was recalled by her from Athens, where he had been sent for his education, and proclaimed king of Syria, in the year before Christ 123, to the exclusion of Alexander Zebina, who had usurped the throne, and whom Grypus afterwards put to death. Cleopatra had advanced Grypus to the throne, with a view of reserving the authority to herself, and of allowing him the mere title of king. But when he began to manifest an inclination to govern independently of his mother, she determined to transfer the crown to a younger son, and to dispatch this by poison. For this purpose, she prepared a bowl, and presented it to the young king on a day when he returned hot and weary from the chase. But as he was forewarned of her purpose, he desired her to take the first draught; and on her refusal, he summoned the lords of his court, communicated to them the information he had received, and then said, that the only mode by which she could exculpate her-

self, was to drink what she had prepared for him. She drank, and presently expired. After her death, Antiochus enjoyed the sovereignty of Syria for eight years without disturbance; but there arose a rival, *viz.* Antiochus the Cyzicene, the son of Cleopatra by Antiochus Sidetes. The consequence of this rivalry was a civil war, which terminated in the division of the kingdom. Having thus settled their difference, they both devoted themselves to voluptuousness and debauchery, and totally neglected both their private and public concerns. This negligence on their part gave John Hyrcan an opportunity of making conquests upon Syria; and the subsequent disagreement of the two brothers afforded occasion for several cities to assert their independence. At length Grypus was assassinated by one of his own subjects, in the 45th year of his age, in the year before Christ 97, after having reigned, according to Josephus, 29, and according to Porphyrius, 26 years. Cyzicenus, some years after, was defeated and slain by his nephew Seleucus. *Anc. Un. Hist.* vol. viii. p. 248—253.

ANTIOCHUS, a monk of Seba in Palestine, of a very superstitious complexion, lived towards the beginning of the seventh century; and wrote a summary of the christian doctrine, intitled "The Pandect of the Holy Scriptures," in 130 homilies. In the preface, he mentions the capture of Jerusalem by Chosroes, king of Persia; and relates the cruelties inflicted on the monks of Palestine; and in an annexed poem, he laments in doleful strains the loss of a precious fragment of the true cross, which, among other spoils, was carried away by the Persians. The work is published in Greek and Latin, in the additions to the "Bibliotheca Patrum." *Fabric. Bib. Grec.* l. v. c. 34. § 3. t. ix. p. 260. *Mosheim Eccl. Hist.* vol. ii. p. 174. 179.

ANTIOCHUS, a Stoic philosopher, was a native of Ascalon, a disciple of Carneades, and the last preceptor of the Platonic school in Greece. He flourished about 100 years before Christ. Cicero (in *Brut. et de Nat. Deorum.* l. i. c. 7.) mentions him with respect as one of his instructors, and as the author of an ingenious treatise upon the Academic sect; in which he shewed that the Peripatetics and Stoics differed more in words than in real opinion. He also maintained, that the doctrines of the Stoics were to be found in the writings of Plato. Cicero also professes to admire his eloquence and the politeness of his manners; and Lucullus took him as his companion into Asia and to Rome, in which city he enjoyed the friendship of many illustrious men. Plutarch (in *Lucull.*) mentions a treatise of his "On the Gods;" and Stephanus Byz. says, that he was the ornament of his country, and gives him the appellation of a "swan." None of his writings are extant. He resigned the academic chair in the 175th Olympiad, or in the year before Christ 80. *Brucker's Hist. of Philos.* by Enfield, vol. i. p. 254.

ANTIOCHUS, was a contemporary with Galen. He is said to have lived nearly an 100 years, and to have enjoyed his faculties to the last. This was attributed to an abstemious and careful regimen, which he adopted as soon as he became advanced in years.

ANTIOCHUS, in *Entomology*, a species of PAPILIO that inhabits China. The wings are entire, roundish, black; with a broad yellow-brown band continued across the upper surface of all the wings. *Fabricius, and Donovan's Insects of China.*

ANTIODONTALGICUS, a new insect, described by professor Gerbi, in a small work published at Florence in 1794; so called from its property of allaying the tooth-ach. It is a kind of curculio, and found on a species of thistle, *carduus spinosissimus*, which is perhaps a variety of

the cmeus. Its flowers, when analysed, gave the acid of salts, the muriatic acid, oxalate of lime, extractive matter, and a very little resin. The insect eats not only the parenchyma, but also the vessels and fibres of the leaves. It is of a length figure, covered below with short yellow hair, and above with golden, yellow velvety spots. Its coreclet is variegated with specks, and the covering of its wings with specks and stripes. It has a short proboscis, and somewhat resembles the *cureulio villosus* of Geoffroy. Its larva represents a sort of ichneumon. If 12 or 15 of these insects, in the state of larva, or when come to perfection, be bruised and rubbed slowly between the forefinger and thumb, until they have lost their moisture; and if the painful tooth, where it is hollow, be touched with that finger, the pain ceases, sometimes instantaneously. A piece of shamoy leather will answer the same purpose with the finger. If the gums are inflamed, the remedy is of no avail. Other insects possess this property of curing the tooth-ach: such as the *carabus ferrugineus* of Fabricius; the *coccinella septem-punctata*, or lady-bird; the *chrysomela populi*, and the *chrysomela sanguinolenta*. This property seems to belong to several kinds of the coleoptera.

ANTIOPA, a species of *PAPILIO* that inhabits Europe. The wings are angulated, black, with a whitish border. Linn. Faun. Suec. Fabricius, &c. This is *papilio maxima nigra*, alis utrisque limbo lato albo cinctis of Ray, &c.; and is known by the English name of Camberwell beauty butterfly. The dark colour of the wings inclines to a rich purple-brown, the external border to yellowish; and it has an intermediate black stripe, with a row of blueish spots, and two long yellowish spots on the anterior margin of the first wings. It is produced from a black spinous larva, that is marked on the back with a row of ferruginous spots, and feeds on the willow. It is remarkable, that the insects of this species found in England have the external border of a paler colour than those found in other parts of Europe, though in other respects they are perfectly similar. Donovan's British Insects, vol. iii. p. 47.

ANTIOPE, in *Fabulous History*, the wife of Lycaus king of Thebes, who, being deflowered by Jupiter in the form of a satyr, brought forth Amphion and Zethus. Another Antiope was queen of the Amazons; and, with the assistance of the Scythians, invaded the Athenians, but was vanquished by Theseus.

ANTIOPIA, in *Ancient Geography*, an ancient town of Palestine, in the tribe of Naphtali, towards the frontier of Aser, between Tyr and Bethsaida. It was once a principal city of the Canaanites, but is now reduced to a miserable village.

ANTIPACHSU, in *Geography*, a small island on the coast of Epirus, over against the gulph of Arta, between Corfu and Cephalonia.

ANTI-PÆDO-BAPTISTS, derived from *anti*, against, *παις*, *παιδος*, child, and *βαπτισμα*, baptize, whence *βαπτισμος*, is a distinguished denomination given to those who object to the baptism of infants; because, they say, infants are incapable of being instructed, and of making that profession of faith which entitles them to this ordinance, and an admission into church communion. See ANABAPTISTS and BAPTISTS.

ANTIPAGMENTS, *Antipagmenta*. See ANTEPAGMENTS.

ANTIPAPINIANUS, *αντιπαπινιος*, a title given by the Greek lawyers to the fourth part of the Digest, including four books, beginning with the title *De pignoribus*.

This is otherwise called *antipapianus*.

The antipapianus was thus denominated, not as being in-

tended in opposition to Papinian, but because it was to serve in the schools of the civil law in lieu of the books of that lawyer, pursuant to an edict of the emperor Julian; so that the antipapinian was so far from being a refutation of Papinian, that it was only a substitute for his writings, which were not so proper for the use of the younger sort of students.

ANTIPARALLELS, in *Geometry*, are those lines which make equal angles with two other lines, but in opposite directions. Thus, if AB and AC (*Plate 11. Geometry. fig. 27.*) be any two lines, and FC and FE be two others intersecting them in such a manner, that the angle B be equal to the angle E, and the angle C equal to the angle D, then BC and DE are antiparallels, with respect to AB and AC; and these latter are antiparallels with regard to the two former. It is a property of these lines, that each pair cuts the other into proportional segments, if they be taken alternately. *viz.* AB: AC:: AE: AD:: DB: EC, and FE: FC:: FB: FD:: DE: BC. M. Leibnitz, however, calls those lines antiparallels, which cut two parallels so, that the outward angle being added to the inward one, the sum may be equal to a right angle.

ANTIPARALYTICA, in the *Materia Medica*, medicines suited to cure the palsy.

ANTIPARASTASIS, from *anti* and *παρυστασις*, of *παρυστημι*, I exhibit, in *Rhetoric*, a reply to an opponent, by allowing part of his argument, and denying the rest, *e. gr.* "you may print whatever you please, provided the public suffer no prejudice from it; but you must not, if it does."

ANTIPAROS, in *Geography*, an island in the Archipelago, opposite to Paros, and separated from it by a strait about seven miles wide. This is the ancient *Oliaros*, which was established by a colony of Sidonians. It is narrow and long, extending in a direction from north-east to south-east; and, according to Tournefort, about 16 miles in circumference; its soil is tolerably fertile, and produces for its own supply wheat, barley, wine, sesamum, and some legumes; but the most considerable production, and that which enables the inhabitants to pay their imposts, is cotton. What renders Antiparos particularly famous is the grotto, which penetrates into its bosom to a very great depth; and which, according to the relations of the Greeks, communicates beneath the waters with some neighbouring islands. Magni, an Italian traveller, who first discovered this subterraneous grotto, has given an account of it; Tournefort has also described it with great exactness; and M. de Choiseul Gouffier has given some very beautiful drawings of it in his "Voyage Pittoresque de la Grèce." We first find a rustic cave, about 30 feet wide, divided by some natural pillars; between which the ground slopes gently, and then more precipitately to the bottom of the cavern. At last the descent is by a ladder to the grotto itself, which is about 300 fathoms below the surface of the earth; and it appears to be about 40 fathoms high, and 50 wide. It is full of large and beautiful stalactites, hanging from the roof, and covering the floor. Olivier (Travels, p. 121.) queries, whether it ought to be considered as a quarry, from which marble has been extracted for a length of time, or as an immense cavity, such as naturally exist in most calcareous mountains.

ANTIPAS-HEROD. See HEROD.

ANTIPASCHA, in *Ecclesiastical Writers*, denotes the first Sunday after Easter; otherwise called *DOMINICA in albis*.

ANTIPATER, in *History* and *Biography*, was a native of Idumæa; and, having acquired wealth and influence in the Jewish state, joined the Pharisees against Aristobulus the high

high priest, in favour of his brother and competitor Hyrcan. He also engaged Aretas, the Arabian king, to invade Judæa, where he was strengthened by Hyrcan's party; and totally defeated Aristobulus, who was forced to fly into Jerusalem, and avoid the event of a close siege. In these circumstances Aristobulus applied to the Romans for succour; and Scarus, the Roman general, was induced by a considerable bribe to threaten Aretas, and thus to induce him to lead his army out of Judæa. He was afterwards overtaken by Aristobulus, and defeated with great slaughter. When Pompey arrived in Syria, in the year before Christ 63, the two brothers, Aristobulus and Hyrcan, appeared before him, and urged their respective pleas; but the decision was deferred, and Aristobulus departed in disgust. When Pompey entered Judæa, he summoned Aristobulus, who had raised a considerable army, to appear and to answer for his conduct; but being dissatisfied with the terms of conciliation that were proposed to him, he fled with haste to Jerusalem, and was soon followed by Pompey, who laid siege to the city, and, after an obstinate resistance, took it. On this occasion, 12,000 of the besieged were slaughtered by the Romans, besides many more who died by their own hands. During this horrid scene, the priests never intermitted the divine service in the temple; and at last suffered themselves to be butchered before the altar, with as much meekness and constancy as the victims they were then offering. Hyrcan was restored to the pontifical dignity, with the specious title of prince, though from thenceforth tributary to Rome; but he was wholly divested of his regal power, and forbade to resume either the diadem or royal style, or to extend his territory beyond the old borders of Judæa. Aristobulus and his two sons, Alexander and Antigonus, together with his two daughters, were taken by Pompey to Rome, as captives to adorn his triumph. The indolence of Hyrcan led him to commit the management of his affairs to Antipater, who artfully contrived to ingratiate himself with the Romans, and to promote the aggrandizement of his own family. With these views he gave successive assistance to Scarus, Gabinius, and Cassius, the Roman generals who commanded in those countries. He also facilitated the capture of Pelusium by the succours which he afforded to Julius Cæsar, and he was one of the foremost in scaling it, when this city was taken by assault. Mithridates, in a letter to Cæsar, acknowledged that his successes were owing to the co-operation and valour of Antipater; and in recompence of his service, Cæsar gave him considerable polls in the army, and made him procurator or lieutenant of Judæa, and citizen of Rome. Antipater, having accompanied Cæsar to Tyre, where he embarked for Sicily, returned to Jerusalem, and exerted himself in restoring the Jewish government to its ancient model, and repairing the walls and fortifications. He also made his eldest son Phasael governor of the metropolis, and appointed his second son, Herod, governor of Galilee. This growing power, however, excited the envy and jealousy of the principal Jews; and at length Malichus, who had been of the same party with Antipater, and who had concurred with him in the support of Hyrcan's interell, resolved to take him off by treachery. Antipater, being apprized of his design, retired beyond Jordan, and put himself in a posture of defence; but Malichus contrived by various protestations to remove his suspicion, and to effect a reconciliation with him; and Antipater, by his interest with Marcus, governor of Syria, prevented his being put to death. The jealousy and envy of Malichus were smothered, but not extinguished; and he embraced the first convenient opportunity that offered of bribing the butler of the high priest to poison him with

a glass of wine, whilst with an armed force he seized upon the government of Jerusalem. This event happened in the year before Christ 43. *Anc. Un. Hist.* vol. iii. p. 127 - 147.

ANTIPATER, the Macedonian, was a person of noble birth, and distinguished by his natural talents and excellent education. He was the friend and disciple of Aristotle, learned, and a lover of learning; magnificent in his actions, but plain in his dress and behaviour, never varying his habit during the whole time of his government, but appearing like a private person when he gave law to kings. Philip of Macedon selected him as his minister, and confided in him as his friend. "I have slept soundly," said he; "for Antipater was waking." And Alexander, referring to his plain garb, replied to those who observed to him, that all his great officers, except Antipater, wore purple; "True; but Antipater is all purple within." During the absence of Alexander, on occasion of his expedition into Asia, the government of Macedon was given to Antipater; and he was supported even against the interference of Olympias, Alexander's mother. He also maintained the tranquillity of all Greece; and marching with a considerable force against Agis III. king of Sparta, who had united several of the Grecian states against the Macedonians, he defeated the Spartan king, and by a single action terminated the war.

After the death of Alexander, when the empire was divided by a general council summoned by Perdiccas, the government of the European provinces was assigned to Antipater, as general of the army in that continent. In consequence of an edict of Alexander, which directed all the cities of Greece to recall their exiles, Antipater was soon engaged in a war, in which the Athenians were particularly active, and in which they were at first successful; so that they compelled him, after a defeat, to retire to Lamia, a strong city, near the field in which their armies had been engaged. But Antipater, receiving assistance from Asia, was rescued from confinement, and the siege being raised, he was joined by Craterus, and thus enabled to defeat the confederate Greeks. Athens, on his approach, was compelled to submit at discretion; and he abolished the popular government there, and established that of Solon, leaving a Macedonian governor in the place. He also settled the rest of the Grecian states on a similar plan of equity and moderation; and so much to general satisfaction, that he was honoured as the father and protector of Greece. Upon his return to Macedon, he directed his arms, in conjunction with his son-in-law Craterus, who had married his daughter Philla, against the Ætolians, the only persons that had refused to be comprehended in the peace, and effected their purpose. They afterwards entered into a league with Ptolemy, and passed over into Asia, in order to control the power of Perdiccas, who had assumed the sovereignty. But Perdiccas being soon after slain in Egypt, Antipater was sent for to the army in Syria, and declared the sole protector of kings, and invested with sovereign power. Antipater next proceeded to make a new division of the provinces, and then returned to Macedon, his own province, with the kings, leaving the army satisfied with his proceedings. Soon after his return to Macedon, he was attacked by a dangerous disease, which, at his advanced age, left him little hope of life. In his last moments he behaved with the same firmness and the same regard to his reputation which he had manifested in all the actions of his life. His great offices of protector and governor of Macedon he bequeathed to Polysperchon, the eldest of Alexander's captains then present; and his eldest son, Cassander, he merely appointed to be a chiliarch or colonel of a thousand

men. To Polyperchon he gave a council suggested by the experience of his life: "Never, on any account to suffer a woman to interfere in affairs of state." He died at the age of 80, in the year before Christ 318. *Anc. Un. Hist.* vol. vii. p. 454., vol. viii. p. 16. Rollin's *Anc. Hist.* vol. iv. p. 374., vol. v. p. 119—151.

ANTIPATER, was bishop of Bostra, an Arabian church, and flourished towards the end of the fifth century. He wrote a refutation of Eusebius's Apology for Origen, fragments of which are preserved in the acts of the second council of Nice. *Fabr. Bib. Græc.* l. v. c. 34. § 7. t. 9. p. 274

ANTIPATER, LELIUS COELIUS, a Roman historian, who lived in the time of the Gracchi, was the author of a history of the second Punic war, of which Brutus wrote an abridgment. He is often mentioned by Cicero. The emperor Adrian preferred Antipater to Sallust, probably for the same reason that he preferred Ennius to Virgil, because he was an admirer of the ancient Roman language. Fragments of this historian were published by Riccoboni in 1568, and reprinted with fragments of other historians, by Antony Angustin, at Antwerp, in 1595. *Voss. de Hist. Lat.* l. i. c. 8.

ANTIPATER of Sidon, or of Tarsus, a stoic philosopher, and also a poet commended by Cicero and Seneca, flourished about the 175th Olympiad, or 80 years before Christ. He was the disciple and successor of Diogenes the Babylonian; and his chief opponent was Carneades.

ANTIPATER, an ancient physician of the sect of the methodists, died, as Galen relates, of a tubercle in his lungs. The tubercle occasioning an intermission of his pulse, which continued several months, Galen, from this circumstance, predicted that his death would be sudden, which accordingly happened.

ANTIPATHES, among the *Ancient Naturalists*, was used to express any stone or gem, which, according to their superstitious ideas of the virtues of gems at that time, was supposed to have a power of resisting the force of enchantments. Pliny mentions a very valuable gem, called by the ancients antipathes for this very reason; and the black coral had the same name on the same account.

ANTIPATHES, in *Natural History*, the name of a genus in the ZOOPHYTA order of VERMES, the character of which, according to the Linnæan system, is, animal growing in the form of a plant; stem within horny, with small spines; base expanded; the outside covered with gelatinous flesh, and numerous polypiferous warts. The species of the genus are, spiralis, ulex, subpinnata, myriophylla, elopecuroides, cupressus, orichalcea, dichotoma, clathrata, fabellum, pennacea, ericoides, and fœniculacea; which see respectively.

ANTIPATHY, compounded of *αντι*, *contra*, *against*, and *παθος*, *passion*, in *Physiology*, a natural enmity or aversion of one body to another. In which sense the word stands opposed to SYMPATHY. Such an aversion is commonly said to be between the salamander and the tortoise, the vine and the elm, the toad and the weasel, the sheep and the wolf, the olive and the oak, &c. *Phil. Trans.* N^o 339.

In a more restricted and proper sense, antipathy denotes that natural aversion and detestation which an animated and sensitive being feels with regard to some object that is presented to it, either in reality or in imagination; and the cause of which is mysterious and inexplicable. Such are some of the antipathies mentioned in the last paragraph; and such also is the aversion to which some persons are conscious under the apprehension or at the sight of particular

objects, as cats, mice, spiders, serpents, eels, &c. and which produces, whatever be the cause of it, sensible and apparent effects. Many instances of antipathies that have been recorded are, perhaps, no better than fables; and a severe examination would reduce them to the large class of vulgar errors. There are also fictitious aversions, which have no other source besides affectation, and a pretended delicacy of nerves, which is more frequently feigned than real. Of those other antipathies, the existence of which is capable of being ascertained, and which produce sensible and undisputed effect, it is not difficult to assign a cause without recurring, with the Peripatetics, to any occult qualities inherent in bodies. In the credulous period of infancy, with what pains and industry are the minds of children impressed with the sense of the noxious qualities of particular animals, such as serpents and other reptiles; and how easily do they associate the ideas they are thus led to entertain of some objects, with others that resemble them in their visible form or general properties? When an aversion thus imbibed in early life, or in consequence of some trivial act or injury, concurs with a feeble frame and irritable state of the nervous system, it will serve to account, with sufficient satisfaction, for the antipathies of advanced age, without recurring to any occult qualities and latent principles, which are mere names for unknown and unascertained causes of particular effects. The antipathy which some persons have to eels, may be traced to the resemblance which these fishes bear to serpents, and to the dread of these reptiles that has been betimes implanted and cherished. There are other antipathies with regard to food or liquor of any particular kind, which have proceeded from a defective and faulty conduct of indulgent and ill-judging parents in early life, or from some natural unsuitableness to the taste or digestive faculty of children. "To what then are those antipathies of which we have heard so much reducible? Either to legendary tales, or to aversions against objects which we believe dangerous; or to a childish terror of imaginary perils; or to a disrelish, of which the cause is disguised; or to a ridiculous affectation of delicacy; or to an infirmity of the stomach: in a word, to a real or pretended reluctance for things, which are either invested, or supposed to be invested with qualities hurtful to us. Too much care cannot be taken in preventing or regulating the antipathies of children; in familiarising them with objects of every kind; in discovering to them, without emotion, such as are dangerous; in teaching them the means of defence and security, or the methods of escaping their noxious influence; and when the rational powers are matured by age, in reflecting on the nature of those objects which we fear, in ascertaining what has been told concerning their qualities, or in vigorously operating upon our own dispositions to overcome those vain repugnances which we may feel."

Some think that the term antipathy can only be applied to any certain purpose, when used with the restriction of modern philosophers; among whom it signifies no more than a *vis centrifuga*, or repelling power.

ANTIPATHY is sometimes also used in a *moral* sense, to denote a contest between the mind and the body, or between reason and inclination.

ANTIPATHY, in *Painting*, relates wholly to the colouring part of that art, and which may be more properly expressed by *contrast*, *degradation*, &c. Blue and crimson are by mixing changed into purple, as blue and yellow are into green, or red and yellow into an orange colour: these mixtures may be said to be kind to, or to harmonize with each other. If red and green, yellow and purple, or blue and orange colours, be united by admixture, they not only destroy

stroy the character of the colours, but they also destroy most completely the brilliancy of the several tints employed. Hence we may say, that purple has an antipathy to yellow, green to red, and orange to a blue colour. The union of these antipathies degrades the colours more or less, according to the proportion in which they are used: these degradations, however, are of the greatest use in the hands of a skilful artist, without which his pictures would resemble the crudeness of paintings upon glass, rather than be imitations of nature. Although the skilful use of these antipathies prevents a too glaring and gaudy effect, yet there is danger on the other hand, if they are not used with great judgment and delicacy, that the picture may sink into coldness, stupidity, and flatness. It is upon the knowledge of these three colours, blue, red, and yellow, and their proportion to each other as antipathies, that the whole art of colouring depends, which requires more study and application, and an eye of nicer discernment, than may be generally supposed. The nicer antipathy can hardly be applied to the arrangement of the parts which compose a picture, as the colours of garments, &c. without affectation; the expressions in more common use convey ideas with less ambiguity, such as contrast, union, harmony, discord, &c.; and the two last, although they are, in strict propriety, musical terms, yet have been adopted, and very aptly applied by painters, who well understood their signification as relative to their art, as well as to that of a musician. We should not have inserted the term antipathy, as applied at all to painting, but on account of its being found among some writers on that art, and that our readers might not be disappointed when seeking its explanation.

ANTIPATRIA, in *Ancient Geography*, a town placed by Pliny in Macedonia, towards the south, in Elymiotis, upon the Celydnus, to the north-west of Adrianopolis. Livy, speaking of its capture by the Romans, says, that it was situated in a narrow defile.

ANTIPATRIS, or *Capharsaba*, formerly called *Capharsalema* (1 Maccab. vii. 31.), a town of Palestine, placed by Reland and M. d'Anville in Samaria, to the east of Apollonia, on the sea-coast. It was of little repute till it was rebuilt by Herod the Great in the plain of Capharsaba, which, according to Josephus, was watry and fit for plants, with a river and a grove encompassing the city. It was 18 miles from Jerusalem, and in the way to Cæsarea Palestina, (Acts, xxiii. 31.), and within the borders of Samaria and the half tribe of Manasseh. Herod called it Antipatris, in honour of his father Antipater.

ANTIPELARGIA, among the *Ancients*, a law, whereby children are obliged to furnish necessaries to their aged parents. The *ciconia*, or stork, is a bird famous for the care it takes of its parents when grown old. Hence, in some Latin writers, this is rendered *lex ciconiaria*, or the stork's law. Puffavant has published a dissertation *De Antipelargia*, Basil, 1672, 4to.

ANTIPERISTALTIC, in *Anatomy*, a motion of the intestines producing a contrary effect to that which the peristaltic motion naturally occasions. The latter, in a state of health, determines the residue of the alimentary matter downwards towards the anus; whilst the former, being the consequence of disease, urges the contents of the intestines upwards into the stomach. See *PERISTALTIC Motion*.

The word is derived from *αντι*, against, *πειρι*, about, and *σπλιτικος*, that which hath the power of compressing.

ANTIPERISTASIS, in *Philosophy*, the action of two contrary qualities; one whereof is supposed, by its opposition, to excite and heighten the force of the other.

The word is formed of *αντι*, contra, against, and *πριστασις*,

to stand round, or to restrain; q. d. *circumobfistentia*, or the renitency against any thing that surrounds or besets another.

Antiperistasis is usually defined, "the opposition of a contrary quality, whereby the quality it opposes becomes heightened or increased: or the action whereby a body attacked by another, collects itself, and becomes stronger by such opposition: or it is an increase of the activity of one quality, caused by the opposition of another."

Thus, cold, say the school-philosophers, on many occasions, exalts the degree of heat, and dryness that of moisture. Thus it is, say they, that quick-lime is set on fire by the effusion of cold water; and so water becomes warmer in winter than in summer by antiperistasis; and to the same cause it is owing, that thunder and lightning are excited in the middle region of the air, which is continually cold.

This antiperistasis was a principle of great use and extent in the Peripatetic philosophy.

Mr. Boyle has canvassed this doctrine thoroughly, in his *History of Cold* (Works by Birch, vol. ii. p. 659.). It is certain, that *a priori*, or considering the reason of the thing abstracted from the experiments alleged to prove an antiperistasis, it appears highly absurd; since, according to the course of nature, one contrary ought to destroy, not to strengthen another.

In effect, not only reason, but experiment also, concludes against the notion of an antiperistasis: the leading argument urged in behalf of it is, the heating of quick-lime in cold water; now how astonishing the laziness and credulity of mankind, who have so long and generally acquiesced in what they might so easily have found to be false! for if, instead of cold water, the lime be quenched with hot water, the ebullition will always be far greater than if the liquor were cold.

As to the refreshing coldness which subterraneous places afford in summer, it may be denied that they are then really colder than in winter; though, if the contrary were allowed, it would not necessarily infer an antiperistasis. The smoking of waters drawn from deep places in frosty weather, does not necessarily infer such water to be warmer than at other times when it does not smoke, since that effect may proceed, not from the greater warmth of the water, but from the greater coldness of the air. For a man's breath in a cold summer, or in mild winter weather, becomes very visible; the cold ambient air suddenly condensing the fuliginous steams discharged by the lungs; which in warm weather are readily diffused in imperceptible particles through the air. See **COLD** and **EFFLUVIA**,

ANTIPHARMACA, in the *Materia Medica*, medicines suited to resist poison.

ANTIPHATES, in *Entomology*, a species of **PAPILIO** found in America, and described by Fabricius, from a specimen in the British Museum. The wings are tailed, white; margin brown, fasciated with white; posterior pair, beneath yellowish at the base, and fasciated with black. This is the specific character, to which it is added, that the exterior margin has seven white bars; the tail is very much elongated, ovate, and black; the black bands on the base of the posterior wings two in number, and apex of the wings white, with a few black dots.

ANTIPHELLOS, or **ANTIPHELLUS**, in *Ancient Geography*, a town of Asia Minor, in Lycia, took its name probably from the town of Phellus, which was situated at a small distance to the north. The small island of Cisthenes lay opposite to it.

ANTIPHERNA, among the ancient Greeks, denoted a kind of settlement made on a wife in case of surviving her husband, as an equivalent for her dowry.

This word seems to answer to what in our law is called a JOINTURE.

ANTIPIIIII, in *Ancient Geography*, a place of Africa in the Mareotic, mentioned by Ptolemy, and also by Strabo.

ANTIPIILOGISTICA, in the *Materia Medica*, medicines or remedies suited to resist, diminish, or cure inflammation, or an inflammatory state of the system.

ANTIPIION, in *Biography*, an Athenian orator, was born at Rhamnus in Attica, and hence called the *Rhamnusium*. He was instructed by his father Sophilus in rhetoric, and was deemed not inferior in eloquence to Themistocles, Aristides, Pericles, or Gorgias, his immediate predecessors; and he was preceptor in this art to Thucydides, who mentions him as an eminent orator. Quintilian (Inst. l. iii. c. 1.) informs us, that he was the first who wrote precepts on oratory; and Ammianus Marcellinus (l. xxx. c. 4.) says, that he first introduced the practice of pleading for money. Plutarch, as well as Thucydides, represent him as an energetic and persuasive orator, of fertile invention, and ingenious in adapting himself to the prejudices and interests of his auditors. Philostratus (de Sophist. l. 1.) describes him as possessing peculiar powers for soothing the minds of his hearers, and alleviating grief. Plato, however (in his Menexenus) treats his talents with contempt, and makes Socrates employ him in opposition to Aspasia; but Socrates, it should be remembered, had been insulted by the sophists, and particularly by Antiphon. His talents, as it is observed to his dishonour, were employed in establishing the tyranny of the four hundred in Athens; and, as Plutarch says, he was, for this offence, condemned and executed as a traitor, and his body thrown out of the walls of the city, in the first year of the 92d Olympiad, or 412 years before Christ. Others have given a different account of the manner of his death. Sixty orations under his name were formerly extant, but there now remain only 16; of which the subjects are criminatory, for murder or manslaughter, or defensive in similar causes. Fabricius and other critics think that they are genuine, though their authenticity has been questioned by others. They have been edited, with the orations of Æschines, Lyfias, &c. by Aldus at Rome, in folio, in 1513; by H. Stephens, in 1575; and in 8vo. by Minutius, at Hanau, in 1619. Plutarch. de Vita x. Oratorum, apud op. tom. ii. p. 832. Fabr. Bibl. Græc. l. ii. c. 26. § 2. t. i. p. 884.

ANTIIPHONALLY, from *anti*, *contra*, and *φωνη*, *voice*, in respect of church music, imports as much as alternately, or anthem-wise.

The Greeks have a method of singing *antiphonally*, *antiphonatum*, called by them *αλληλοφωνω*, wherein two persons sing together, and then are silent, and so on.

ANTIIPHONARY, *antiphonarium*, a service book which contained all the invitatories, responsories, collects, and whatever else was said or sung in the choir, except the lessons. This is otherwise called *responsorium*, from the responses therein contained. The author of the Roman antiphonary was Pope Gregory the Great.

This is a book containing, in Gregorian notes, the anthems and hymns of the Romish church. The Abbé Feytaud, in correction of Rousseau, says that the book only which contains the *anthems* is styled the *Antiphonarium*. When the psalms and hymns are understood to be included, it is called *vesperal*; when it contains the chants of the mass, it is termed *gradual*. The processional book contains the benediction, station, and processional chants. The funeral chants occupy the *ritual*.

We also find mention of nocturnal and diurnal *antiphonaries*, for the use of the daily and nightly offices; summer

and winter *antiphonaries*; also *antiphonaries* for country churches, &c. By the provincial constitutions of archbishop Wincellessa, made at Merton, A. D. 1305, it is required that one of these should be found in every church within the province of Canterbury.

The use of these, and many other popish books, was forbidden by the 3d and 4th of Edward VI. c. 10.

ANTIIPHONY, *ANTIIPHONA*, the answer made by one choir to another, when the psalm or anthem is sung alternately between two.

ANTIIPHONY, sometimes denotes a species of psalmody, wherein the congregation, being divided into two parts, repeats the psalms, verse for verse, alternately.

In this sense, antiphony stands contradistinguished from *symphony*, where the whole congregation sings together.

Antiphony differs from *responsorium*, because in this latter the verse is only spoken by one person, whereas in the former, the verses are sung by the two choirs alternately. The original of antiphonal singing in the western churches is referred to the time of St. Ambrose, about the year 374. That father is said to have first introduced it into the church of Milan, in imitation of the custom of the eastern church, where it appears to be of greater antiquity, though as to the time of its institution, authors are not agreed. It was most probably introduced at Antioch.

St. Ignatius, who, according to Socrates (E. H. l. vi. c. 8.), had conversed with the apostles, is generally supposed to have been the first who suggested to the primitive christians in the east the method of singing psalms and hymns alternately, or in dialogue: dividing the singers into two hands or choirs, placed on different sides of the church. Socrates, and several of the fathers, pretended, that it was revealed to St. Ignatius by a vision, in which he had seen choirs of angels praising the Holy Trinity in this manner by singing alternate hymns. The custom soon prevailed in every place where christianity was established. But Theodoret (E. H.) l. ii. c. 24) informs us, that this manner of singing was first practised at Antioch. Suidas, under the word *χορος*, says, that the choirs of churches were, in the time of Constantine, the son of Constantine the Great (who reigned from 337 to 361) and of Flavian, bishop of Antioch, divided into two parts, who sung the Psalms of David alternately; a practice, he adds, that began at Antioch, and was thence dispersed into all parts of the christian world. Indeed, it seems, that many of the primitive christians had not any more sublime conceptions of the celestial employment, or the joys of the blessed, than that they were eternally singing. The ancient hymn, "Te Deum laudamus," still retained in the church, appears to have furnished the poet Dante with a model of the 28th canto of his "*Paradiso*;" where, under three different hierarchies, consisting each of three choirs or choruses, the heavenly host of cherubim and seraphim are singing perpetual hosannahs. Milton has also assigned them the same employment:

" ——— Their golden harps they took;
Harps ever tun'd, that glitter by their side
Like quivers hung, and with preamble sweet
Of charming symphony they introduce
Their sacred song, and waken raptures high:
No voice exempt, no voice but well could join
Melodious part, such concord is in heaven."

Paradise Lost, book iii.

See Burney's Hist. of Music, vol. ii. p. 10.

ANTIIPHONY is also used to denote the words given out at the beginning of the psalm, to which both the choirs are to accommodate their singing.

ANTIPHONY, in a more modern sense, denotes a kind of composition made of several verses extracted out of different psalms, adapted to express the mystery solemnized on the occasion.

ANTIPHONA ad introitum, that anciently sung in the introit of the mass.

ANTIPHONA invitatoria, that repeated at the psalm *Venite exultemus*.

ANTIPHONÆ majores, those seven used to be sung in the time of Advent, at the Magnificat, and during the seven days before Christmas.

ANTIPHONÆ processionales, those sung at processions.

ANTIPHONÆ rogationes, those rehearsed at rogations.

ANTIPIHRASIS, derived from *αντι* and *φρασις*, of *φραζω*, I speak, in Rhetoric, a sort of figurative expression, which has a contrary meaning to what it carries in appearance. Or, a kind of irony, wherein we say one thing, and mean the contrary.

Sanctius defines antiphrasis to be a form of irony, whereby we say a thing, by denying what we ought rather to affirm it to be: as when we say, "it did not displease me;" or, "he is no fool;" meaning, "I was pleased with it: or "he is a man of sense." On this principle the antiphrases ought to be ranked among the figures of sentences, and not among those of words.

It is a common error, to make antiphrases consist in single words; as when we say, that the *Parææ* are thus called by antiphrasis, because they spare nobody, "*PARCÆ, qui nemini parcunt.*" St. Jerom, in his epistle to Riparius against Vigilantius, says, he ought rather to be called "*Dormitantius per antiphrasin,*" than Vigilantius, because he opposed the christians holding wakes at the tombs of the martyrs.

Sanctius holds it improper to call these antiphrases; because *phrasis* is not applicable to a single word, but signifies *orationem, aut loquendi modum*.

ANTIPIHRASICA, in the *Materia Medica*, medicines adapted to resist and cure phthisis or consumption.

ANTIPIHUS, in *Entomology*, a species of *PAPILIO* that greatly resembles *P. Polydorus*, but is still a distinct insect. The wings are tailed, black on both surfaces, with seven lunated red spots on the posterior pair. Fabricius, and Donovan's Insects of India.

ANTIPIINO, in *Geography*, a town of Russia, in the province of Saratov on the Volga, 100 miles south of Saratov.

ANTIPIEURITICA, in the *Materia Medica*, medicines suited to cure pleurisy.

ANTIPIODAGRICA, medicines suited to cure the gout.

ANTIPODES, from *αντι*, against, and *πους, ποδος*, a foot, in *Geography*, a relative term, denoting such inhabitants of the earth as live diametrically opposite to one another.

The Antipodes are those who live in parallels of latitude equally distant from the equator, the one toward the north, the other to the south; and under the same meridian, though 180°, or just half of that meridian, distant from one another.

The Antipodes have nearly the same degree of heat and cold; and the same length of night and day; but at contrary times: it being midnight with one, when it is noon with the other; and the longest day when it is the shortest with the other.

Again, as the horizon of any place is 90° distant from its zenith, the Antipodes have the same HORIZON. And hence, when the sun rises to one he sets to the other.

Plato is said to have first started the notion of Antipodes

and likewise to have given them the name: as he conceived the earth to be of a spherical figure, it was easy for him to infer, that there must be Antipodes.

Many, and particularly Lactantius and Augustine, ridiculed the notion. These fathers are strangely perplexed to think how men should hang pendulous in the air, with their feet uppermost, as he thought they must do in the other hemisphere.

This perplexity was owing to their not considering, that the lowest point, with regard to the inhabitants of our earth, is the centre; and that the terms *up* and *down* are relative, and merely signify farther from or nearer to the centre, to which all heavy bodies gravitate. If we traversed the globe, we should, in every part of it, have the sky over our heads, and our feet towards the centre; and we should every where call it *up* over our heads, and *down* under our feet; although the same right line which is *down* to us, if continued through and beyond the opposite side of the earth, would be *up* to the inhabitants on the opposite side. Our Antipodes may as well imagine, that we stand with our heads hanging downwards, as we conceive that this is their pendulous position; but if we changed places, we should find that we stood equally upright and firm wherever we were. Nay, the fact is, that we, who are now on what we are ready to call the uppermost side of the earth, and so wonder how another, in the situation of our Antipodes, can stand securely on the undermost side, with his head hanging downwards, shall be carried by the revolution of the earth, in the space of 12 hours, to the situation where our antipodes now are, although we shall be as far from them as before; and when we arrive there, we shall find no difference as to our manner of standing; but we shall then see the opposite half of the heavens, and imagine that they have moved half round the earth.

If we may believe Aventine, Boniface, archbishop of Mentz and legate of pope Zachary, the eighth century, declared a bishop of that time, called Virgilius, heretic, for maintaining that there was such a thing as Antipodes.

But this piece of history is controverted by the authors of the *Mem. de Trevoux*: as having been made use of, it seems, by some persons, to shew that the church has been mistaken in its decisions.

As to the sentiments of the primitive Christians with regard to the Antipodes, some, rather than admit the conclusions of the philosophers, absolutely denied the whole, even the demonstrations of the geometers relating to the sphericity of the earth: which is Lactantius's way. Instit. lib. iii. cap. 24. Others only called in question the conjectures of the philosophers; which is St. Augustine's method, *De Civit. Dei*, lib. xvi. cap. 9. After putting the question, whether there ever were nations of the cyclopes, or pigmies, or of people whose feet stood outward, &c. he comes to the point of Antipodes, and asks, "whether the lower part of our earth be inhabited by Antipodes?" He made no doubt of the earth's being round, nor of there being a part diametrically opposite to ours, but only disputes its being really inhabited. And the considerations he suggests for that purpose are just enough, as that they who asserted Antipodes had no history for it; that the lower part of the earth may be covered with water; and that to place Antipodes there, of a different origin from us (as must have been the opinion of the ancients, since they thought it impossible to go from our world to theirs), is to contradict scripture which teaches, that the whole race descended from one man. Such are the sentiments of that father. It may be added, that the Christian fathers were not the only persons who disputed the truth of the Antipodes. Epicurus and Lucretius had

had done it before them, at the end of his first book, v. 1063, &c. See also Hierarch, lb. De Facie in Oibe Lunæ; and Ptery, who relates the opinion, lb. in cap. 5.

ANTIPOLES, in *Ancient Geography*, now ANTIPES, a city of Gaul, near the river Varus, in Narbonensis Secunda, situate on the Mediterranean; built and colonized, according to Strabo, by the Marseilles, from whose authority it was withdrawn by a decree of the Roman senate, in the time of Augustus. Others say, that it was taken by them from the Ligurians of Gaul, called Degates. It was once very considerable, and had a port, a theatre, and many public monuments. See ANTIPES.

ANTIPOPE, a false or pretended pope; or one that is, or is pretended to be, irregularly elected in opposition to another.

Cædres gives the history of no less than twenty-four schisms in the Romish church, caused by antipopes; some took their rise from a diversity of doctrine or belief, which led different parties to elect each their several pope; but the greater part from dubious controverted rights of election, the fruits of chicanery and ambition.

ANTI-PORTICO is used by some for a vestibule, or porch, at the entrance of an edifice.

ANTI-PRAXIA, from *anti* and *πραξια*, *I perform*, in the *Ancient Physic*, denotes a contrariety of functions, temperaments, &c. in different parts of the body; invented to account for that contrariety of symptoms which frequently concur in hypochondriac cases, when, e. gr. the liver is charged with being immoderately hot, and the stomach excessively cold.

The moderns, particularly Etmüller, refute the notion of an antipraxia, on this principle, that the blood circulating duly through the whole body, warms all the parts, as well the stomach as liver proportionably. To which some advocates for the ancient system object, that this is confounding the preternatural state with the natural.

ANTI-PREDICAMENTS, in *Logic*; see ANTE-PREDICAMENT.

ANTI-PROBABILISM, the doctrine or system of those who hold it unlawful to follow the less probable opinion in opposition to the more probable one.

There have been vigorous advocates for antiprobabilism; for even among its greatest enemies, the Jesuits, F. Gilbert has a treatise in favour of antiprobabilism, viz. "Antiprobabilismus, seu tractatus theologicus fidelem totius probabilismi stateram continens," &c. Par. 1703, 4to.

ANTI-PROBOLE, in *Rhetoric*, a figure whereby the defendant adopts or admits the charge brought against him by the prosecutor.

E. gr. supposing the prosecutor's *επιβολη* to be, "Titus has killed Caius;" the defendant's antiprobole may be, "I have killed him, but undesignedly."

ANTI-PROPEMPTICON, in *Poetry*, a poem wherein a person going a journey addresses himself to his friends. Such is that of Ovid, lib. i. Trist.

"Cum subit illius tristissima noctis imago," &c.

It is opposed to PROPEMPTICON.

ANTI-PROTASIS, in *Rhetoric*, a solution of the PRO-TASIS.

ANTI-PSARA, in *Geography*, a small island in the Grecian Archipelago, two miles from the island of Ipsara.

ANTI-PSORA, from *anti* and *ψωρα*, *itch*, in *Pharmacy*, remedies proper against the itch.

ANTI-PTOSIS, a figure in *Grammar*, whereby one case is put for another.

The word comes from *anti*, *pro*, and *πτωσις*, *casus*.

ANTI-PYRETICA, from *anti* and *πυρ*, *fire*, or ANTI-FEBRILIA, among *Physicians*, an appellation given to medicines against fevers.

ANTI-PYRGOS, or ANTI-PYRGUS, in *Ancient Geography*, a part of Africa belonging, according to Ptolemy, to Marmotica.

ANTIQUA, in *Entomology*, a species of PHALÆNA that inhabits Europe. The anterior wings are ferruginous, with a white lunated spot in the posterior angle. Female apterous. Linnæus, Fabricius, &c.

ANTIQUANUS, or rather ANTIQUANUS, in *Ornithology*, a species of Lanius, having a long wedge-shaped tail; above yellowish rufous; beneath white; head, bill, wings, legs, and upper side of the tail black. Gmelin. This is the antiquan shrike of Latham, and pie-greife d'Antique of Sommerat. It inhabits Panay, one of the Philippine islands, but chiefly about Antigue, one of the provinces thereof. Its size is that of the red-backed shrike; bill large and black; the upper mandible very long, and extremely incurved; irides dusky; head black; back yellowish rufous; throat and breast white; quills and bastard wing coverts black; the wings reach only to the beginning of the tail, which is very long and wedge-shaped; the two middle feathers are wholly black; the others black above, and reddish beneath, with a rufous spot at the tip; legs dusky black. Latham.

ANTIQUARE, among Roman lawyers, properly denotes the rejecting of a new law, or refusing to pass it.

In which sense, *antiquating* differs from *abrogating*; as the latter imports the annulling of an old law, the former the rejecting of a new one. See A.

ANTIQUARE is also used for a law's growing obsolete, or into disuse, either by age or non observance.

ANTIQUARIUM, among the *Ancients*, denoted a place or apartment, wherein their antique monuments were preserved.

ANTIQUARTIUM is used by some modern practitioners, for a specific against the quartan ague.

Hence some call the Jesuits bark *antiquarium Peruvianum*. Wedelius also speaks of an *essentia antiquaria*.

The *antiquarian* of Riverius is a preparation of *mercurius dulcis*, *aurum fulminans*, sulphur of antimony, and scammony.

ANTIQUARY, ANTIQUARIUS, a person who studies and searches after monuments and remains of the ancients; as old medals, books, statues, sculptures, and inscriptions: and, in general, all curious pieces that may afford any light into antiquity.

Formerly there were several other kinds of antiquaries. The LIBRARI, or copyists, i. e. those who transcribed in fair legible characters, what had been before written in the notes, were called by this name. They were also denominated *calligraphi*. They were also employed in repairing books injured by age.

In the chief cities of Greece and Italy, there were other persons of distinction, called *antiquaries*, whose business it was to show strangers the antiquities of the place, to explain the ancient inscriptions, and to give them all the assistance they could in this way of learning.

This was, doubtless, a very curious and useful institution, and might well deserve to be re-established. Pausanias calls these antiquaries *επιγραφαί*. The Sicilians call them *mythologi*.

There was an ancient college of antiquaries erected in Ireland by Ollamh Fodhla, 700 years before Christ, for the composing a history of that country. And to this, say the Irish historians, it is owing that the history and antiquities of that kingdom may be traced back beyond those of most other nations.

Foundations of this kind have often been wished for, and sometimes also attempted, in England.

Sir H. Spelman speaks of a society of Antiquaries in his time, to whom his treatise of the terms, written in the year 1614, was communicated, he himself being one of the number.

The society was founded in 1572, by archbishop Parker, Camden, sir Robert Cotton, Stowe, and others. Application was made, in 1589, to queen Elizabeth for a charter, and a house wherein they might hold their meetings, erect a library, and the like. But by the death of that princess, their application proved abortive. Her successor, king James I. was far from favouring their design.

In the year 1717, this society was revived again, since which time no interruptions having happened, it is at present in a very flourishing condition; consisting of many learned and ingenious men, of the nobility, gentry, clergy, &c. whose business, as members, is to discover the antiquities of their own, as well as those of other nations.

This society was incorporated by the king's charter, in the year 1751, by the name of the President, Council, and Fellows of the Society of Antiquaries of London; their council consists of twenty-one persons, ten of whom are annually changed: the election of members is by ballot, a certificate signed by three or more fellows being previously exhibited for six ordinary successive meetings, except in the case of peers, members of the privy council, and judges, who may be proposed by a single member, and ballotted for the same day; and the choice is determined by a majority of two-thirds. Every member pays an admission-fee of five guineas, and two guineas a year, or an additional sum of twenty-one guineas. They have weekly meetings on Thursday, from seven of the clock in the evening till nine. This society began to publish its discoveries, &c. in 1770, under the title of "Archæologia."

A similar association was founded in Edinburgh, in 1780, and received the royal charter in 1783. See SOCIETY.

ANTIQUARY is also used, by *Ancient Writers*, for the keeper of the antiquarium, or cabinet of antiquities.

This officer is otherwise called *archæota*, or *antiquary*, of a king, a prince, a state, or the like.

Henry VIII. gave John Leland the title of his antiquary, a title which, says the author of his life, no body ever enjoyed besides himself. But the restriction, we suppose, was only intended to be understood in respect of the kings of England. M. Schott, we find, had the title of antiquary to the king of Prussia; P. Pedruzzi, that of antiquary to the duke of Parma; M. Gallant resided some time in Turkey, under the title of antiquary of the king of France. The university of Oxford have still their antiquary, under the denomination of *custos archivorum*. The kings of Sweden have been at great expences in order to illustrate the antiquity of their country, having established an academy of antiquaries with this single view.

The office of the ancient Irish antiquaries was to preserve the genealogies of the kings of Ireland, to correct the regal tables of succession, and deliver down the pedigree of every collateral branch of the royal family.

P. Labbe and Petavius have published pieces expressly concerning the apparatus of antiquaries.

ANTIQUATA, in *Conchology*, a species of ARCA, that inhabits the Mediterranean, Indian, and American seas. The shell is obliquely heart-shaped, with many unarmed grooves. Linnæus, Gmelin, &c. This kind is rather large, white, and covered with a hairy epidermis; a compressed prominent angle in the anterior slope.

ANTIQUATA, a species of CHAMA, found in the Atlan-

tic, American, and Indian seas. The shell is rather heart-shaped, grooved longitudinally, and striated transversely. Linnæus. It is spotted with brown or ferruginous, and has from nineteen to twenty-two ribs; the margin is dentated; beaks inflected back; and a deep clofed fissure before. Gmelin, &c. Adanson calls this shell *ajar*.

ANTIQUATED, ANTIQUATUS, something obsolete, or grown out of date or use.

ANTIQUÉ, ANTIQUUS, in a general sense, something that is ancient.

ANTIQUÉ is chiefly used among architects, sculptors, and painters; who apply it to such pieces of buildings, sculpture, painting, &c. as were made at the time when the arts were in their greatest perfection among the ancient Greeks and Romans; viz. from the age of Alexander the Great to the time of the irruption of the Goths into Italy, under Alaric, in the year 400.

In this sense the word stands opposed to *modern*. Thus we say, an *antique* building, or a building after the *antique*; an *antique* bust, or bas-relievo; the *antique* manner, taste, &c.

The science of antiques is also called by Spon ARCHÆOGRAPHIA.

Under this is included the knowledge of ancient coins, medals, inscriptions, buildings, statues, sculptures, MSS. vessels, weights, measures, &c.

ANTIQUÉ is sometimes also contra-distinguished from *ancient*, which denotes the lesser degree of antiquity, when the art was not in its utmost purity.

Thus *antique architecture* is frequently distinguished from *ancient architecture*.

Some writers also use the compound, ANTIQUO-MODERN, in respect of the old Gothic churches, and other buildings, to distinguish them from those of the Greeks and Romans.

ANTIQUÉ, more especially applied to *Painting*, designates such works of the ancient painters as were produced before the destruction of the Roman empire. It appears very certain, that painting was but in an infantile state among the Assyrians and Egyptians, as it was and still continues to be among the Persians and Chinese, which is known from the accounts we have received, and the specimens which are extant; but it is thought extraordinary, that there should remain any degree of uncertainty with us respecting the state of painting among the ancient Greeks and Romans, when it is allowed that statuary, the twin sister-art, should have prevailed in so wonderful a degree, as to astonish the world with the excellent works which were produced by them, and remain the noble monuments of their superior skill, the unrivalled objects of admiration, the patterns of imitation, and the standards of excellence. It has, however, been the subject of controversy with respect to the degree of excellence to which the ancient painters carried their art; the following observations are by sir Joshua Reynolds.

"From the various ancient paintings which have come down to us, we may form a judgment with tolerable accuracy of the excellencies and defects of art among the ancients. There can be no doubt, but that the same correctness of design was required from the painter as the sculptor; and if the same good fortune had happened to us in regard to their paintings, to possess what the ancients themselves esteemed their master-pieces, which is the case in sculpture, I have no doubt but we should find their figures as correctly drawn as the Laocoon, and probably coloured like Titian. What disposes me to think higher of their colouring than any remains of ancient painting will warrant, is the account which Pliny gives of the mode of operation used by Apelles,

that over his finished picture he spread a transparent liquid like ink, of which the effect was to give brilliancy, and at the same time to lower the too great glare of the colour: *Quod absoluta opera atramento illinebat ita tenui, ut id ipsum reperculsi claritatis colorum excitaret.—Et tum ratione magna ne colorum claritas oculorum aciem offenderet.* This passage, though it may possibly perplex the critics, is a true and artist-like description of the effect of glazing or scumbling, such as was practised by Titian and the rest of the Venetian painters; this custom, or mode of operation, implies at least a taste of what the excellence of colouring consists, which does not proceed from fine colours, but true colours; from breaking down those fine colours which would appear too raw, to a deep-toned brightness. Perhaps the manner in which Corregio practised the art of glazing was still more like that of Apelles, which was only perceptible to those who looked close to the picture, *ad manum intuenti demum appareret*; whereas in Titian, and still more in Bassan and others his imitators, it was apparent on the slightest inspection: artists, who may not approve of glazing, must still acknowledge, that this practice is not that of ignorance. Another circumstance that tends to prejudice me in favour of their colouring, is the account we have of some of their principal painters using but four colours only. I am convinced the fewer, the cleaner will be the effect of those colours, and that four are sufficient to make every combination required; two colours mixed together will not preserve the brightness of either of them single, nor will three be as bright at two: of this observation, simple as it is, an artist, who wishes to colour bright, will know the value. In regard to their power of giving peculiar expression, no correct judgment can be formed; but we cannot well suppose that men, who were capable of giving that general grandeur of character which so eminently distinguishes their works in sculpture, were incapable of expressing peculiar passions. As to the enthusiastic commendations bestowed upon them by contemporaries, I consider them as of no weight. The best words are always employed to praise the best works; admiration often proceeds from ignorance of higher excellence. What they appear to have most failed in is composition, both in regard to the grouping of their figures, and the art of disposing of the light and shadow in masses. It is apparent that this, which makes so considerable a part of modern art, was to them totally unknown.

“If the great painters had possessed this excellence, some portion of it would have infallibly been diffused, and have been discoverable in the works of the inferior ranks of artists, such as those whose works have come down to us, and which may be considered as on the same rank with the paintings that ornament our public gardens. Supposing our modern pictures of this rank only were preserved for the inspection of connoisseurs two thousand years hence, the general principles of composition would be still discoverable in those pictures; however feebly executed, there would be seen an attempt to an union of the figure with its ground, some idea of disposing both the figures and the lights in groups. Now, as nothing of this appears in what we have of ancient painting, we may conclude that this part of the art was totally neglected, or more probably unknown.

“They might, however, have produced single figures, which approached perfection both in drawing and colouring; they might excel in solo (in the language of musicians), though they were probably incapable of composing a full piece for a concert of different instruments.” Reynolds’s Notes upon Frenoy, note 37, verse 350.

ANTIQUE, in *Sculpture*, a statue, busto, basso-relievo, or other work, the production of ages prior to the fall of the

Roman empire; a term chiefly applied by sculptors to the works of the ancient Greeks and Romans.

The statues of the ancients were very numerous, chiefly arising from their custom of deifying and erecting statues in honour of almost all the heroes and celebrated characters among them. But the Romans seem to have surpassed the Greeks in the number of their Gods. “There was no place in Rome,” Livy observes, “which was not full of gods and sacrifices;” and for this reason, Quartilla says, “our country is so full of deities, who honour it with their presence, that it is more easy to find a god than a man.”

Antique sculpture is universally supposed to be far superior to the productions of modern times: it is certain, that the best antiques greatly surpass modern sculpture in general; but it is equally true, that the best modern works exceed by far the majority of the ancient. And here it may not be improper to remark, that the different casts in plaster, and specimens in marble which are brought to England from abroad, are carefully selected from the mass of productions; and therefore an Englishman is not usually aware of the deficiencies that are attached to the bulk of the works which remain abroad.

One considerable advantage which antiques possess above modern productions is, that they are in general works of much longer time. It was in many instances among the ancients considered sufficient for one sculptor to have executed four or five statues in the course of his life; hence we find, that the most celebrated marbles of antiquity are finished to a degree that will bear the closest inspection, and will appear equally complete in all the different lights in which they may chance to be placed. Another advantage of the antique above the modern is, that they are the works of artists, who were continually in the habit of viewing nature half or quite naked, owing to the scanty cloathing of the lower orders of people in the climates of Greece and Italy: the artists were able to study these fine examples of nature while in action, as running, wrestling, boxing, and playing at the several athletic games and exercises of those times; and especially in the gymnasia or public places, where the youths performed their various feats quite naked. Here all the different motions and beautiful play of the muscles, together with an amazing variety of postures and attitudes, were exhibited to the attentive observer; and with a dignity, truth, grace, and expression, that can never be imitated by those mercenary models, that sell their ignoble nakedness to the artists in our modern academies. The clothing also of those days, being light and scanty, did not confine and disfigure the body, as unfortunately is the case in modern times. They had also, if report be true, peculiar advantages in the statues of some of their goddesses; as it has been asserted, that even the modest women of those days considered themselves honoured by being allowed to sit as models for a goddess: and that in consequence of this, noblemen of the first distinction would bring their daughters to the artist for that purpose; report has also gone so far as to state, that not less than four hundred young women of the first rank and greatest beauty stood to the sculptor who executed the Venus de Medicis.

In many instances, the ancients seem to have bestowed as much labour on the subordinate parts of their statues as on the principal; hence we very often find the fingers, toes, nails, ears, and hair as highly finished as the face or body; whereas, modern sculptors in general are apt to bestow their labour upon the more important parts, to the neglect of the inferior. But in many other instances the ancients neglected, to a very inexcusable degree, what they conceived to be of subordinate consideration: the following remark in one of the lectures of sir Joshua Reynolds, is a sufficient evidence

of this fact. "The ancient sculptors," says he, "neglected to animate the features, even with the general expression of the passions. Of this, the group of the boxers is a remarkable instance; they are engaged in the most animated action with the greatest serenity of countenance;—this frequent deficiency in ancient sculpture could proceed from nothing but a habit of inattention to what was considered as comparatively immaterial."

But it is nevertheless proper to remark here, that the ancients in their bustos, where the face became the principal object of attention, excelled to a great degree; and undoubtedly surpass modern sculptors by far: their treatment of the human countenance, displayed in the beauty and dignity of some of their heads and bustos, is beyond description: they were acquainted to the smallest nicety with the feat of every expression, and were perfect masters of the art of bringing each into full effect.

Simplicity is a great characteristic of antique sculpture in general: this principle is attached not only to the attitudes of their figures, but to the disposition of the drapery, the hair, and every lesser attribute: scarce an instance of the *outré* or extravagant is to be found among the finer antiques. But this principle, however beautiful, was often carried too far; and in many instances rendered their works stiff and uninteresting, which may certainly be considered the chief defect of antique sculpture. The ancients, in order to preserve dignity and majesty in the statues of their gods, heroes, emperors, philosophers, and other great characters, often placed the head and body of the statue in an upright position, which in very many instances bordered upon stiffness; and by purposely avoiding every trifling turn or angle in the drapery that might tend to destroy its simplicity, they were sometimes drawn into the opposite error: we therefore find in many instances, though each fold may be beautiful in itself, that their draperies are composed of a continued repetition of long and straight lines.

There is a subordinate mistake attached to many of the best as well as to the inferior antique statues; where, in order to strengthen them, the stump of a tree, or a piece of rock is introduced, as incorporated with the flesh of the limb against which it is placed; whereas, it is evident that some drapery or other disguise should be thrown over the support, to conceal an effect so awkward and unnatural.

There was also a great degree of false taste among the ancients, manifested in their custom of introducing metallic eyes, and working the heads, hands, and feet of some of their statues in marble of a different colour from the other parts of the figure; but this mistake does not belong to their principal and most celebrated works.

For some account of the chief antique statues, see the following articles:

Adonis.	Faunus.	Meleager.
Amazone.	Flora.	Melpomene.
Antinous.	Ganymede.	Mercury.
Antonine Column.	Gladiator.	Narcissus.
Apollo.	Hercules.	Niobe.
Ariadne.	Juno.	Poppea.
Bacchus.	Jupiter.	Trajan Pillar.
Ceres.	Laocoon.	Torso.
Cicero.	Livia.	Venus.
Cleopatra.	Marcus Aurelius.	Urania.
Cupid.	Mars.	
Discobolus.	Marsyas.	

See also SCULPTURE and STATUE.

ANTIQUENSIS, or ANTIGUENSIS, in *Entomology*, a species of APIS that inhabits the islands of Antigua. It is

hairy and black; thorax and anterior part of the abdomen yellow. Fabricius and Gmelin.

ANTIQUENSIS, rather ANTIGUENSIS, is also a species of MUTILLA that inhabits Antigua, and is described by Fabricius and Gmelin. It is red, abdomen black at tip, and streaked with white.

ANTIQUITY, ANTIQUITAS, is used to denote the times or ages past long ago.

Thus we say, the heroes of antiquity, the marks or footsteps of antiquity, monuments of antiquity, &c.

ANTIQUITY is also used to denote the works or remains of ancient times. See MONUMENT, REMAINS, RUINS, &c.

Thus we say, a fine curious piece of antiquity; Italy, France, and England, abound in antiquities.

ANTIQUITY is also used to denote the great age of a thing, or its duration from times of old.

In this sense we say, the antiquity of a kingdom, a custom, or the like; most nations lay claim to an antiquity much greater than they can truly warrant. The present age may be said to be the antiquity of the world; which was but new in what are commonly called the ancient days, according to the received chronology.

There are great disputes concerning the antiquity, or age of the world.

Aristotle carried it even to eternity; Parmenides, Pythagoras, and the Chaldeans, were of the same opinion: but the generality of philosophers, as well as divines and historians, have always held an origin of it; though where to fix that origin is the difficulty. The different systems of the chronology of the Greeks, the Egyptians, the Jews, the Hebrew Text, and the Septuagint version of Scaliger, of Pezron, of sir Isaac Newton, &c. to say nothing of the Chinese annals, leave the point infinitely embarrassed.

Dom. Pezron thinks he has merited well of the public by adding 2000 years to the age of the world, which had been taken from it by Scaliger and others; but this did not hinder F. Martianay from entering a prosecution against him in the archbishop's court of Paris for heresy. His crime was following the Heathen rather than the Hebrew chronology, in which however he was preceded by the generality of the fathers and primitive writers of the church; among whom it appears to have been a common practice, to make 5500 years between the creation and the incarnation. In reality, the Jews are charged with having corrupted their chronology; by which the moderns have been misled.

Some have proposed to trace out the antiquity of the earth, by an observation of the saltiness of the sea; others by observing the elevation of the bottom of the sea, or the growth of its strata. One mark or proof of antiquity has been started by Rudbeck, which he pretends to have carried to a demonstration; it is taken from the thickness of a certain black crust, called in the Swedish tongue, *mat-iorden* and *swart-myllan*, which covers the surface of the earth, being formed of a mixture of rotten grass and other herbs, with dust and a kind of mud, which the melted snow leaves behind it. According to this antiquary, there are at least 500 years requisite to form an inch thick of this crust, which in many places of Sweden is found to be upwards of seven inches thick, where urns have been dug up full of bones and ashes. From whence it follows, according to this author, that it is upwards of 3500 years since burning the dead was practised in Scandinavia.

Recupero, the historiographer of Ætna, suggests an argument in favour of the antiquity of the earth from the several strata of lava that have issued at different times from this mountain. A stream of lava, which Diodorus Siculus relates to have burst out in the time of the second Punic war,

is covered at this day only with a very scanty soil; and in digging pits and wells, several strata of lava have been discovered with earth to a considerable thickness over the surface of each stratum; in one instance, seven distinct surfaces of this kind were pierced; and allowing 2000 years for the interval between two eruptions, the lava that composed the first or lowest stratum, must have flowed from the mountain above 14,000 years ago. Brydone's Tour, &c. vol. i. p. 131.

But this argument is very fallacious, because we learn from sir William Hamilton's remarks on the soil of Naples, that since the first eruption of Vesuvius, which destroyed the ancient town of Herculaneum in the year 79, there have been six eruptions of lava, forming as many different strata, with veins of good soil between them. Phil. Transf. vol. lxi. N^o 1. See ΑΤΣΑ.

There is scarce a nation under heaven but lays claim to a greater degree of antiquity than the rest of its neighbours: the Scythians, the Phrygians, the Chaldeans, Egyptians, Greeks, Chinese, &c. pretend each to have the honour of being first inhabitants of the earth: several of these nations, lest they should be outstripped in their pretensions by any of the rest, have traced up their origin to ages long before the received account of the creation. Hence the appellations *aborigines, indigenæ, terrigenæ, antelunares*, &c. The Athenians were not ashamed to pretend to be *autochthones*; and what is most remarkable, Socrates himself gives them this ridiculous appellation, which, as some others of the philosophers have wisely observed, only put them on a level with ants and grasshoppers. Mem. Acad. Infer. tom. vii. p. 408.

The Chaldeans pretend to astronomical observations of 470,000, or 473,000 years; they mention the precise king who reigned over them at the time of the deluge, whose name was Xisuthrus, and attribute to him several things which we ascribe to Noah.

The Chaldaic antiquities of Berofus are lost, except a few fragments which have been collected by Jos. Scaliger, and since more fully by Fabricius. Annus of Viterbo, a Dominican monk, towards the close of the fifteenth century, would not suffer us to want such a treasure, but officiously went to work, and forged a Berofus out of his own brain, which he published at Rome in 1498. The monk went farther; and from the same mint soon after produced Manetho's supplement to Berofus, from the time of Ægyptus king of Egypt, to the origin of the Roman state. The mischief is, Manetho lived before Berofus; this anachronism alone had sufficed to betray the cheat.

St. Augustine laughs at the folly of the Egyptians, who pretend to observations of the stars above 100,000 years old: in effect, no people appear to have been warmer in the contest for antiquity than those of Egypt. They pretend two periods of time; one shorter, during which the throne of Egypt had been filled by men; the other almost infinite, wherein gods and demi-gods had worn the crown. From Isis and Osiris to Alexander they reckoned a space of 23,000 years, the time before that, while the gods reigned, made 42,984 years more; the whole duration from the beginning of their monarchy amounting to 65,984. De Civ. Dei, lib. xviii. c. 40.

The computation of their dynasties, as given by Manetho, a writer of their own (of whom we have extracts in Syncellus, taken from Julius Africanus and Eusebius), extends to 5530 years before Alexander's time; and the Egyptian chronicle, cited by the same Syncellus, goes farther, reckoning 36,525 years. Diogenes Laertius makes no less than 48,863 years from the reign of Vulcan. Yet the Scythians,

the Phrygians, the Ethiopians, and some others, still insisted on their priority to the Egyptians; and in the judgment of many seem to have carried their point. Justin, after Trogius, gives the precedency to the Scythians; and affirms, that they were always allowed to have been before the Egyptians.

It is no wonder that their catalogues should be ridiculously incredible, when the Egyptians made their first kings reign 1200 years a-piece; and the Assyrians theirs about 4000.

But the Chinese is esteemed the most ancient monarchy in the universe; having cultivated the sciences from the earliest ages, and subsisted at least these 4000 years with the same laws, manners, and usages.

Some indeed have called in question the truth and authenticity of the Chinese annals; yet we find them confirmed, at least as high as 660 years before Christ, by the annals of Japan. At worst, the Chinese antiquities stand on as good a footing as those of either Greece or Rome. Their annalists, both for order and chronology, are not inferior to any of those ancients so much admired among us; but far surpass them in point of antiquity, and have a better title to be credited, as having written by public authority, which can be said of few Greek or Roman pieces, except perhaps the Capitoline Marbles, which are not properly a history.

We have no inconsiderable confirmation of the truth of the Chinese account, from an ancient observation of a grand conjunction of the planets under Chuen-Hio, emperor of China, related by Martinius. That prince lived 2513 years before Christ. M. Kirchius has defended the observation against Cassini, and shewn a conjunction must really have happened at the time mentioned by the Chinese annals.

But the authenticity of this observation, and the whole of the Chinese chronology, has been attacked by an ingenious author, Mr. Costar.

Dionysius Halicarnassus has traced the Roman antiquities, Josephus the Jewish antiquities, Berofus the Chaldaic antiquities, Sanchoniathon the Phœnician antiquities, Manetho and Marsham the Egyptian antiquities.

The Phœnician antiquities of Sanchoniathon are preserved in part by Eusebius. We have an English translation of Sanchoniathon, with notes, by bishop Cumberland, and a continuation from the canon of Eratothenes. Lond. 1720, 8vo.

Dionysius gave his book the title of Roman Antiquities, on account of the curious inquiries he had made concerning the origin of the Romans, by tracing them back to the remotest ages. For fidelity as well as instruction he is generally preferred to Livy; his accounts are more ample, and his facts described with more particulars; he gives a full idea of the Roman ceremonies, the worship of their gods, sacrifices, manners, customs, discipline, policy, courts, laws, &c.

To the class of supposititious antiquities belong the Hetrurian antiquities, pretended to have been found by Scornelli near Volaterra; and published in 1636, by Curtius Inghiramus, who is generally supposed to have been the forger of them. A great number of fictitious names of ancient authors are cited in this book to give the better face to the cheat; but the style betrayed it. Allatius and Ernestius early detected the imposture. Fabr. Bibl. Lat. lib. iv. cap. 13.

The British antiquities, before Cæsar's invasion, are utterly dubious, not to say fabulous. Old chronicles speak of Samothæ, the son of Japhet, as the founder of the British monarchy; Albion, a descendant of Cham, invaded it three hundred years after; and about 600 years after this, Brute, grandson

grandson of Æneas, came and took possession of the island in the year of the world 2880, giving it the name which it still retained when Cæsar made his attempt. This is Geoffroy of Monmouth's system of the antiquities of the British nation, which the generality of our historians admit, for want of a better. It has been defended by A. Thomson of Queen's College, in the preface to his English translation of that writer.

It must not be forgot that the Irish also pretend to be the most ancient of all nations; they trace their origin without interruption up to Japhet. But the Scots still dispute their priority with them, holding themselves to be an elder branch of the Scythians, the first of men.

The antiquity of religion has been often urged as a proof of the truth of it. Jews, Gentiles, Christians, Protestants, Papists, have all in their turns made use of the argument from antiquity. It is indeed of the inartificial kind; and comes rather under the denomination of a presumption than a proof: on the whole, it seems to have served the cause of error as much, if not more, than that of truth.

ANTIQUITY is more peculiarly used to denote the ceremonies, customs, and usages, which obtained in ancient times, either with regard to persons, places, or things.

Antiquities, in this sense, are usually divided into sacred, political, military, literary, and domestic; sometimes only into civil and ecclesiastical.

ANTIQUITIES, *sacred*, those relating to the religious worship, discipline, and belief of ancient times and people. These may be subdivided into Heathen, Christian, and Mahometan, &c.

Reland has a treatise expressly on the sacred antiquities of the Jews: Struvius on those of the Romans; Lakemacher on those of the Greek; and Stillingsfleet on those of the British churches.

Fabricius has given two plans of a thesaurus or body of antiquities; the one of Hebrew antiquities, after the manner of Grævius and Gronovius: the other of ecclesiastical antiquities, divided into twelve books. He gives the names and titles of 156 authors to be included in the first, and 101 authors for the second.

ANTIQUITIES, *Christian*, those which relate to the ancient state of the Christian church.

These are the same with what we otherwise call *ecclesiastical antiquities*.

The Magdeburg centuries are looked upon by protestants as a library of Christian antiquities.

Mr. Bingham has published a learned system of Christian antiquities.

As a principal branch of Christian antiquities, we may reckon,

ANTIQUITIES, *Biblical*, the notices of ancient laws, ceremonies, events, &c. occurring in the scriptures.

These make a branch of ecclesiastical antiquities, and bear a near relation to the Jewish, &c. antiquities.

Some pretend to deduce most of the heathen antiquities from the Bible; others, as Spencer, &c. take the contrary course, and deduce the antiquities of the Bible from those of heathenism.

To interpret Scripture, it is absolutely necessary regard be had to the heathen antiquities alluded to in them, and these not only such as are directly aimed at or approved, but also such as are purposely opposed.

Dr. Cave has published a treatise of apostolical antiquities, "Antiquitates Apostolicæ;" or the Lives, Acts, &c. of the Apostles, Evangelists, &c. Lond. 1674, fol. 1684, and 1686.

ANTIQUITIES, *civil*, all that belong not to the head of *ecclesiastical*.

ANTIQUITIES, *political*, those relating to the origin of states, governments, magistrates, and laws.

ANTIQUITIES, *national*, those employed in tracing the origin, ancient actions, usages, monuments, remains, &c. of some nation or people.

Gronovius has given a collection of the chief writers on the Greek antiquities; Rouse, Pfeiffer, Bos, Brunings, and bishop Potter, have given shorter systems; the last is the best esteemed, though found too short by some in what relates to the religion, the gods, vows, and temples of Greece. A system of this kind has been lately published (*viz.* 1801), by Mr. Harwood, in 8vo.

The best system of Roman antiquities yet extant is that of Rolius, with Dempster's notes.

We have compendiums and introductions to the Roman antiquities by Hoepfner, Nieuport, Godwin, Cantelius, Basil, Kennet, Adam, &c.

Heineccius has given a collection of Roman antiquities for illustration of civil law; and Briffonius another, drawn from the books of the civil law; Gravina's *Origines Juris Civilis* is excellent on this subject.

A body of the writers on the Roman antiquities hath been published by Grævius, and another of those on the Greek antiquities by Gronovius, both under the titles of *Theauri*.

A supplement to the former has been published by Salengre and Polenus. Danet and Pitiscus have also published lexicons of the Roman antiquities. Varro's books of Roman antiquities are entirely lost, excepting some fragments, preserved by St. Augustine.

ANTIQUITIES, *parochial*, those confined to the limits of one or more parishes, and conversant chiefly in what relates to the tithes, revenues, &c. of the churches.

Dr. Kennet has published a learned and curious work under the title of "Parochial Antiquities," attempted in the history of Ambrosden and Burchester, and other adjacent parts in the counties of Oxford and Bucks. Oxf. 1695, 4to. See Phil. Trans. N^o 220.

ANTIQUITIES, *literary*, those relating to matters of learning and study; a principal branch of these, are,

ANTIQUITIES, *academical*, the origins, usages, &c. of the ancient academies, schools, colleges, and other literary societies. These bear a near relation to scholastic antiquities, and make a branch or division of literary antiquities. Herm. Conringius has given a body of academical antiquities, and Ursinus a treatise on the scholastical antiquities of the Hebrews. Montfaucon, count Caylus, Winckelman, Iken of Bremen, &c. ought to be mentioned as collectors of antiquities of various kinds.

ANTIQUUS, JOHN, in *Biography*, an historical painter, was born at Groeningen, in 1702, and was instructed in the art of painting on glass, which he practised to the age of 20 years; but being desirous of learning the art of painting in oil, he sought improvement in France and Italy, and at Florence was retained in the service of the grand duke for six years. At this period, he painted a grand composition of the "Fall of the Giants," which, as to disposition and design, shewed equal judgment and taste. He made several journeys to Rome, and in every part of Europe through which he travelled, left memorable proofs of his genius and fine execution; and he is ranked among the best artists of his time. Pilkington.

ANTIQUUS, in *Conchology*, a species of MUREX. The beak is patulous; shell oblong, with eight roundish whorls. Linn. and Gmelin. This species inhabits the northern seas

of Europe, and is admitted as a British shell. There are three supposed varieties of it figured by Seba, Martin, and Lister: and the *murex carinatus* of Pennant has been considered as an accidental growth of the same species; but the last is certainly distinct. *Wid. Don. Brit. Shell.*, p. 119.

The shell is from four to six inches in length, of a yellowish colour, finely cancellated with transverse striae and longitudinal plaits; it has two or more angular ridges along the whorls, which are tuberculated.

ANTI-RATIONALISTS, a name sometimes given to divines, who in matters of religion are for hounding reason, and making it bend to faith, asserting that the absurdity of a thing is no reason for rejecting it.

In this sense, the rigid Calvinists and adherents to the synod of Dort have been denominated anti-rationalists, on account of the doctrine of absolute predestination, &c. The Roman Catholics are also entitled to the same appellation, on account of the doctrine of transubstantiation. M. Bayle took shelter in the system of the anti-rationalists, the better to combat the Christian doctrines of the origin of evil, providence, &c. But this, like other offensive appellations, has been very indiscriminately applied; it has been uncandidly used as a term of reproach; and reason, the first endowment conferred on mankind by their Creator, though unduly depreciated by some, has been extravagantly extolled by others, who have been enabled to extend and improve the exercise of it, especially in the province of religion, by the extraordinary communications of a divine revelation.

ANTI-RHODUS, in *Ancient Geography*, a small island situate within the port of Alexandria, in Egypt, whither Antony retired in despair, after the battle of Actium. After the example of Timon the misanthropist, he withdrew from intercourse with mankind, and called this reclusive habitation *Timonium*.

ANTIRRHEA, in *Botany*. See **CUNNINGHAMIA**.

ANTIRRHETICUM, from *ἀντι* and *ῥησις*, *I speak*, in *Literary History*, denotes a refutation of some book, author, or opinion. In this sense we also meet with the word *antirrhetis*.

ANTIRRHINUM, in *Botany* (*ἀντι*, *æqualis*, and *ῥίς*, *nasus*). *Quod fructu sit vituli narium simile*; hence it has been called *calves-snout*; class *didynamia angiospermia*. *Linn. Gen.* 750. *Gærtn.* 53. *Juss.* 120. Snap-dragon, or toad-flax; natural order, *personate*.

Generic Character. *Calyx* perianth five parted, permanent; divisions oblong, the two lower more gaping than the others; *corolla* monopetalous, ringent; tube oblong, gibbous; limb bilabiate; upper lip bifid, reflex on the sides; lower limb trifid, obtuse; palate convex, usually closed by a promiency between the lips, arising from the under lip; *nectary* at the base of the corolla produced downwards, prominent; *filamina*, filaments four, two of which are shorter; *antheræ* converging; *pollinillum*, germs roundish; style simple, of the length, and in the situation of the filamina; stigma obtuse; *pericarpium*, capsule roundish, two-celled; seeds numerous.

Essential gen. Character. *Calyx* five-leaved; *corolla* with the base produced downwards and nectariferous; *capsule* two-celled.

Fifty-two species of this plant are described, only eight of which, according to Dr. Smith, are the spontaneous growth of this country.

Species. *Leaves angular. 1. *A. cymbalaria*, ivy-leaved toad-flax; leaves heart-shaped, five-lobed, alternate; stalks procumbent; the root is perennial, from which issue long, decumbent, spreading stalks, bearing violet-coloured small flowers, with a yellow palate: it is a native of Britain, growing on crevices of rocks and old walls; hence this plant is well adapted for the

ornament of rock work; it flowers from June till October. Figured in *Curt. Flor. Lond. fasc. t. 47. Eng. Bot.* 501. 2. *A. pilifera*, hairy-leaved toad-flax, leaves kidney shaped, very hairy, alternate; stalks procumbent; the edge of the leaves divided into nine or ten obtuse crenulate lobes: a native of the Alps. *Jac. Obs. ii. t. 48.* 3. *A. elatine*, sharp-pointed toad-flax, or fluellin, leaves hastate, alternate; stalks procumbent; calyx and leaves hairy; corolla yellow; upper lip purple underneath: a British annual, growing in fields, and flowering from July till October. *Curt. Flor. Lond. fasc. i. 46. Eng. Bot.* 692. 4. *A. spurium*, round-leaved toad-flax, or fluellin, leaves ovate alternate; stalks procumbent; this plant is hairy; the upper lip of the corolla is yellow, the under purple: it is an annual British plant, growing among corn, and flowering from July till September. *Curt. Flor. Lond. fasc. iii. 37. Eng. Bot.* 691. 5. *A. cirrhosum*, tendrilled toad-flax, leaves hastate, alternate; stems spreading; petioles tendrilled; stems filiform, very branching; peduncles axillary, one-flowered; corolla bluish, with a whitish palate spotted with purple; annual: a native of Egypt; introduced in 1777, by Dr. Joseph. Nich. de Jacquin. *Jac. Hort. t. 82.* 6. *A. Ægyptiacum*, Egyptian toad-flax, leaves hastate alternate; stem erect, and much branched; this very much resembles the third species; it is an annual plant, a native of Egypt.

**Leaves opposite. 7. *A. triphyllum*, three-leaved toad-flax, leaves ternate, ovate; an annual plant, rising with an upright branching stalk, more than a foot high; leaves oval, in threes, sometimes in pairs, flowers yellow, with saffron-coloured lips: a native of Sicily; a variety of this has a purple standard and spur: this species has been cultivated here since 1640. 8. *A. triornithophorum*, leaves in fours, lanceolate; stem erect, branching; flowers peduncled; it grows more than five feet high, bearing large purple flowers: a native of Portugal and America. 9. *A. purpureum*, purple toad-flax, leaves quaternate, linear; stem erect, flower-bearing, spiked; a perennial plant, rising two feet high: it is a native of Italy; and cultivated in the Oxford garden, in 1648. *Curtis Magaz.* 99. 10. *A. versicolor*, leaves linear-lanceolate; the lower ones ternate; stem erect, spiked; it resembles the *A. linaria*, or common toad-flax, except that the upper lip is whitish, and the flowers racemose: a native of the south of Europe, and introduced, in 1777, by Monf. Thouin. *Jac. Ic. rar. t. 116.* 11. *A. repens*, leaves linear, glaucous, verticillated, or scattered; stem panicled; calyx smooth, of the length of the spur; corolla of an ash-coloured white; under lip streaked with purple: a perennial British plant, flowering from July till September. 12. *A. monspessulanum*: this, according to Dr. Smith, is the same plant as the repens. 13. *A. sparteum*, branching toad-flax, leaves subulate, channelled, fleshy, the lower ternate; stem panicled; corolla very smooth; stem about a foot high, smooth, erect, stiff; flowers racemose, yellow, with a tinge of red at the palate: a native of Spain, and introduced in 1772, by M. Richard. *Curt. Bot. Mag.* 200. 14. *A. bipunctatum*, dotted toad-flax, leaves linear, smooth, the lower quaternate; stem erect, panicled; flowers spike-headed; an annual from four to eight inches high, bearing yellowish flowers, spotted with brown on the lower lip: a native of France and Spain; introduced by M. Thouin in 1777. 15. *A. tristis*, dark-flowered toad-flax, leaves linear, scattered, the lower opposite: nectary subulate; flowers subsessile; stem eight inches long, decumbent; flowers of a dark purple. *Curtis Magaz.* 74: a native of Spain; introduced in 1727, from Gibraltar, by sir Charles Wager. 16. *A.*

16. *A. supinum*, procumbent toad-flax, leaves subquaternate, linear; stalk diffusid; flowers racemed; spur straight: a native of France and Spain; cultivated by Miller, in 1728. 17. *A. arvense*, yellow corn toad-flax, leaves sub-linear, lower quaternate; calyx hairy, viscid; flowers spiked; stem erect, a span high; the colour of its flowers varies blue and yellow; according to Hudson, it is a native of Britain. 18. *A. pelliferianum*, violet-coloured toad-flax, stem-leaves linear, alternate; root leaves lanceolate, ternate; flowers corymbed; an annual, eight inches high, with purple flowers: a native of France and Italy. 19. *A. saxatile*, rock toad-flax; leaves lanceolate-linear, scattered villose; the inferior quaternate; stem decumbent; flowers spiked; a perennial, with yellow flowers, having two orange spots on the palate: a native of Spain. 20. *A. viscosum*, clammy snap-dragon, root leaves quaternate, lanceolate; stem-leaves linear, alternate; calyx villose; about eight inches high: a native of Spain; introduced by M. Thouin, in 1786. 21. *A. multicaule*, many-stalked toad-flax; leaves quinate, linear, fleshy; flowers headed; an annual plant, about a foot high, with several stems, bearing either deep yellow, or sulphur-coloured flowers: a native of the south of Europe; and cultivated by Miller, in 1731. 22. *A. glaucum*, leaves quaternate, subulate, fleshy; stem erect; flowers spiked; a small annual, with yellow flowers; spurs pale, or streaked with blue; a native of the south of Europe. 23. *A. alpinum*, alpine toad-flax, leaves quaternate, linear-lanceolate, sea-green; stem diffuse; flowers racemed, spur straight; perennial; it has a stem about five inches high; flowers of a fine violet-purple colour, and of a deep yellow in the middle. Curtis Mag. 207. A native of the Alps. 24. *A. bicorne*, horned toad flax, leaves opposite, ovate-oblong, serrate; stem erect; flowers racemed; capsules two horned; it grows a foot and a half high, bearing blue flowers, with a yellow mouth: a native of the Cape; and introduced by Mr. F. Masson, in 1774; annual. 25. *A. villosum*, leaves all opposite, ovate, villose; stem simple; flowers opposite, lateral; a perennial with yellow flowers; introduced by Sir Francis Drake, in 1786; a native of Spain. 26. *A. originifolium*, leaves mostly opposite, oblong; flowers alternate; an annual, polymorphous plant, varying with lanceolate leaves. It grows wild on the Pyrenées; it was introduced by Lee and Kennedy, Hammersmith. 27. *A. pinnatum*, leaves opposite, pinnatifid; stem erect; flowers racemed: found at the Cape, by Thunberg.

***Leaves alternate. 28. *A. minus*, least toad-flax; leaves mostly alternate, lanceolate, obtuse; stem very much branched, spreading; calyx longer than the spur; stem erect, branched, villose, viscid; flowers small, violet coloured, with the under-lip white, and palate yellow, growing on axillary peduncles; it is a British perennial plant; found in corn fields and sandy pastures. Curtis, Lond. 541. 29. *A. dalmaticum*, leaves alternate, heart-shaped; stem clasping; stem woody, three feet high; flowers large, yellow, axillary; a native of Crete. 30. *A. hirtum*, leaves lanceolate, flaggy; flowers spiked; the upper leaf of the calyx largest; an annual, rising with a single stalk a foot and a half high; flowers of a pale yellow colour, with dark stripes, and deep yellow lips. Miller received the seeds of this species from Madrid, Jac. ic. rar. t. 117. 31. *A. genistifolium*, broom-leaved toad-flax, leaves lanceolate acuminate; panicle slender, flexuose; stem erect, much branched, three feet in height; flowers of a bright yellow colour, in loose spikes, and resemble those of the Linaria (33.); perennial or biennial: a native of Siberia, Aultria, Switzerland, &c.; cultivated by Dr. Sherard, in 1732. Jacquin Flor. Aust. t. ii. f. 244. 32. *A. junceum*, rush-like toad-flax, leaves linear, alternate; stem panicled, slender; flowers racemed; upper-lip of the

flowers white, with blue streaks; lower a pale yellow: found in Spain; introduced by M. Thouin, in 1780. 33. *A. linaria*, common yellow toad-flax, leaves lanceolate-linear, crowded; stem erect, spiked; calyx smooth, shorter than the spur: it is a common well-known plant, which, from the colour of its flowers, is vulgarly called *butter and eggs*. Woodv. Med. Bot. supp. 221. Eug. Bot. 658. 34. *A. linifolium*, leaves lanceolate, three-nerved; flowers racemed; peduncles distant, shorter than the bractæ; flowers yellow; spur the length of the flower; it grows wild on the sea-coasts of Italy; perennial. 35. *A. chalepense*, white-flowered toad-flax, leaves linear-lanceolate, alternate; flowers in racemes; calyx longer than the corolla: stem erect; an annual plant, growing two feet high; the flowers are small, white, with long spurs, produced singly, almost extending over the whole branches: a native of Italy; and cultivated in the Oxford garden, in 1680. 36. *A. reflexum*, leaves ovate, smooth; peduncles axillary, fruit-bearing, elongate, recurved; stem procumbent; this annual plant rises with filiform procumbent stems, seven inches high, bearing white flowers, with a yellow mouth, placed on solitary peduncles; it grows near Messina; and was discovered in Barbary, by Brander. 37. *A. pedunculatum*, leaves linear remote; flowers panicled; peduncles longer than the leaf, stiff, upright; stems seven inches high, branching; flowers yellow, streaked with blue: a native of Spain. 38. *A. lagopodioides*, leaves scattered, soft, recurved at the tip; spikes ovate, villose; stems herbaceous, nearly a foot high; leaves lanceolate-linear; flowers small, yellow with two orange spots within the palate: a native of Siberia.

****No leaves. 39. *A. aphyllum*, a capillary scape; this is a very singular plant, resembling a kind of moss (splachnum); no part of it produces any leaves: found near the Cape by Thunberg.

****Corollas gaping, or tail-lefs. 40. *A. majus*, great toad-flax, or snap-dragon; flowers without tails, in spikes; calyces obtuse, villose; stem from one to two feet high; leaves lanceolate or ovate; flowers violet, lower lip white, mouth yellow, spur very short pointed: a British annual, growing in sandy ground, and flowering from June till August. Eng. Bot. 129. 41. *A. orontium*, lesser toad-flax, corolla without a tail; flowers subspliked; calyces digitate, longer than the corolla; stem erect, a foot high; leaves lanceolate; corolla a pale purple; lips rose-coloured; palate yellow; spur very short, obtuse; this much resembles the preceding species; it is a British annual, affecting a sandy and calcareous soil, and flowering from July till August. Curtis, Lond. iv. 45. 42. *A. papilionaceum*, corolla tail-lefs; flowers axillary; calyx papilionaceous; leaves fleshy; leaves ovate, entire, alternate; calyx five-leaved; upper lip of the corolla bifid, lower trifid: a native of Persia. 43. *A. asarina*, heart-leaved toad-flax, corollas without tails; leaves opposite, heart-shaped, crenate; stems procumbent; a low, trailing annual; flowers of a dingy purple colour above; below greenish: a native of Italy and the south of France; cultivated in 1669, by Jacob Bobart. 44. *A. molle*, woolly-leaved toad-flax; corollas without tails; leaves opposite, ovate, tomentose; stems procumbent; flowers white villose; upper lip streaked with red: a native of Spain; cultivated by Miller, in 1748. 45. *A. unilabiatum*, corollas without tails, furnished with two calluses; leaves alternate, pinnate; stem panicled: found near the Cape, by Thunberg.

*****Corollas gaping. 46. *A. bellidifolium*, daisy-leaved toad-flax, root leaves tongue-shaped, toothed, marked with lines; stem-leaves parted, entire; flowers very small, in a long spike, which frequently contains one hundred flowers; it is a biennial or triennial, with a branched stem, two feet high: a native of the south of Europe; and cultivated in England, in 1629. 47. *A. Cal-*

nalese, Canada toad-flax, leaves linear, alternate; lower lip of the corolla spreading out, flat; an annual, with a sili-form stem, about a foot high; flowers racemose, alternate: a native of Virginia. 48. *A. micranthum*, small-flowered toad-flax, stem herbaceous, erect; lower leaves quaternate, upper alternate; flowers very small; spur short, interior; an annual, with very small blue flowers, having a white palate; they are axillary, distant, solitary, terminating the stem: a native of Spain, near Madrid. 49. *A. reticulatum*, leaves linear, channelled, scattered; those on the radical shoots generally in fives; flower-stalks shorter than the bractæ; flowers thrice as long as the calyx; spur conical, acute, a little curved, twice the length of the peduncle, yellow, streaked; upper lip erect; segments acute, divaricate, streaked; before expansion purple, changing to a blood-red, and afterwards violet-coloured; it is perennial, with herbaceous branched erect stems, having its radical shoots prostrate, and producing only one flower on each peduncle placed alternately: discovered at Algiers, whence it was sent to the royal garden at Paris, by professor Desfontaines. Its seeds were transmitted to Dr. Smith by M. Thonin; and from these seeds several plants were produced, in Chelsea garden, by the care of Mr. Fairbairn. Smith, ic. rar. fasc. i. t. 2. 50. *A. pygmaeum*, dwarf toad flax, leaves sagittate; peduncles capsulaceous; stems wand-like, prostrate; leaves an inch long upon long foot stalks; calyx extremely small; flowers yellow, little, each upon solitary axillary peduncles. 51. *A. argineum*, lower leaves in fours, linear; flowers in racemes; the upper leaflet of the calyx twice as long as the others; it is annual, having several wand-like stems nearly upright, and linear-lanceolate glaucous leaves; flowers in a terminal raceme, which contains about 30 or 40; these are yellow, and commonly their lower and upper lips are bluish; spur of the length of the flower, recurved and variegated above, with violet-coloured streaks; this species varies into what Linnæus has termed *peloria*, with from one to five spurs on different flowers on the same plant: it is a native of Spain. 52. *A. hexandrum*, leaves opposite, cordato-ovate, ferrate; peduncles axillary, one-flowered. Flor. Aut. n. 235. A native of the island of Otaheite in the South Seas. The five last species are to be considered as new, none of them being noticed by Murray in the fourteenth edition of the "Syllena Vegetabilium," published in 1784.

Propagation and Culture. The various species of snap-dragon are raised from seeds, which may be sown in April or May, or in Autumn: all the varieties of the 40th species, sown late in spring, may in July be planted out in borders, where they will flower the following spring; or they may be sown early in the spring, for flowering in the autumn of the same year; but in this case the plants are not so likely to withstand the winter; and if the autumn prove bad, they will not perfect their seeds. Any of the perennial snap-dragons may be propagated by parting the roots, or by cuttings, which, during the summer months, will readily take root. They are all pretty ornaments in a garden, and requiring very little culture, are rendered more acceptable. The antirrhinums are hardy plants, and will in general resist the cold of our winters; but the tenderer species, or those that are natives of warm climates, should be planted in pots, and removed into shelter, or placed under a hot-bed frame during frosty weather. The soil and situation in which the different species grow in a wild state, should always be considered, and their culture adapted accordingly; a dry gravelly or sandy soil well suits the 40th species and several others, especially those that are natives of Britain; and should these be planted in a rich moist soil, they become very luxuriant in a short time, but are very liable to rot in autumn or winter. Many of these plants are permitted to scatter their seeds, and thus suffered to propagate

themselves, the young plants only requiring thinning where they come up too close, and removing any weeds with which they may be encumbered. See Miller's Dictionary, by Martyn.

The *A. linaria*, or common toad-flax, is the only plant of this genus to which any medicinal virtues have been ascribed: its leaves, which have a bitterish and somewhat saline taste, are reported to be diuretic and cathartic; hence they have been recommended in dropsies and other disorders requiring copious evacuations. This plant has also been used as a resolvent in jaundice and other visceral obstructions; but it has chiefly been valued as an external application in hæmorrhoidal affections, employed in the various forms of ointment, fomentation, and cataplasm. An unguentum de linaria is to be found in the Wirtemberg, Brandenburg and Danish pharmacopœias. Linnæus (Flor. succ.) says, this plant is used as a poison for flies. See Murray, vol. ii. p. 183. Woodville, Med. Bot. vol. iv. p. 25.

ANTIRRHIUM, in *Ancient Geography*, a promontory and small town of Loeris, at the entrance of the Corinthian gulf, opposite to Rhium, whence its name.

ANTI-SABBATARIANS, a modern religious sect, who oppose the observance of the Christian Sabbath.

The great principle of the anti-sabbatarians is that the Jewish Sabbath was only of ceremonial not moral obligation: and consequently is abolished by the coming of Christ. See SA.ATH.

ANTISAGOGE, in *Rhetoric*, a figure differing little from that called CONCESSION. The following passage from Cicero is an instance of it: "Difficilis ratio belli gerendi; at plena fidei, plena pietatis; et sic dicas, magnus labor, multa pericula proponuntur; at gloria ex his immortalis est consecutura."

ANTI-SCEPTIC, something opposed to the reasonings and system of Pyrrhonists, or sceptics.

ANTISCII, compounded of *ἀντι*, against, and *σκια*, a shadow, in *Geography*, denominates people who dwell in the opposite hemispheres of the earth, and whose shadows at noon fall in contrary directions.

Thus the people of the north are antiscii to those of the south. The one project their shadows at mid-day towards the arctic pole; and the others towards the antarctic pole.

The antiscii are very often confounded with the ΑΝΤΩΕΣΙ, though the former term is more general than the latter. The antiscii stand contradistinguished from *periscii*, &c.

ANTISCI is sometimes also used, among *Astrologers*, for two points of the heavens, equally distant from the tropics. Thus the signs Leo and Taurus are held antiscii to each other.

ANTISCORBUTICS, in the *Materia Medica*, medicines proper for the cure of the scurvy.

ANTISEPTIC, from *αντι*, and *σπυρος*, putrid, of *σπυρα*, to putrify, an appellation given to such substances as resist PUTREFACTION.

We have some curious experiments in relation to antiseptic substances by sir John Pringle, who has ascertained their several virtues. Thus, in order to settle the antiseptic virtue of salts, he compared it with that of common sea-salt; which being one of the weakest, he supposes equal to unity, and expresses the proportional strength of the rest by higher numbers, as in the following table.

Salts, their antiseptic virtue.

Sea salt	-	1	Saline mixture	-	3
Sal Gemme	-	1 +	Nitre	-	4 +
Tartar vitriolated	2		Salt of hartshorn	4 +	
Spiritus Mindereri	2		Salt of wormwood	4 +	
Tartarus Solubilis	2		Borax	-	12 +
Sal diureticus	-	2 +	Salt of amber	-	20 +
Crude Sal Ammoniac	3		Alum	-	30 +

In this table the proportions are marked in intercal numbers; only to some there is added the sign +, to shew, that these salts are possessed of a stronger antiseptic virtue than the number in the table expresses, by some fractions; unless in the three last, where the same sign imports, that the salt may be stronger by some units.

Some refinous and other substances even exceed the antiseptic virtues of the neutral salts; thus myrrh, assa-fœtida, terra Japonica, and aloes, are at least twelve times more antiseptic than sea-salt. Two grains of camphor are equivalent to sixty grains of that salt. An infusion of a few grains of Virginia snake-root, in powder, exceeds twelve times its weight of sea-salt. Chamomile flowers have nearly the same extraordinary quality. The Jesuits bark has it also. Besides these, pepper, ginger, saffron, contrayerva-root, are twelve time more antiseptic than sea-salt. Dried sage, rhubarb, the root of the wild valerian, mint, angelica, ground ivy, fena, green-tea, red roses, wormwood, mustard, and horse-radish, were likewise found more antiseptic than the standard.

To the class of antiseptic medicines may likewise be added fermented liquors, acids, spirits, and even those plants called anti-acids, and erroneously supposed halteneis of putrefaction, particularly horse-radish. Now vegetables possessing this virtue are the more valuable, in that, being usually free of acrimony, they may be taken in much greater quantities than either spirits, acids, resins, or even the neutral salts.

Antiseptics are prescribed in all putrid, malignant, and pestilential cases. It is to be remarked, however, that different kinds of them are to be given in different diseases, and even in different stages of the same disease. Thus, the bark is a specific in a gangrene, when the vessels are relaxed, and the blood resolved or disposed to putrefaction; but will fail, if the vessels are too full, or the blood be too thick. It must be confessed, however, that inferences drawn from the effects of antiseptics on dead putrescible matter, may mislead us considerably in their application to the living human body. The putrescent tendency of the fluids, supposed to be present in scurvy and contagious fevers, cannot be obviated by the most powerful antiseptics alone, but will often yield to substances scarcely antiseptic in the lowest degree. On the contrary, gangrene, though generally treated with astringents and antiseptics conjoined, has often been arrested by animal food and volatile alkali.

From the great antiseptic virtue of alum, the bark, and other astringents, it should seem, that astringent had no small share in the cure of disorders termed putrid; and, indeed, the very nature of putrefaction consists in a separation or disunion of the parts. But as astringents are improper to be administered in many cases, contrayerva-root, snake-root, camphor, &c. may supply their place; which, though highly antiseptic, have very little, or any, of an astringent quality. Pringle's Obs. on the Diseases of the Army. See Dr. Macbride's Essay on the respective Powers, &c. of Antiseptics.

ANTISEPTIC substances, in Agriculture, are such substances as have a tendency to resist the putrefaction and decay of animal and vegetable matters, when united with them, either beneath the soil or upon its surface, and in the dung or compost heap. Aluminous and vitriolic substances are mostly of this kind; and likewise the astringent principle of different vegetable matters.

ANTISIGMA, among the *Ancient Grammarians,* signifies one of the notes of sentences affixed to those verses whose order was to be changed.

ANTISPASMODICS, in the *Materia Medica,* are me-

dicines proper for the cure of spasms and convulsions. Heat, especially alternating with cold; æther, wine, spirits, opium, balsam of Peru, and the essential oils of many vegetables, are the principal articles of this class of medicines. Opium excels, for its immediate effects. Peruvian balsam, in many instances, produces more lasting benefit than opium, and sometimes succeeds where opium fails. As *antispasmodics,* the essential oils differ in this from opium, that they act more on a particular part than on the system in general, and have no soporific effect. Where the strictures are produced by inanition, and a defect of vital heat, spasms are removed by those medicinal means that restore the *vis vitæ,* such as warmth, appropriate food and drink, pure airs, cordials, aromatics, and the cheerful passions.

The other *antispasmodics* will be found under the particular diseases, to which they have been applied with the greatest success; see Hysteria, Tetanus, Convulsions, &c.

ANTISPASTUS, a poetical foot, consisting of four syllables, whereof the first is short, the second and third long, and the fourth short.

ANTISPODIUM. See *SPIDIUM.*

ANTISSA, in *Ancient Geography,* was, according to Strabo, in ancient times, an island, and thus called, because it was opposite to Lesbos, then known by the name of Issa; but having offended the Romans, it was depopulated by Labco, and the inhabitants were transplanted to Methymna.

ANTI-STANCARIANS, in *Church History,* a sect of German protestants that opposed the doctrine of Stancarius, who asserted that justification was the sole effect of Christ's human nature, exclusive of his divinity.

ANTISTASIS, in *Oratory,* a defence of an action, from the consideration, that if it had been omitted, worse would have ensued. This is called by Latin writers *comparativum argumentum*: such e. gr. would be the general's defence, who had made an inglorious capitulation, that without it the whole army must have perished.

ANTISTASIS, in *Antiquity,* denotes the gibbous part of the liver in the Grecian victims.

ANTISTES, from *ante,* before, and *stis,* I stand, in *Ecclesiastical Writers,* a title usually given to bishops, though sometimes also to priests or presbyters. Among the ancient Romans, antistes was an appellation given to the chief or first orders of the priests in the provinces.

In which sense, *antistes* stands distinguished from *pater* and *magistri*.—In the more usual sense, notwithstanding, *antistes* denotes the same with *sacerdos*.

There were also females of this quality under the title of *antiste*.

ANTISTHENES, in *Biography,* an Athenian philosopher, and the founder of the Cynic sect, was born about the 90th olympiad, or the year before Christ 420. His first attention was directed to military exploits, and he acquired fame by his valour in the battle of Tanagra. But changing his object, he studied the art of rhetoric under Gorgias, and then prosecuted the attainment of more substantial wisdom under Socrates; and such was the ardour of his mind, that though he lived at the Piræum, which was distant 40 stadia from the city, he was a daily attendant on the instructions of this admired preceptor. The virtuous manners of Socrates, and the noble independence of his spirit, attracted his notice and esteem; and he determined to make the character of his teacher the object of his imitation. Whilst he was a disciple of Socrates, he discovered his propensity towards severity of manners by the meanness of his dress, and frequently appeared in a thread-bare and ragged cloak. His master perceiving that he took pains to expose,

rather than to conceal his tattered drefs, ſaid to him; "Why ſo oſtentatious? through your rags, I ſee your vanity." (Ælian, lib. ix. c. 6.) After the death of Socrates, Antiftihenes, by a reaſonable jeſt, hiſked the deſerved puniſhment of his perſecutors, Melitus and Anytas. When ſome young men came from Pontus to Athens for the purpoſe of attending upon Socrates, they were introduced to Anytas by Antiftihenes, who aſſured them, that he far exceeded Socrates in wiſdom. By this ſarcaſtic encouragement the reſentment of the Athenians againſt thoſe who had diſgraced their city by the baniſhment of ſo excellent a man, was inflamed; and the conſequence was the ſpeedy exile of Anytas, and the death of Melitus. In the ſchool eſtabliſhed by Antiftihenes, and called Cynofurgum, or the temple of the white dog, he ſedulouſly inculcated, both by precept and example, a rigorous diſcipline. In order to accommodate his manners to his doctrine, he wore a coarſe cloak, ſuffered his beard to grow, and carried a wallet and ſtaff, like a wandering beggar. His diet alſo was of the moſt ſimple kind, and he refrained from every kind of effeminate indulgence. In his diſcourſes, he cenſured the manners of the age with a degree of harſhneſs, which procured him the ſurname of "The Dog." He alſo expreſſed the utmoſt contempt for pleaſure, as the greateſt evil, and declared, that he would rather be mad, than addicted to a voluptuous manner of living. Towards the cloſe of his life, the gloomy caſt of his mind, and the moroſeneſs of his temper, ſo increaſed, as to render him troubleſome to his friends, and an object of ridicule to his enemies. In his laſt illneſs he was fretful and impatient; tired of life, and yet loth to die. When Diogenes, at that time, aſked him, whether he needed a friend, Antiftihenes replied, "where is the friend that can free me from my pain?" Diogenes preſented him with a dagger, ſaying, "Let this free you;" but Antiftihenes answered, "I wiſh to be freed from pain, not from life." He paid little reſpect to the gods and to the religion of his country; nevertheless, he ſeems to have entertained juſt notions concerning the Supreme Being. In his book, which treats on phyſics, ſays Cicero (De Nat. Deor. lib. i. c. 13.), he obſerves, that "The Gods of the people are many, but the God of nature is one." For the doctrine inculcated by Antiftihenes, ſee CYNICS. The following maxims and apophthegms are aſcribed to him: "As ruſt conſumes iron, ſo doth envy conſume the heart of man." "That ſtate is haſtning to ruin, in which no difference is made between good and bad men." "The harmony of brethren is a ſtronger defence than a wall of braſs." "A wiſe man converſes with the wicked, as a phyſician with the ſick; not to catch the diſeaſe, but to cure it." "A philoſopher gains at leaſt one thing from his manner of life, a power of converſing with himſelf." "The moſt neceſſary part of learning is to unlearn our errors." "The man who is afraid of another, whatever he may think of himſelf, is a ſlave." Antiftihenes being told that a bad man had been praifing him, ſaid, "What fooliſh thing have I been doing?" He wrote many books, of which Diogenes Laertius has given a long liſt; but none are extant, except two declamations, under the names of Ajax and Ulyſſes, which are publiſhed in the collection of ancient orators by Aldus, in 1513; by H. Stephens, in 1575; and by Canter, with a Latin verſion, as an appendix to his edition of Ariſtides, printed in folio at Baſil, in 1566. Suidas. Fabr. Bibl. Græc. lib. ii. c. 23. §. 32. tom. i. p. 830. Brucker's Hiſt. Phil. by Enſ. vol. i. p. 296.

ANTISTITIUM, is a term uſed in ancient chronicles for an abbey or monaſtery.

ANTISTIUS, in *Biography*, a phyſician whoſe name

is only known from his having been called on to examine the wounds of Julius Cæſar, after he had been aſſaſinated in the Capitol, forty-three years before the commencement of the Chriſt era.

ANTISTROCHON, from *αντι*, and *τροχων*, letter, a grammatical figure, whereby one letter is uſed inſtead of another: as *oli for illi*. This is otherwiſe called *antiphron*, by ſome writers.

ANTISTROPHE, a kind of dance in uſe among the ancients; wherein they ſtepped ſometimes to the right and ſometimes to the left, ſtill doubling their turns or converſions.

The motion towards the left, they called *antistrophè*; from *αντι*, againſt; and *τροπη*, of *τροπω*, I turn.

It was cuſtomary among the Greeks, on ſome occaſions, to dance round the altars, whiſt they ſung the ſacred hymns, which conſiſted of three ſtanzas, or parts; the firſt of which, called *ſtrophe*, was ſung in turning from eaſt to weſt; the other, named *antistrophè*, in returning from weſt to eaſt. Then they ſtood before the altar, and ſung the epode, which was the laſt part of the ſong—Hence,

ANTISTROPHE is alſo uſed in *Lyric Poetry*, in ſpeaking of the ODE, which is uſually divided into the *ſtrophe*, *antistrophè*, and *epode*.

The *antistrophè* is a kind of echo, or replication to the *ſtrophe*; and the *epode* is a lancheing out from them both.

ANTISTROPHE is alſo a figure in *Grammar*, whereby two terms or things, mutually dependant one on another, are reciprocally converted. As if one ſhould ſay, "the maſter of the ſervant, and the ſervant of the maſter."

ANTISTROPHE, in *Rhetoric*, the ſame with what is more commonly called EPISTROPHE.

ANTISYLLOGISM, in *Logic*, a fyllogiſm, which infers a contrary concluſion to that of another SYLLOGISM.

ANTITACTÆ, or ANTITACTICI, in *Antiquity*, a kind of Gnoſtics, who owned that God, the Creator of the univerſe, was good and juſt; but aſſerted, alſo, that one of his creatures had created evil, and had engaged us to follow it, in order to ſet us in oppoſition to God the creator; and that it becomes our duty to oppoſe this author of evil, in order to avenge God of his enemy.

Hence the name; which is derived from *αντιτακτω*, I oppoſe.

ANTITAUROS, in *Geography*, a chain of mountains in Cappadocia, paſſing from the ſouth-weſt to the north-eaſt, and extending from mount Taurus to the Euphrates. The inhabitants of the country now call it Rhoam-Taura.

ANTITHENAR, in *Anatomy*, from *αντι*, againſt, and *θενη*, the palm of the hand, is the name given by Riolanus to the muſcle, commonly named in England *abductor indicis manus*, to which refer. Winſlow alſo calls by this name, the *abductor pollicis pedis*, which ſee.

ANTITHESIS, from *αντιθεσις*, I oppoſe, in *Rhetoric*, a ſetting two things together by way of oppoſition to each other, that the different qualities of each may appear the more ſtrongly.

Such is that of Cicero, in the ſecond Catilinarian; "On the one ſide ſtands modeſty, on the other impudence; on the one fidelity, on the other deceit; here piety, there ſacrilege; here continency, there luſt," &c.—Such alſo is that of Auguſtus to ſome ſeditious young men; "Audite juvenes ſenem, quem juvenem ſenes audivere."—Such again is that of Seneca; "Curæ læves loquantur, ingentes ſtupent." And that of Virgil;

"Flectere ſi nequeo ſuperos, Acheronta movebo."

St. Auguſtine, Seneca, Salvian, and many other ancient writers.

the Antiates; whose ships they partly conveyed into the arsenal of Rome, and partly burnt, and with their beaks, or rollers, they adorned the pulpit erected in the forum, hence called *rylva*. Horace refers to a famous temple of Fortune in this place, l. i. od. 35.

“O Diva, gratum quæ regis Antium,” &c.

Caligula and Nero were born in this city; and Suetonius says, that the former proposed to retire thither after he had massacred the principal persons of Rome, and the latter assigned it as a place of retreat for the veteran soldiers. Tacitus informs us, that Nero was at Antium, when news was brought to him of the conflagration of Rome, which Suetonius charges upon himself. In Christian times, Antium became the see of a bishop; but it is now extinct.

ANTIXENI, a people of India, who, according to Pliny, lived on the other side of the Indus.

ANFLER, among *Hunters*, the first of the pearls that grow about the bur of a deer's horn. There are also *fur-antlers*, *brow-antlers*, &c.

ANTLESTORF, in *Geography*, a town of Germany, in the archduchy of Austria, six miles east of Entzerstorff.

ANTLIA, an ancient machine, supposed to be the same with our pump.

Hence the phrase, in *antliam condemnari*, according to the critics, denotes a kind of punishment, whereby criminals were condemned to drain ponds, ditches, or the like.

ANTÆCI, in *Geography*, those inhabitants of the earth who live under the same meridian, and at the same distance from the equator; the one toward the north, and the other toward the south.

The word is formed of *αντι*, *contra*, and *οικου*, *I inhabit*.—The *Antæci* are contradistinguished from the *Periæci*, and they are frequently confounded with the *Antiscii*.

Hence the *Antæci* have the same longitude, and equal latitudes, only of a different denomination; and, of course, they have precisely the same hour of the day and night, but opposite seasons: when it is 12 o'clock in the longest summer's day with one, it is 12 o'clock of the shortest winter's day with the other; and hence the night of the one is equal to the day of the other.

ANTOING, a town of the Netherlands, in the circle of Hainault, near the Scheldt, 1½ league S. of Tournay. It is the chief place of a canton in the district of Tournay, and department of Jemappe. The place contains 1,567, and the canton 14,849, inhabitants; the territory comprehends 125 kilometres and 19 communes.

ANTOMOSIA, from *αντι* and *ομοσ*, *I swear*, in *Ancient Writers*, an oath taken by both the parties in a criminal accusation; whereby the accuser charges the other with the fact, and the accused in his turn denies the same.

In which sense, *antomosia* amounts to the same with *diomosia*, though some distinguish between the two, restraining *antomosia* to the oath of the person accused, whereby he engages to make no other than a fair defence; and *diomosia* to the prosecutor's oath, whereby he swears that his accusation is justly founded.

Others will have *antomosia* properly denote a law-suit about things to which there are no witnesses, and which can only be decided by the oaths of the parties. Others again will have it to be, where the accused party alleging sickness for his non-appearance, the prosecutor takes an oath that the sickness is only feigned, upon which the judges proceed to sentence.

ANTONA, in *Ancient Geography*, a name given by Tacitus (*Vit. Agricol.*) to a British river, concerning which antiquarians are not agreed. Some writers, as Camden, Carte, &c. appropriate the name to the Nan of North-

amptonshire, others to the Wye; and Whitaker (*Hist. Marcherellæ*, c. 12.) to the Avon of Warwick. Other writers contend for the Southampton river, to which, according to Camden, the name of Anton was applied, and from which he deduces the appellation of Haute-Seyre for Hampshire, and Hanton for Southampton.

ANTONNACUM, or ANTONNACUM, a town of the Treveri, now Andernach, below Coblentz. See *ANDERNACH*.

ANTONELLO DA MESSINA, in *Biography*, a painter of history and portrait, was born at Messina in 1426; and was the first of the Italian masters who understood the art of painting in oil, the secret having been communicated to him by John Van Eyck of Bruges. In order to obtain it, he visited Flanders, and so effectually recommended himself to Van Eyck by his affability and ingenuity, as well as by a present of some fine Italian designs, that Van Eyck disclosed to him the whole mystery; and Antonello soon acquired an eminence almost equal to that of his instructor. From a principle of gratitude he continued in Flanders as long as Van Eyck lived; and, after his death, settled at Venice, where he painted several pictures, that were universally approved, as the subjects were well designed, the figures beautifully drawn, and the whole very delicately finished. He communicated the secret to a painter, named Domenico, from whom Andrew Del Castagno obtained the knowledge of it; and from him the art of painting in oil gradually became known, and generally practised through all Italy. He died at Venice at the age of 49. Pilkington.

ANTONGIL BAY, in *Geography*, lies on the east side of the island of Madagascar, in S. lat. 16°, and E. long. 49° 2'.

ANTONIA TOWER, or *Fortress*, was situated in Jerusalem, at the N. W. angle of the temple, founded by Hyrcanus, on a steep hill; and so elevated, that it commanded the temple. Herod enlarged and fortified it, and gave it the name of Antonia, instead of Baris, by which it was known when Hyrcanus occupied it, in honour of Marc Antony. It communicated with the temple by an arcade, and when the Romans had possession of the country, they kept a garrison in this tower; and by commanding the temple from this fort, they were masters of the city by means of the temple. It was taken by Titus, who thus became master of the temple and of the city.

ANTONIAN Water, in the *Materia Medica*, the name of a medicinal water of Germany, remarkably pleasant to the taste, and of service in many cases as a medicine.

This water, if mixed with any acid liquor, raises a considerable effervescence; and, when mixed with Rhenish wine and sugar, which is a common way of drinking it, makes a great hissing and bubbling, and becomes turbid and milky. If powder of galls be added to it, it suffers no change, but remains limpid and colourless; whence it is plain that it contains no iron nor vitriol. Syrup of vitriol mixed with it turns the whole green, whence it is plain that it contains an alkali: and if oil of tartar be added to it, it becomes turbid and milky, and precipitates a white sediment; whence it appears that there is either common salt or a calcareous earth in it. If it be exposed some time to the air in an open vessel, it, like all the other mineral waters, loses its pungent taste and pellucidity, becoming turbid and vapid. A quart of it evaporated with a very gentle heat, leaves two scruples of a very dry sediment, which being separated by another solution, is found to be one-half of an alkaline salt, and the other a calcareous earth. Oil of vitriol mixed with the salt produces a great effervescence; and a penetrating scent arises like that produced by the mixing of oil of vitriol and common salt. Hence it appears, that these waters contain

tain a small portion of an alkaline salt, a larger portion of sea-salt, and a yet larger of a calcareous earth, and with these a very considerable quantity of a subtle and penetrating mineral spirit.

It is a very temperate water, not too strongly operating either by stool or urine; and hence it is a very proper drink for persons in chronic and in many acute cases, either alone, or mixed with wine, to supply the place of malt liquor, which is proper but in very few illnesses. A long use of it alone may also prove of considerable service in hypochondriac cases.

ANTONIANO, SILVIO, in *Biography*, a cardinal and learned man of the 16th century, was born at Rome in the year 1540; and, at the early age of 10 years, distinguished himself by extemporaneous productions in verse. Having given various proofs of his singular talents in this way, he was taken under the protection of the duke of Ferrara, who provided him with excellent masters to instruct him, assigned him a pension, and established a professorship of belles lettres, with which he was honoured at the age of 17 years; and on this occasion he pronounced some orations, which were afterwards published. When cardinal de Medicis succeeded to the popedom, under the name of Pius IV., he sent for Antoniano to Rome, and made him Latin master and secretary to his nephew, cardinal Borromeo. He was also appointed professor of polite literature in the college at Rome; and discharged this office with such reputation, that he had for his auditors not only a prodigious number of people, but even 25 cardinals. He was afterwards chosen rector of the same college. At the death of Pius IV., he was chosen secretary of the sacred college by Pius V.; and occupied this post for 25 years. Clement VIII. made him secretary of the briefs, afterwards his chamberlain, and finally a cardinal. He fell a sacrifice to intense study, in his 63d year. Antoniano is said to have written with such ease and correctness, that he never made a blot or erasure; and his manners were so irreproachable, that he is said never to have transgressed the bounds of the strictest chastity. He left a variety of works both in prose and verse; of which the principal are, "De Christiana Puerorum Educatione;" "Dissertatio de Obscuritate Solis in Morte Christi;" "De Successione Apostolica;" "De Stylo Ecclesiastico seu de conscribenda Ecclesiastica Historia;" "De Primatu Sancti Petri;" "Lucubrationes in Rhetoricam Aristotelis, et in Orationes Ciceronis." It is also said that he had a share in the catechism of the Council of Trent. Gen. Dict.

ANTONIDES, J. VANDER GOES, an eminent Dutch poet, was born of an abaptist parents, at Goes in Zealand, in the year 1647. After a tolerable education, he was apprenticed to an apothecary: but the fame of Vondel and some other poets of his country, led him to cultivate his natural talent in this way. He began with translations from the best Latin writers, and then launched into original composition. His tragedy upon the conquest of China by the Tartars, intitled "Trazil," was followed by "Bellona in Chains," which was highly applauded by the best judges. But his capital work was entitl'd "Y Stroom," or the River Y, which forms the port of Amsterdam. This recommended him to M. De Bufero, deputy in the college of admiralty, who procured for him the place of secretary in that department. Soon after he had been thus raised from his obscure situation, he married a clergyman's daughter, who had a taste for poetry; but abandoning the Muses, and devoting himself to the duties of his office, he soon died of a consumption in the flower of his age, in 1684. He had proposed, and begun a life of St. Paul, but left only a few fragments of it.

His works were published, in 4to. at Amsterdam, in 1714, under the inspection of Mr. Hoogstraten, one of the masters of the Latin school. Gen. Dict.

ANTONIENBERG, in *Geography*, one of the highest points of the Swiss Alps, in the Valais.

ANTONINE COLUMN, in *Architecture and Sculpture*. See COLUMN.

ANTONINUS PIUS, or *Titus Aurelius Fulvius Boionius Antoninus*, a Roman Emperor, was born at Lanuvium or Lavinium, in the vicinity of Rome, A. D. 86; and descended from virtuous and honourable ancestors at Nismes in Gaul. Both his grandfathers, and his father, were consuls. After the death of his father, his education was completed in the house of his maternal grandfather, Arrius Antoninus. At an early age he conciliated the affection of all his relations, so that when they died, he was distinguished by their bequests, and became rich; and as he advanced to maturity, he combined, in a very eminent degree, all the virtues of the heart with a gentle and majestic countenance, a cultivated understanding, a commanding eloquence, and an exemplary conduct. In his sentiments and actions he was guided by moderation; and he was perfectly free from affectation and vain glory. Having attained the consulate A. D. 120, he was afterwards one of the four consulars appointed by Adrian to govern Italy, and became proconsul of Asia; where, by the mildness of his authority, and the affability of his manners, he engaged the affection and attachment of persons of all ranks and parties. On his return to Rome, he was admitted into the council of Adrian; nor did the emperor pursue any measure of consequence without his advice. He married Anna Faustina, the daughter of Annius Verus; and though he was not very happy in his choice, he behaved with singular respect to the father, comforting him in his old age, and supporting him with his arm when he came into the senate; and hence it is said, he obtained the surname of *Pius*. By this marriage he had two sons, who died young; and two daughters, one of whom, named Faustina, was married to Marcus Aurelius, afterwards emperor. Upon the death of Ælius Verus, Adrian determined upon the adoption of Antoninus; and having overcome his reluctance to undertake so great a charge as that of the Roman empire, he declared his nomination in the presence of a council of the principal senators, on the 25th day of February, A. D. 138, and immediately made him his colleague in the proconsular and tribunitian authorities. He also caused him to adopt the son of Verus, an infant of seven years of age; and Marcus Annius, afterwards Aurelius, who was about 17 years old. Upon the death of Adrian, July 10, A. D. 138, or, as some say, A. D. 139, Antoninus succeeded to the throne, amidst the congratulations of the senate, and to the universal satisfaction of the Roman people. His accession was marked by the usual titles and honours conferred on the Roman emperors; to which the senate added that of *Pius*, either from the circumstance already mentioned, or on account of the respect with which he treated the memory of his predecessor. Although the pacific reign of Antoninus affords little variety of incident, it is nevertheless to be regretted, that we derive our direct information of this reign from a confused and obscure historian, Capitolinus; the records of Dio Cassius having been lost. From the testimony of this historian, however, it appears, that, after his accession to the empire, he pursued the same course of conduct which he had done whilst he was a private person; fixing the attachment of his friends, and conciliating his enemies; consulting the senate on every transaction of importance, and frequently giving an account to the people of all his actions

and negotiations. Such was his general conduct, that M. Aurelius was convinced, by his example, that a prince might lead a private life even in a court. He reduced most of the impolls and tributes, and enjoined his collectors to exact them without severity; observing, that he rather chose to be poor, than that his coffers should be filled at the expence of an oppressed people. Soon after his accession, he distributed the greatest part of his private estate among the indigent citizens; and when the empress Paulina repined at his liberality, he told her, that a prince ought to have no private interest, no private property, and nothing in view but the public welfare. He was judicious in the choice of the governors of provinces; and, it is said, that he never promoted an undeserving person to any employment or honour. The pensions of useless persons were abolished, and he alleged, that he could not bear to see the state impoverished by those who did it no service, but lived idly upon the labours of others. But though he was sparing of the public money, no one ever charged him with avarice, as he was exhibiting daily evidence of an unbounded generosity. He never would accept legacies from such as had children; and he ordered the estates of criminals condemned for extortion to be restored to their heirs, after having rendered satisfaction to those whom they had pillaged. He also extirpated the whole tribe of informers; and upon any misfortune that happened to any city or province, he was ready to lessen their tribute or taxes. Antoninus every where favoured men of learning, encouraged the education of youth, and spent considerable sums in providing for the children of indigent parents. Although he was not addicted to building, he raised several stately edifices in Rome and its vicinity. He caused a port to be made at Caieta or Gæta; repaired that of Terracina; finished Adrian's magnificent mausoleum; built a stately palace at Lorium in Etruria, about ten miles from Rome, where he had been educated; and he contributed large sums towards repairing several ancient buildings in Greece, Ionia, Syria, and Africa. It is probable that Nimes was indebted to him for those magnificent decorations that still distinguish it, the amphitheatre and aqueduct. Having declared at the commencement of his reign, that he would not spill the blood of any senator, he religiously observed his engagement; so that when one was convicted of parricide, he contented himself with banishing him, after he had confessed his crime. When Attilius Tatianus and Priscianus were accused of conspiring against his life, and after the latter had destroyed himself, and the former was banished, he took the son of the survivor under his care, and brought him up as if he had been his own child; nor would he suffer any inquiry to be made after their accomplices, observing to the senate, who urged him to it, "I do not care the world should know by how many persons I am hated." In the exercise of jurisprudence, he issued three decrees which manifest a laudable spirit of equity. The first was, that no one should be again prosecuted on a charge of which he had been once acquitted:—the second, that the children of a person become a Roman citizen, who were not so themselves, should not, as in former times, forfeit their inheritance to the treasury:—and the third, that a woman prosecuted for adultery by her husband, should have a right to recriminate. He also issued rescripts in favour of the Christians, to protect them from popular rage and legal injustice. One of these, addressed to the people of Asia Minor, is preserved by Eusebius (E. H. l. iv.), and it bears testimony to their character. So pacific was his disposition, that he never engaged in any war which he could avoid; and was often heard to say, "that he had rather save one citizen than destroy a thousand enemies."

Some commotions, however, arose in various parts of the empire; but they were suppressed, without much difficulty, by his lieutenants. In Britain, the incursions of the Brigantes were suppressed; and the boundaries of the Roman province were extended, by building a new wall to the north of that of Adrian, from the mouth of the Elbe to that of the Tweed.

Antoninus, by his temper and conduct, gained the affections, not only of his own people, by whom he was revered as their father and protector, but of those who were the avowed enemies of Rome. Such was the influence of his known character, that a letter addressed by him to the king of Parthia, induced him to decline a meditated invasion of Armenia, and to disband his troops. The kings of Hyrcania, Bactria, and India, sent ambassadors to him, court- ing his friendship and alliance. Pharasmanes, king of Iberia, paid him a visit in person at Rome; and the Lazi, the Armenians, the Quadi, and several other nations, readily received such persons as he was pleased to appoint for their rulers, though they were not then subject to the empire. Antoninus is by some historians compared, and by others even preferred, to Numa, on account of the tranquillity which Rome enjoyed during the greatest part of his reign; and his extraordinary care of all things belonging to the worship of the gods, and to religion.

Some persons have thought that he extended his indulgence to the empress Paulina, whose life was dissolute, to an improper and culpable extreme. After she died, she was honoured with divine worship, priests, temples, and statues of gold and silver; games were also instituted to her honour; and her statue was carried, by his express order, amongst those of the other gods, at the Circensian sports.

Soon after his advancement to the throne, Marcus Aurelius was distinguished by his favour; for he married him to his daughter Faustina, and declared him Cæsar; nor had any reason to regret the honours he conferred upon him, and the confidence he reposed in him. In this state of domestic and public tranquillity, Antoninus attained his 74th year; and being seized with a fever at one of his country seats at Lorium, he closed his life, in the month of March, A. D. 161. He foresaw the event, and summoned the principal officers of state to attend him; and in their presence confirmed his choice of Marcus Aurelius as his successor, and caused the imperial ensigns to be carried to him. In the state of derangement, occasioned by his fever, his thoughts were evidently directed to the republic; and he deprecated the anger of the kings whom he supposed hostile to it. In a lucid interval, he gave as a watchword to the prætorian tribunes, "Equanimitas;" and then placidly expired, after a reign of 22 years seven months and 26 days. His funeral was conducted with pomp and magnificence; his remains were deposited in the tomb of Adrian; he was ranked by the senate among the gods; a temple was built to his honour; and priests, sacrifices, and annual sports were instituted. His death, though at an advanced age, was the subject of universal lamentation; and so highly honoured was his memory, that succeeding emperors chose to bear the name of Antoninus, as the most popular appellation they could assume. Marcus Aurelius and the senate consecrated to his memory a sculptured pillar, which still subsists, as one of the principal ornaments of Rome, under the name of the *Antonine Column*. *Anc. Un. Hist.* vol. xiii. p. 294—309. *Crevier's Hist. of the Emperors*, vol. vii. p. 198—245. *Lardner's Works*, vol. vii. p. 388—395.

ANTONINUS, MARCUS ANNIUS AURELIUS, one of the most illustrious of the Roman emperors, was born in the year

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of Rome, 874, A. D. 121, during the second consulship of his grandfather, L. Annius Verus; and descended from an honourable family of Suceubis or Ueubis, of Beticæ, supposed to be related to that of Adrian. He was distinguished by the patronage and favour of Adrian in his early years; and at the age of six years he advanced him to the rank of knighthood, at eight admitted him into the college of Salii, and at length adopted him into the imperial family, so that his succession to the empire was secure. The Emperor used to call him M. Annius Verissimus, on account of his great sincerity. When he was adopted, he took the names of M. Ælius Aurelius Verus, Aurelius being an appellation peculiar to the family of Antoninus, and Ælius belonging to that of Adrian, into which Antoninus had been adopted. Upon his accession to the empire he assumed the name of Antoninus; and he is usually distinguished from his predecessor by the prenomens of Marcus, or surname of Philo-sophus, which was given him by the unanimous consent of historians, and not by any decree of the senate. The care of his education in his infancy was devolved on his paternal grandfather, Annius Verus; and in his maturer years, he was brought up in the palace, and instructed under the direction of Adrian, in all the arts that pertain both to the body and mind; eloquence and poetry, however, engaged little of his attention, for his thoughts and time were devoted to philosophy; and more especially to that kind of philosophy that tended to regulate the temper and conduct. His principal masters were Herodes Atticus, and Cornelius Fronto, Greek orators: and above all, Junius Rusticus, who joined to an illustrious birth an hereditary taste for the stoical philosophy. Such was his proficiency under these instructors, that at the age of 12 years he assumed the philosophical gown. To his intense study he added the austerities of the profession to which he was devoted; and by unwearied application and strict regimen he prejudiced his health. With the gravity of a philosopher, however, he blended no part of the severity; his address was agreeable and engaging to all with whom he had any intercourse; he was virtuous without pride, modest without timidity, and grave without melancholy. To his masters he was respectful and grateful; he honoured them living and dead; and kept their images of gold, with those of his household gods, in his domestic chapel; and offered up chaplets of flowers and victims at their tombs. At 15 years of age, he put on the manly gown, and soon afterwards was appointed præfect of the city. About this time he manifested his disinterested generosity, by surrendering to his only sister, Annia Cornificia, all his father's effects. His adoption into the Aurelian family, by Antoninus Pius, took place in his 17th year; but such was the superiority of his mind to all distinctions of this nature, that the honour produced no change in his disposition and mode of life, nor in the course of his studies. After his adoption, he was appointed quæstor; and immediately upon Adrian's death, Antoninus married him to his daughter Faustina, advanced him to the dignity of Cæsar, and conferred upon him, in quick succession, a variety of civic honours. He was appointed chief of one of the centuries of Roman knights, had a household assigned him, was twice consul, and received the tribunitial and præconsular authorities. Such was the emperor's confidence in him, that he was called to all his public councils, and he gave away no office without his advice and approbation; and such was Aurelius's attachment to the emperor, that, during almost 23 years, he never slept apart from him more than two nights either in town or country.

Of the disinterestedness of Aurelius, we have a singular instance on his first accession to the throne. L. Aurelius

Commodus, the son of that Verus whom Adrian had adopted, had been joined with Marcus Aurelius in the adoption of Antoninus, and equally intended for the succession. But Antoninus, on account of the errors and vices of his youth, had excluded him from any share in the sovereignty, and appointed Aurelius heir to the empire; and, upon the death of Antoninus, the senate confirmed his purpose. Aurelius, however, procured Commodus to be declared his colleague, promised him his daughter Lucilla in marriage, and ordained that he should take his own original name of Verus, by which name he was afterwards known. In the first year of Aurelius's reign, Faustina was delivered of male twins, one of whom died under age, and the other was Commodus, who succeeded his father in the empire, disgraced his elevation, and became notorious for every kind of profligacy. About the same time, the public tranquillity was disturbed in Germany, Great Britain, and Parthia; but the most important events were, the invasion of Armenia by Vologeses, king of the latter country, and his irruption into Syria. Verus proceeded to the east, rather making a tour of pleasure than conducting a military expedition, and took upon him the supreme command. After four years the war terminated in a treaty, which restored the king of Armenia to the throne; and though Verus was an object of contempt, on account of his luxurious disposition, to foreign nations, and had little personal share in the honour of bringing the war to a termination, he was dignified with the title of "Imperator" by the army, and other pompous appellations. During the course of this war, he married Lucilla; and, on his return to Rome, both emperors were united in the triumph, and a cordial harmony subsisted between them. The character of these two emperors was, however, essentially different. Verus was debauched and extravagant; and if we except cruelty, in the exercise of which he was restrained, he exhibited all the follies and vices of the worst of his predecessors. Aurelius, on the other hand, was a philosopher on the throne; and exhibited a pattern of every private and public virtue. He distinguished himself more than any former emperor had done, by his respect and deference to the senate, and by his attention to the happiness of the people. He would not touch the money in the treasury, without the express permission of the senate: "Every thing," said he, "belongs to the senate and people; we have nothing which we do not hold of you; the very palace we inhabit is your property." When he was under a necessity of patiently enduring those vicious habits which he could not reform by gentle means, he used to say, "We cannot make men as we wish them to be: we must take them as they are, and do the best with them that lies in our power." So determined was Aurelius in resisting exactions, that he checked the rapacity of his soldiers at a moment of victory, by telling them, "All that is given you beyond your due must come from the blood of your parents and relations." In a time of public distress, he preferred selling the furniture of his palace, and the rich wardrobe of his wife, to increasing the burden of the provinces. Although he did not wholly abolish, he restrained the expence of public exhibitions: and he softened the cruelty of the combats of the gladiators, by substituting less hurtful arms in the room of those that were destructive. Lenity was the chief foible of his character; and yet he ever manifested a strict regard to justice. He expedited the decision of legal processes, increased the number of days on which the courts were to sit for the dispatch of business, and followed the example of his predecessor in his improvement of jurisprudence. The right of succession of children to their mothers was made by him

a part of the Roman law, and he appointed a particular prætor for the guardianship of minors.

The close of the life and reign of this tranquil prince was disturbed by the hostilities of the Marcomanni and other German tribes; and when a peace had been concluded with the Partians, their hostilities, which had become formidable, demanded attention. In the year 166, the two emperors having levied an army, left Rome together, and wintered at Aquileia. Antoninus had prepared for the conflict that was expected, by a variety of religious ceremonies, which he thought might tend to render the deities propitious, whilſt they manifested his own attachment to the forms of religion which superstition had devised and sanctioned. Till the death of Verus, in the year 169, nothing decisive seems to have occurred. Worthless as his character was, Antoninus prostituted upon him divine honours; and in his memoirs, he speaks of him with undue respect, and in a manner that is not very compatible with the reproach which he cast upon him in his address to the senate. In the following year, the emperor, who was now sole possessor of power, returned to Pannonia, and vigorously opposed the Marcomanni, who had advanced as far as Aquileia. During a contest which detained Antoninus in these parts for five years, he had many opportunities for the exercise of fortitude and patience, and for the practice of those lessons which he had studied in his youth. The most celebrated event which occurred in this period, was a victory obtained by the emperor in person over the Quadi, the consequence of a sudden storm of rain, hail, and lightning, which disconcerted the barbarians, and was regarded as miraculous. Antoninus and the Romans ascribed it to an interposition of Jupiter and Mercury, but the Christians attributed it to the effectual prayers of a legion of Christians who served in the army, hence called the *thundering legion*. See a more particular account under that article. Pannonia was at length delivered from the incursions of the barbarians; to whom territories were assigned on the confines of the empire. The subjugation of the Marcomanni was delayed by the revolt of Avidius Cassius, who assumed the purple in Syria; and who obtained support in consequence of a rumour of the emperor's death, which he contrived to circulate. This rebellion was soon quelled by the officers of Cassius, who conspired against him, and killed both himself and his son. Such was the magnanimity of the emperor on this occasion, that, having obtained the papers of Cassius, he committed them to the flames without reading them. After the suppression of this insurrection, Antoninus made a progress through the east, and was accompanied by Faustina, who died in this journey, after a short illness. In her licentious conduct she rivalled the infamous Messalina; and yet, such was the stoical insensibility of her husband, that he paid her divine honours after her death. This conduct on the part of the emperor, either betrays great want of penetration, or offers an inexcusable insult to decorum and good morals. Whilſt the emperor visited Syria, Egypt, and Greece, in the year 176, he was initiated at Athens, in the Eleusinian mysteries, and he conferred various privileges on this seat of philosophy. On his return to Rome, after an absence of eight years, he obtained a triumph on account of his conquest of the Marcomanni, and profusely distributed largesses among the people. After two years, he marched again towards the Danube, where the war with the Marcomanni was renewed; and in this expedition he was accompanied by his son. Before his departure, it is said that, in compliance with the request of the people, who wished him to instruct them in the secrets of philosophy, he gave public lectures for three days; and the report of adulation adds, that he de-

livered similar lectures in some of the capitals of the provinces. In this new war Antoninus was successful, and was for the 10th time honoured with the title of "Imperator." After an absence of two years, he fell ill at Vindobona, now Vienna, in Austria, apparently of a pectus ail disease which prevailed in the army, and died on the 7th day, March 17th, A. D. 180, U. C. 933, at the age of 59 years, and after a reign of somewhat more than 15 years. His death was universally lamented; he was deified by the acclamation of the senate and people; his image was kept in the private houses of the Romans among their deities, and he who had not one was deemed inauspicious; his worship of him continued above 100 years; and Dioclesian gloried in honouring him as one of the principal deities.

Marcus Aurelius, notwithstanding all the good qualities by which he was distinguished, and the mildness and clemency which perhaps on some occasions he carried to a blameable excess, persecuted the Christians. He was undoubtedly prejudiced against them, and in his own book, (xi. 3.), censures very unreasonably what he ought to have approved (as the excellent Dr. Jortin remarks, Discourses concerning the Truth of the Christian Religion, p. 57)—their readiness and resolution to die for their religion. The ground of this censure is particularly examined by Dr. Lardner; and he ascribes it partly to the Christians refusing to join in the common worship of the Heathen deities, and to the freedom of their reflections upon the philosophers; partly to their surpassing even the stoics in patience under all kinds of sufferings; and partly to the emperor's bigotry, both in religion and philosophy, which often misleads the judgment, and induces persons of the best disposition to act contrary to the laws of equity on some occasions. Of the persecutions in this reign, which were numerous and severe, and which have led the ancients to reckon Aurelius among the persecuting emperors, we must seek the cause in the stoical and hard-hearted philosophy which he had embraced; in his attachment, real or dissembled, to the religion of his country, and to the established worship of the gods against which Christianity militated; and perhaps principally to the instructions and investigations of the philosophers, who frequented his court, and who cherished in his mind an enmity against the Christians. Whatever motives influenced the conduct of Aurelius, the Christians were under great discouragements during his reign. In that period were published many apologies, as the second of Justin Martyr, those of Tatian, Athenagoras, Apollinaris of Hierapolis, Melito of Sardis, and Theophilus of Antioch. In this period were also many martyrs; some of great distinction, as Justin, Polycarp, and the martyrs of Lyons, with their aged bishop Pothinus.

Aurelius was a writer; and his "Meditations," written in Greek, have reached our time. The most valued editions are those with Gataker's notes, particularly that of Cambridge, 4to., 1652; of London, 4to., 1697; and of Utrecht, folio, 1698. In order to form a true judgment of these meditations, with respect to their meaning and spirit, they should be read, not as detached moral maxims or reflections, but as connected with, and founded upon, the principles of stoicism. The leading feature in the character of Aurelius was goodness of heart: but it was not accompanied with a comprehensive understanding and sound judgment. "His philosophy was not free from pedantry and ostentation. We want in him the manly sense of Trajan, and the simple virtue of Antoninus Pius; yet he will ever stand high among the friends and benefactors of mankind; and will afford a memorable example of philosophy strictly maintained upon a throne." Arc. Us. Hist. vol. xiii. p. 310—341. Crevier's Hist. Emp. vol. viii. Gibbon's Hist. Brucker's Phil.

Phil. by Eufield, vol. ii. p. 134, &c. Lardner's Works, vol. vii. p. 395—459.

ANTONIO, NICHOLAS, was born at Seville in Spain, in 1617; and having studied law in the university of Salamanca, became agent-general for the king of Spain, at Rome. He is known as the author of a celebrated work in Spanish literature, intitled "A Catalogue of Spanish Authors," to the compilation of which he devoted several years in the royal monastery of Benedictines at Salamanca; and for the completion of which, as well as the gratification of his taste for letters, he purchased 30,000 volumes. The work was completed in four volumes folio, and printed at Rome in 1696. It is copious, correct, and methodical; and is now scarce. He also wrote in Latin a treatise "On Exile," which was published at Antwerp in 1659. Antonio died in the year 1684. Gen. Biog.

ANTONIO, *Port*, in *Geography*, a bay or harbour on the north-east coast of the island of Jamaica, two leagues west-north-west from north-east point.

ANTONIO *Island*. See ST. ANTHONY'S *island*.

ANTONIO, *St. Cape*, lies in a small deep bay, about two leagues north-west from Cape St. Martin's, on the coast of Valencia, in the Mediterranean, belonging to Spain.

ANTONIO, *St. Port*, lies in the island of Lemnos, in the Archipelago, between two hills, appearing at sea like two islands; 12 leagues north-west from Mitylene, or Lesbos.

ANTONIO *Viana*, is a shoal due west of Cape Negro, on the coast of Africa, 80 or 90 leagues from the shore, which is very dangerous, and should be carefully avoided.

ANTONIO, *St. Cape*, is the extreme western point of the island of Cuba, in the West Indies. N. lat. 21° 45'. W. long. 84° 10'.

ANTONIO, *St. Fort*, lies on the coast of Brazil, within the north point of the river Paraba. S. lat. 21° 25': called Point Lucena, and the rendezvous of the Brazil ships for Europe.

ANTONIO DE SUCHITEPEC, *St.*, a town in Mexico, or New Spain, on the coast of the Pacific Ocean. N. lat. 15°. W. long. 93° 5'.

ANTONIO, *St.*, the capital of the province of Apachiera, in New Mexico.

ANTONIO, a town in the province of Navarre, in North America, on a river which runs south-west into the gulf of California.

ANTONIO DE CABO, *St.* a town of Brazil, in South America, near Cape St. Augustine, subject to the Portuguese, where they manufacture a considerable quantity of sugar. S. lat. 8° 34'. W. long. 35° 22'.

ANTONIO, *St.* a town of New Mexico, on the west side of Rio Bravo river, below St. Gregoria. It is also the name of a town on the river Hondo, which falls into the gulf of Mexico, north-east of Rio de Brava.

ANTONIoTTO, GIORGIO, in *Musical Biography*. See GIORGIO.

ANTONIUS, MARCUS, the *Orator*, in *Biography*, was the greatest ornament of the Antonian family. Having obtained the quaestorship of the province of Asia, he had proceeded to Brundisium, when he was informed that he was accused of incest; and that the cause lay before Cassius the praetor, who was a very severe judge. Declining to avail himself of the privilege belonging to those who were absent in the service of the commonwealth, against whom no accusation could be preferred, he hastened back to Rome, and submitted to a trial, in which he was honourably acquitted. Whilst he was praetor, Sicily fell to his lot, and he cleared the seas of the pirates which infested those coasts. He was

consul in the year of Rome 653, before Christ 101, and was very active in suppressing the tumults excited by the tribune Sextus Titus. His conduct, whilst he was governor of Cilicia, obtained for him the honour of a triumph. In order to improve his talents for eloquence, he put himself under the instruction of the principal teachers of rhetoric, both at Athens and Rome. On his return to Rome, he performed the office of censor, and gained a cause against Duronius, who had from revenge preferred an accusation of bribery against him. He was highly admired and esteemed on account of both his talents and conduct; but unfortunately fell a sacrifice in the tumults occasioned at Rome by the factions of Marius and Cinna. The soldiers who were dispatched to discover his retirement and to kill him, were so overpowered by his address that they were unable to execute their commission; and the commanding officer, observing that they hesitated, and enraged that his orders were not complied with, became himself the assassin. His head was afterwards exposed before the rostrum, which he had adorned with his triumphal spoils. This happened in the year of Rome 667, before Christ 87. Marcus Antonius was one of the greatest orators of Rome; and in the judgment of Cicero, it was owing to him and to Crassus, that Italy was the rival of Greece in the art of eloquence. He makes him one of the principal interlocutors in his "Dialogue on Oratory;" and in his "Treatise on famous Orators," describes at length his character as a speaker. His distinguishing qualities were force, earnestness, acuteness, variety, readiness, and copiousness, and he excelled as much in action as in language. His memory was singularly retentive; and though he began to speak without any seeming preparation, he was always so much master of his subject, that the judges seemed not sufficiently prepared to answer him. In his defence of Marcus Aquilius and others, he moved the judges, by the tears he shed, and by exhibiting the scars on the breast of his client, to such a degree, that he gained his cause. Although a tract of his on oratory had got abroad surreptitiously, he never suffered any of his pleadings to be published; alleging that whenever it would have been better that any thing had not been said, it might not be proved against him. Cicero, de Oratore, lib. ii. c. 47. &c. Apud Oper. tom. i. p. 254, ed. Olivet.—De Claris Oratoribus, c. 30, 31, &c. Oper. tom. i. p. 416, &c. Pro Cluentio, c. 50. Oper. tom. v. p. 88. Valer. Max. lib. vii. c. 3. Gen. Dict.

ANTONIUS, MUSA, physician to the emperor Augustus. Having had the good fortune to restore the emperor to health, from a tedious and dangerous complaint, which his other physicians had attempted in vain, he was loaded with riches, and was allowed the liberty of wearing a gold ring, a privilege only granted to personages of the first rank. This privilege was afterwards granted to other physicians at Rome, in compliment to Antonius.—The medicines he used in the cure of Augustus are said to have been principally cooling herbs, to which he added the use of the cold bath, at that time but little known. He was skilful, Haller says, in the knowledge of medicine, and many of his compositions continued to be used to a very late period. Bib. Med. Pract.

ANTONNE, in *Geography*, a town of France, in the department of the Dordogne, and chief place of a canton, in the district of Perigueux, on the Ille; five miles east of Perigueux.

ANTONOMASIA, compounded of *anti*, for, and *νομα*, name, a figure in *Rhetoric*, whereby a noun appellative is used instead of a proper name, or *vice versa*. Thus we say, the Philosopher, instead of Aristotle; the Orator, for Cicero; the Apostle, for St. Paul; the Prophet,

for Moses, &c.—Thus also we call a voluptuous person, a Sardanapalus, &c. And thus the French say, Henry the Great, meaning Henry IV. of France.

ANTONOW, in *Geography*, a town of Poland, in the palatinate of Minsk, 16 miles south-south-east of Mozyr.

ANTONY, a town of France, two leagues S. of Paris.

ANTONY, MARK, MARCUS ANTONIUS, the *triumvir*, in *Biography and History*, was grandson of the celebrated orator of that name, and son of Antonius, surnamed *Cretenfus*. His mother's name was Julia, of the Cæsarian family, a lady of distinguished merit. He was born in the year before Christ 86, and educated under his mother's direction. But, following the example of his father, he launched out at an early age into the excess of riot and debauchery. His comely person, lively wit, and insinuating address, recommended him to Curio, who encouraged and supported his licentiousness, and involved himself on his account in a debt of 50,000 pounds. On this occasion Cicero was requested to appease the anger of Curio's father; and having prevailed with him to pay his son's debts, he advised him to enjoin on his son the surrender of all intercourse with Antony. This laid the foundation of an early aversion in Antony to Cicero, which was increased by his forming intimate connection with the enemies of Rome. He afterwards attached himself to the profligate Clodius; but conceiving a dislike of him, and dreading the termination of the measures he was pursuing, he went to Greece with a view of improving himself in eloquence and the military art. Here he was invited to serve under the proconsul Gabinius, and obtained the command of the cavalry in his expedition into Syria, where he signalized himself by his valour in a complete victory over the Jews, and in his attempts to restore Ptolemy to the throne of Egypt. When Pelusium was taken, Ptolemy ordered the inhabitants to be put to death; but Antony interposed, and by his influence saved their lives. He afterwards performed several glorious actions, by which he gained the reputation of a great general. Upon the breaking out of the civil war, he joined Cæsar's party, and was created augur and tribune of the people; but becoming obnoxious to the senators, he was driven out of Rome, and sought an asylum in the camp of Cæsar, in Gaul. Having complained, that the tribunes of the people were not permitted to speak freely, and that those who appeared in favour of equitable measures were in danger of losing their lives, Cæsar marched immediately into Italy; and on this account Antony as been considered as the promoter of the civil war among the Romans. When Cæsar had made himself master of Rome, he assigned to Antony the government of Italy and the supreme command of the army, whose attachment he engaged, whilst he incurred the charge of oppressing the people. Such was the reputation he acquired by the effectual assistance which he gave to Cæsar, that he was appointed to the command of the left wing in the battle of Pharsalia, whilst Cæsar himself led the right. When Cæsar, after the victory over Pompey, was made dictator, Antony was appointed general of the horse, which office he retained for a whole year, though the usual period of it was only six months. In the exercise of this office he was tyrannical and intolerant; and his general conduct was so dissolute and licentious, that Cæsar treated him with coldness, and did not admit him to be his colleague in the consulship at this time; as he died two years after, in the year before Christ 44, when he himself was consul the fifth time. His restoration to favour was the recompence of the most profligate adulation and servility, and his conduct in office was so base as to accelerate the fall of his patron. At the festival of the Lupercalia, he thrice tempted Cæsar with the offer of a regal diadem, which was as

often refused by Cæsar, to the great satisfaction of the multitude. This attempt at royalty was soon succeeded by the conspiracy which deprived Cæsar of his life. Antony escaped by the interposition of Brutus; and afterwards contrived, by his art and eloquence, to procure a confirmation of Cæsar's acts, and to oblige the conspirators to fly from Rome. The government of Antony, after Cæsar's death, was for some time absolute; and he seemed to aspire to the sovereign power which Cæsar had possessed. His contemptuous treatment of Octavianus, the heir of Cæsar, however, threw him into the arms of the senate, and defeated his own ambitious projects. Having failed in his various attempts for regaining him, Antony levied forces and retired to Cisalpine Gaul, of which he had been appointed governor, and laid siege to Mutina, now Modena, which was occupied by Decimus Brutus. For this conduct he was declared a public enemy; and the two consuls, Hirtius and Pansa, accompanied by Octavianus, were sent against him. In the battle which ensued, the two consuls lost their lives, but Antony was defeated, and the whole republican army was at the disposal of Octavianus. Antony was compelled to leave Italy, and to march his troops over the Alps, which he conducted with a fortitude that did him honour. Having arrived in Gaul, he attached the soldiers of Lepidus to his interest; and they induced Lepidus to join him. Strengthened also by the troops of Plancus and Pollio, he returned to Italy with a large army. At Bologna, Antony and Lepidus had an interview with Octavianus, who abandoned the senate; and here they agreed on the partition of the Roman empire. They also concurred in that detestable proscription, of which the first sanguinary measure was the death of Cicero, against whom Antony had conceived an inveterate hatred on account of the condemnation of Lentulus the second husband of his mother, and the Philippic which he had pronounced against himself. The usurpers proceeded to Rome, and filled the city with rapine and murder; and Antony enjoyed the base satisfaction of fixing the head and right hand of the illustrious Roman orator upon the rostra, which had so often witnessed the triumphs of his eloquence.

After having completed the destruction of their enemies in Rome, Antony and Octavianus marched into Macedonia, against Brutus and Cassius; the latter of whom, after a defeat at Philippi, put an end to his own life; and, in a second battle, Brutus fell in the same manner. It is recorded, as an instance of generosity on the part of Antony, that when Lucilius, who was mistaken by the Thracians for Brutus, surrendered himself in order to give his friend an opportunity of escaping, Antony commended his fidelity, and embraced him as a friend; and also, on viewing the dead body of Brutus, his sensibility was affected, he threw over it his own rich mantle, and ordered it an honourable funeral. At Athens in Greece, whither Antony next proceeded, he endeavoured to ingratiate himself with that city, by expressions of regard, and he frequented its public schools and gymnasia. In Asia, he indulged his taste for splendour and voluptuousness; and, though he shewed some lenity to the friends of Brutus who fell into his hands, he plundered several cities, and bestowed the wealth he thus collected on his parasites and buffoons. In Cilicia he summoned the famous Cleopatra, queen of Egypt, to give an account of her conduct, which had given offence to the triumvirs. The interview was singularly splendid; and the queen advanced with confidence, not doubting that, as in her youth she had enslaved Cæsar and Pompey, she would be able, by her charms and the art which experience had taught her, to captivate the heart of Antony. The intercourse terminated as she expected. The triumvir was completely subdued, took the queen with him to Alexandria, and

and indulged in dissipation and luxury, which made him regardless of every important concern. In the mean while, Fulvia, the widow of Clodius, whom Antony had married before the death of Cæsar, quarrelled with Octavianus, and assembling some legions at Præneste, commenced hostilities. Before Antony could reach Italy, the war had terminated in favour of Octavianus; and the death of Fulvia, who is thought to have concerted this war for the purpose of detaching Antony from Cleopatra, made way for completing a reconciliation with Octavianus, by the marriage of Antony with his sister Octavia, to whom the brother was affectionately attached, and who was a lady of an excellent and amiable character. On this occasion, Antony and Octavianus, the two principal of the triumvirate, agreed on a new partition of the Roman empire; and by virtue of this partition, Codropolis, a town of Illyricum, being fixed as the boundary of their dominions, the whole that lay west of this place was allotted to Octavianus, and the whole that was situated to the east belonged to Antony; so that the former had Dalmatia, the two Gauls, Spain, and Sardinia, and the latter all the eastern provinces as far as the Euphrates. Africa was assigned to Lepidus. It was also agreed that Antony should make war upon the Parthians; and Octavianus reduce Pompey, if he refused to submit to reasonable conditions. Antony, after this business was amicably settled, spent the winter at Athens with Octavia, and dispatched his lieutenant Ventidius into Asia, to check the incursions of the Parthians. The success of Ventidius roused the jealousy of Antony, and he determined to leave Athens and to march into the east. When he arrived, he dismissed his lieutenant, who was besieging Samosata, and sent him to Rome to demand of the senate and people the honours of a triumph. Antony, having offended his soldiers by dismissing Ventidius, and raising the siege without much honour, returned to Octavia at Athens, and soon afterwards sailed to Italy, at the request and for the assistance of Octavianus, in order to overpower by their united counsels and forces their rival, Pompey. Antony came as far as Brundisium; and not finding Octavianus there at the time appointed, he returned to Athens. However, when Octavianus was reduced by Pompey to great danger, Antony assembled a large fleet, and sailed for Italy. But the two ambitious triumvirs, jealous of each other, disagreed; and Octavia, by a conference with her brother, in the presence of Mæcenas and Agrippa, and by earnest entreaties, prevailed with him to meet Antony, and to compromise the differences that subsisted between them. In this office of prudence and affection she succeeded; and after an accommodation, Antony departed once more for Syria. Octavia accompanied him to Coreyra, but from thence returned to Italy. Upon Antony's arrival in Syria, he invited Cleopatra, and bestowed upon her all Phœnicia, Cœlosyria, Cyprus, and a great part of Arabia and Judæa. His profusion offended the Roman people, and they censured his conduct on account of his scandalous connection with Cleopatra. After these extravagant grants, he marched with a large army against the Parthians, which only served to render his retreat the more ignominious. The Romans justly attributed the misfortunes of this fatal expedition to his passion for Cleopatra, and they were also particularly incensed by his conduct towards Artabazes, king of Armenia, whom he seized in a treacherous manner, and led in triumph to Alexandria. Having been induced by the crafty queen to order Octavia not to pursue her journey into Syria, but to return to Rome; he accompanied Cleopatra to Alexandria, and passed the winter with her in every kind of pomp, luxury, and voluptuousness. Octavianus availed himself of the general resentment against Antony, and preferred to the senate and people several articles of accusation

against him. A war between these two triumvirs became inevitable: but Antony, instead of making necessary preparations, appointed the isle of Samos for the place of general rendezvous; and summoned thither players and musicians, and all the ministers of riotous luxury. From Samos he afterwards sailed for Athens, where he pursued the same course of luxury and dissipation: and in order to testify his resentment against Octavianus, he solemnly divorced Octavia, and ordered her to be expelled from his house at Rome. Many of his friends abandoned him. War was declared against the Egyptian queen; and Antony was deprived of his consulate and government; and the reason assigned for it was, that he suffered himself to be ruled by a woman. Each party collected its forces; and the Ambrazian gulf, between the islands of Coreyra and Cephalonia, became the scene of contest. The famous battle of Actium ensued: and this was fought at sea, against the advice of Antony's best officers, and chiefly through the persuasion of Cleopatra, who was proud of her naval force. In the midst of the action, Cleopatra, with her 50 gallees, took to flight, and Antony followed her in a small vessel, and thus overwhelmed his character in perpetual ignominy. After an obstinate resistance on the part of the soldiers, though abandoned by Antony, and at length by their principal officers, they surrendered to Octavianus, and were incorporated in his legions. Antony, thus defeated and disgraced, vented his resentment against Cleopatra; but they were soon reconciled; and he pursued his course to Libya, where he had stationed a considerable body of troops: but on his arrival, he found that they had deserted to Octavianus. Distracted with disappointment and vexation, he returned to Egypt, and lived for some time in gloomy solitude: but Cleopatra by her arts drew him to her palace, and he resumed his former voluptuous life. Hither he was pursued by Octavianus: and though on his approach to Alexandria, Antony made a successful sally against the invader; yet, deserted by the Egyptian fleet, by his own army, and betrayed, as he suspected, even by Cleopatra, he sunk down in despair. His first frantic effort was directed against the queen, who had been the cause of all his misfortunes: but she fled from her palace and escaped: he then desired one of his own servants to dispatch him; but the faithful Eros stabbed himself, and fell down at the feet of his master. Antony, emboldened by this act of heroism, fell on his own sword: but as the wound did not immediately prove mortal, he sought Cleopatra in her place of retirement and safety; and being drawn up to the tower in which she lodged, by ropes, he expired in her arms, in the 56th year of his age, and in the year before Christ 30. He was magnificently interred by Cleopatra; but at Rome his statues were demolished, and his memory was declared infamous.

Antony left seven children by his three wives; two sons by Fulvia; two daughters by Octavia, who by their alliances gave three emperors to Rome; and two sons and a daughter by Cleopatra, whom he had lawfully married after his divorce from Octavia. Of these children Octavia took the most laudable care; and at length the daughter of Cleopatra was married to Juba king of Mauritania.

Antony was neither a great nor a good man: he wanted that vigour of understanding which entitled him to a place in the first class; and his love of pleasure, his want of principle, as well as his meanness and cruelty, exclude him from the second denomination. He has had, however, his partisans and admirers; and, it must be allowed, possessed a generosity of disposition which raised him above his rival, the cold and crafty Octavianus. Plutarch in Anton. apud. oper. tom. i. p. 915—957. ed. Francf. Anc. Un. Hist. vol. xi. and vol. xii. Gen. Dict.

ANTONY, *St. the hermit.* See ANTHONY.

ANTONY of *Lebrisa*, or *Antonius Nabifensis*, a Spanish writer, was born at Lebrisa in Andalusia, in 1444, and contributed to the revival of literature in Spain. He still studied at Salamanca; and acquired farther knowledge in the university of Bologna. Besides classics and polite literature, he was acquainted with the mathematics, law, medicine, and theology, and might have been justly classed among the most learned men of his age. After his return to Spain, he taught grammar at Salamanca for 28 years; and at Alcalá, under the patronage of cardinal Ximenes, he taught till his death. Here he employed himself in publishing a polyglot edition of the bible. As historiographer to the king, he published, in 1509, two decades of the history of Ferdinand and Isabella, which are to be found in the work intitled "Hispania Illustrata." His dictionary of the Latin, Greek, and Hebrew languages, was printed at Grenada in 1545. He also wrote notes upon several Latin classics, and upon Aristotle's Rhetoric; a Treatise on Weights and Measures; a cosmography; a law dictionary; a medical dictionary; Commentaries on the Scriptures, &c. He died in 1522. Cave, Hist. Lit. Appendix, vol. ii. p. 209. Nouv. Dict. Histor.

ANTONY of *Messina*. See ANTONELLO.

ANTONY of *Padua*, a monk of the order of St. Francis, was born at Lisbon, in 1195. A desire of obtaining the crown of martyrdom induced him to sail for Africa; but being driven on the coast of Italy, he devoted himself in that country to the study of theology, and became an eminent preacher. The fraternity of Flagellants is said to have owed its origin to his sermons. Pope Gregory XI. used to call him "the Ark of the Covenant, and the Depository of sacred Learning." He was successively a teacher at Montpellier, Toulouse, and Padua; where he died, in 1231, at the age of 36 years. His works, consisting of sermons, commentaries, and a moral concordance to the bible, were published at the Hague, in 1641. Nouv. Dict. Histor.

ANTONY of *Pratovecchio*, in Tuscany, was educated at Florence, and distinguished himself in the 15th century, by his attempt to form a new code of feudal law. The emperor Sigismund created him count and counsellor of the empire, and charged him with the execution of this undertaking. The result was a treatise, entitled "A Course of Feudal Law," and published in the year 1428. Although the emperor, under the influence of the lawyers, who envied the reputation of Antony, refused his imperial approbation of this new code, it was afterwards granted by Frederic III. Antony also wrote "Commentaries on the Decree of Gratian," and a "General Repertory" or Lexicon of Jurisprudence. He died at Bologna about the year 1464. Gen. Biog.

ANTOSIANDRIANS, in *Ecclesiastical History*, a sect of rigid Lutherans, who oppose the doctrine of Osiander, relating to justification. These are otherwise denominated *Osiandro-mastiges*.

The Antosiandrians deny that man is made just, with that justice wherewith God himself is just; that is, they assert, that he is not made essentially, but only imputatively, just; or, that he is not really made just, but only pronounced so.

ANTRAIGUE, in *Geography*, a town of France, in the department of the Ardeche, and chief place of a canton, in the district of Privas, ten miles west of Privas. The place contains 1521 and the canton 7401 inhabitants: the territory includes 187½ kilometres and 8 communes.

ANTRAIN, a town of France, in the department of the Ille and Villaine, and chief place of a canton, in the district of Fougères, seven leagues north-north-east of Rennes, and

four south east of Dol. The place contains 1375 and the canton 13,252 inhabitants: the territory includes 220 kilometres and 10 communes.

ANTRIM, a county of Ireland, in the province of Ulster, lying at the north-eastern extremity of the island, and being one of the most respectable in point of culture and population. It is washed on its northern and eastern sides by the north channel, which divides Ireland from Scotland. On the west, Lough Neagh and the river Bann form a natural boundary, except for about five or six miles near the sea. On the south-east, it has a large estuary, called Carrickfergus Bay, or the Lough of Belfast; and on the south lies the county of Down, from which it is partly separated by the river Lagan. Its greatest length from north to south is 44 miles (56 English), and its greatest breadth 24 (30½ English), containing 387,200 Irish plantation acres (622,059 English), and being about 605 (or 972 English) square miles. The number of houses, according to an official return made to the House of Commons, in 1791, is 30,314, from which we may estimate the population at about 170,000. The number of parishes is 74, of which 42 only have churches, all of them, except one, in the diocese of Down and Connor. This county returns five members to the Imperial parliament; namely, two knights of the shire, and one each for the towns of Carrickfergus, Belfast, and Lisburn. The face of the country, especially in the northern and eastern parts of it, is very mountainous, and there are several extensive bogs, some of which have been improved, and others are very improveable. There is also a tract of very rough and high hills on the west of Belfast; of which Mr. Arthur Young observes, that to their summits they consist of exceedingly good loam, and such as might be improved into good meadow. Of the mountains, Devis near Belfast, Slenish in the middle, and Knocklayd in the northern part of the county, are the most considerable. The richer and more fertile parts of it are well cultivated, producing fine crops, especially the southern extremity, which is in a high state of beauty and improvement. The linen business extends throughout the whole county, in a manner which seems peculiarly favourable to the morals and happiness of the people. The farms are generally very small, and chiefly in the hands of weavers, who make the web at their own houses, and on their own account, and then carry it to the nearest market-town, where it is purchased by the bleacher. They grow their own flax, and generally have a patch of oats, some potatoes, and a cow, which supply them with their usual diet. The rivers of this county are generally small, but very numerous: the principal ones are, the Lower Bann, a broad and rapid stream, by which all the waters of Lough Neagh are discharged into the sea; and the Lagan, which passes by Lisburn, and a little below Belfast flows into Belfast Lough. The northern coast of this county is remarkable for its basaltic pillars, an account of which will be found in the article relating to the Giants' Causeway, where they are most conspicuous. The stupendous promontories of Bengore and Fairhead (the *Robogdium* of Ptolemy), in particular, are in a great measure composed of these pillars. The eastern coast has many little bays, on which are villages inhabited by fishermen. At the south east is a little peninsula, called Island Magee, which is improperly represented in most maps as an island, though connected with the main land by an isthmus of more than a mile broad. The inhabitants of this county had from an early period a considerable intercourse with the adjoining parts of Scotland; and some Scotch families settled in it, previously to the encouragement given by James I. The countess of Antrim, of the family of M'Donnell, descended from one of these, has in her possession, according to Mr. Young, 173,000 acres in this

this county, which are let on very long leases for 8000l. per annum, and relet for 64,000l.

At present the greater part of the inhabitants are of Scotch extraction, and most of them continue attached to the Presbyterian form of worship. The assizes, elections, &c. for the county are held at Carrickfergus, but the quarter sessions at Antrim. Dr. Beaufort's Memoir; Mr. Young's Travels in Ireland; Dr. Hamilton's Letters respecting the Coast of Antrim.

ANTRIM, a town in the county of the same name in Ireland, pleasantly situate on a small stream, called the Sixmile-Water, which a little below the town empties itself into the north-eastern extremity of Lough Neagh. This was a populous, thriving place, but was injured some years ago by the desire of the proprietor to increase his influence in the election of members of parliament. It still partakes the benefits of the linen manufacture; and the fine yard-wides are chiefly bleached and finished in the neighbourhood of this town, Lisburn, and Belfast. Amongst the dissenting ministers of this town were Mr. Abernethy and Dr. Duchal, so well known by their writings, both of whom afterwards removed to Dublin; and from it that presbytery took its name, which first advocated the cause of religious toleration in the north of Ireland. At a place called Steeple, near Antrim, is one of those round towers peculiar to Ireland. See ROUND TOWERS. In the streets of this town, a smart engagement took place on the 7th of June, 1798, between 6000 insurgents, and some detachments of the regular troops and yeomanry, in which the former were defeated with considerable loss. Lord O'Neil, a nobleman much respected, received a wound from a pike, of which he soon after died. Distance from Dublin 8½ miles. W. long. 6° 6' N. lat. 45° 42'.

ANTRIM, or ANTERIM, a township of Hillsborough county, New Hampshire, in America, having 528 inhabitants, incorporated in 1777, 7½ miles west from Portsmouth, and as many north-west from Bolton.

ANTRODOCIO, a small town of Italy, in the kingdom of Naples, situate in Abruzzo Ulterior, on the small river Velino, between Aquila and Rieti.

ANTRON, in *Ancient Geography*, a town of Greece, in that part of Thessaly, called Phthiotis, situate at the entrance of the Pelasgic gulf. It was famous for furnishing apes of a large size. This town existed in the time of the Romans; and in the war against Perseus, the consul Licinius, in the year before Christ 171, obtained it by treaty.

ANTROS, a small island of France, at the mouth of the Garonne, where was erected the tower of Cordouan, which served as a light-house to vessels that entered this river, in passing to Bourdeaux.

ANTRUM *Genæ*, in *Anatomy*, a large cavity in the bone of the upper jaw, which communicates with the nostrils. It was thus called by Casserius, but by Dr. Highmore *antrum maxillæ superioris*. It is also frequently called *antrum Highmorianum*. For a further account of this cavity, see the description of the superior maxillary-bone.

ANTRUM *Pylori*, is a term which has been employed to express the concavity in the great curvature of the stomach, as it approaches the pylorus.

ANTRUM *Maxillare*, *Diseases of the*, in *Surgery*. The cavity of the cheek bone is liable to inflammation and abscess. The bone itself may become carious, and be followed with very distressing consequences. Insects will sometimes be generated within this sinus, and produce the most excruciating pain for years together.

We have already had occasion to notice the treatment of abscesses in the maxillary sinus, to which we therefore refer our readers. See ABSCESS, INFLAMMATION, CARIES, and DISEASES OF THE TEETH.

ANTRUM, in *Geography*, a mountain of Switzerland, in the Valais, which is a part of the Alps, that may be passed from the Valais into the Milanese.

ANTRUSTIO, in *Antiquity*, q. d. *qui in truste dominica est*, a name given in the Salic law to the king's vassal, for whose death that law imposed a composition of 600 sous. Montefq. Sp. of Laws, vol. ii. p. 406.

ANTULLY, in *Geography*, a town of France, in the department of the Saône and Loire, and chief place of a canton, in the district of Autun, five miles south-east of Autun.

ANTWERP, or ANTORFF, in French *Anvers*, and in Spanish *Amberes*, the capital of a marquisate in Brabant, called the Marquisate of Antwerp, and also the Marquisate of the Holy Roman Empire; situate in a large plain on the eastern side of the Scheld, which is sufficiently deep and wide for admitting vessels of great burthen to the quay; and vessels may be brought by means of canals cut through the town to unload at the doors of the warehouses. It ranks the third city in Brabant; it is large and well built, and contains 22 squares, and more than 200 streets, which are straight and broad; and one of them, called the Merc, is so wide, that six carriages may pass it abreast. At the head of this street is a crucifix of brass 33 feet high. The cathedral church is a beautiful and elegant building; but in the course of the last war it was robbed of its richest ornaments, or the pictures of Rubens, which are now placed in the Louvre gallery at Paris. The Stadt-house and the Exchange are also magnificent structures. The latter built in 1531, is the first building of that kind in Europe, and on the model of this were built the exchanges of London and Amsterdam. Its pillars are of blue marble, and carved, but every one of them in a different style. Antwerp, towards the end of the 15th century, when the commerce of Bruges declined, and the English fixed their staple in it, became one of the most celebrated trading towns that ever existed. There were two circumstances in particular, that contributed to the great increase of its commerce and riches; one was the grant of free fairs for commerce, two of which lasted six weeks, and hither merchants resorted from all parts of Christendom, with their merchandize, custom free; and at these fairs great concerns were managed, not only in merchandize, but in bills of exchange with all parts of Europe: the other was, Portugal's bringing over in immense quantities, the rich produce of India, first to Lisbon, and thence to Antwerp, as to a kind of half-way port between the northern and southern parts of Europe. This drew the German and other merchants to settle at Antwerp; and after the archduke Maximilian had, about the year 1499, brought Bruges into subjection, the merchants of that city removed to Antwerp. In 1543, it was enlarged for the third and last time, and encompassed with new walls, built of fine hewn stone, and beautifully adorned. At this time it contained, according to the computation of Guicciardin, 100,000 inhabitants. When the emperor Charles V. wished to introduce the infernal tribunal of the inquisition into this city, about the year 1550, he was awed by the information, that the English merchants would leave the city and country; and this remonstrance proved effectual; for upon inquiry the emperor found, that the English merchant adventurers maintained or employed at least about 20,000 persons in Antwerp alone, besides 30,000 more in other parts of the Netherlands. At this time this city, and Hamburgh, possessed the principal commerce of the northern and middle parts of Europe; but after the Union of the seven United Provinces, in 1579, the commerce of Antwerp began to decline; and this misfortune was accelerated by the persecutions of the duke d'Alva, and the sack of the town by the duke of Parma, in

1585, which forced its inhabitants to seek an asylum in Holland, and particularly at Amsterdam, whither its trade, in consequence of the entire command of the Scheld, was transferred. The loss of their trade led them to direct their attention to painting, jewellery, or banking, which they have profecuted with success and reputation; and they have also had a considerable manufactory of tapeltry and lace. The future trade and prosperity of this city must depend on the restrictions or enlargements to which the navigation of the Scheld shall be subject. This city is the see of a bishop; and besides the cathedral, it has several other fine churches. As to the fortifications of the city, it is encompassed by a wall, planted with rows of trees on each side, and of such breadth as to admit two carriages abreast; and it is also defended by a pentagonal citadel, erected by the duke d'Alva, in 1568, which commands the town and the neighbouring country. The magistracy of this city is elected out of the seven patrician families, and consists of two burgo-masters and 18 echevins, besides inferior magistrates. Among its privileges, there is one, by which every person born in it becomes a citizen, though both his father and mother were foreigners.

One of the most remarkable sieges which history records, was that of Antwerp by the duke of Parma in 1585. In later times, after the battle of Ramillies, it surrendered to the duke of Marlborough. In 1746, it was taken by the French, but restored to the house of Austria at the treaty of Aix-la-Chapelle. It was taken by the French in 1792, and evacuated in the beginning of 1794; but in July of the same year it surrendered again to the republican troops. The navigation of the Scheld was declared free in August 1794. This city is 25 miles north of Brussels, and 75 south of Amsterdam. By the new arrangement since the revolution, it is the principal place of a district in the department of the Deux Neuthes; the place contains 61,800, and the canton 66,480 inhabitants; the territory includes 10 kilometres, and five communes. N. lat. 51° 13' 15". E. long. 4° 22' 45".

ANTYX, from ἀντιξ, in *Antiquity*, the outermost round or circumference of a shield.

ANUA, in *Ancient Geography*, a town of Palestine, in the tribe of Zebulon, mentioned by Eusebius and Jerom. This was also the name of a town in the tribe of Ephraim, on the borders of that of Benjamin.

ANVARI, or ANVERI, in *Biography*, one of the most famous of the Persian poets, was born in a village of Khorasan, in the 12th century. He studied as a poor scholar, at the city of Thous, in the college called Mansuriah. As the equipages of sultan Sanjiar chanced to pass by, he inquired into the name and condition of a person who appeared so well dressed and mounted, and being told that he was one of the sultan's poets, he became desirous of excelling in an art that was so much honoured and encouraged, and the next day presented to the sultan a poem in praise of him. The prince approved it, and immediately attached the author to his person. To him belongs the reputation of having been the first who rescued the Persian poetry from impurity and licentiousness; and he acquired such renown, that the surname of the king of Khorasan was conferred upon him. Between him and the poet Raschidi there was carried on a singular kind of contest; as they were in opposite interests, and the latter was shut up in a fortress besieged by Sanjiar, they made war upon each other by means of missile pieces of verse, fastened to the points of arrows. Anvari was much addicted to astrology; and he predicted a storm which was to happen on the day of the conjunction of the seven planets in the year 1185, but the day proved singularly serene. His enemies took this occasion to ridicule him, and the sultan re-

primanded him. Thus mortified and abused, he retired first to Meru, and then to Balk, where he wrote a poem in which he renounced astrology, and all its predictions. He died at Balk about 1200. D'Herbelot *Bibl. Orient.* p. 110.

ANVAT, in *Ancient Geography*, a town in the island of Taprobana, according to Ptolemy.

ANUBINGARA, a town also in the same island.

ANUBIS, in *Mythology*, a deity worshipped among the Egyptians, the Greeks, and the Romans. Ovid mentions this deity, when he says to Isis, (*Amor. lib. ii. eleg. 13.*)

“Per tua filtra precor, per Anubidis ora verenda.”

The head of this deity was that of a dog, and in Egypt especially he was regarded as the faithful companion of Osiris and Isis, and received divine honours. Temples and priests were consecrated to him; and his image was borne in all religious ceremonies. His temples were denominated *Anubidea*. This kind of worship seems to have commenced in Egypt, by consecrating an animal to Anubis, as was the custom with regard to other deities. Soon afterwards they substituted the figure of a dog for that of Anubis himself, and then annexed the head of this animal to a human body, as an emblem of the new deity. Thus he is represented in the ruins of the ancient temples of Egypt, as well as on bronzes and marbles in the collections of antiques. Diodorus Siculus (*lib. i.*) says also, that the god called Anubis is represented with the head of a dog. Virgil, Ovid, Lucian, and the ancient fathers of the church represent him under this form, and Virgil (*Æn. lib. viii.*) and Ovid (*Metamorph. lib. ix. v. 692.*) denominate him the “Barker Anubis.” Cynopolis, the present Minieh, situated in the lower Thebais, was built in honour of Anubis. The priests celebrated his festivals there with great pomp, and consecrated the dog to him, as a living representation of him. This city of dogs, says Strabo, (*lib. xvii. tom. ii. p. 1116.*) is the capital of the Cynopolitan prefecture. These animals are fed there with sacred aliments, and religion has decreed them a worship. The medals of this city bear upon them the figure of a man with a dog's head. But though Cynopolis was the centre of the worship of Anubis, the whole of Egypt adopted it; and to this purpose Juvenal says, *Sat. xv. v. 8.*

“Oppida tota canem venerantur.”

From the universality of the worship of this deity proceeded the respect which the Egyptians manifested for dogs. This strange worship, however, was not confined to the banks of the Nile. The Greeks adopted it not only in the time when the Ptolemies blended the worship of Greece with that of their new subjects, but in the more remote periods of the Greek history. When Rome had adopted the ceremonies of Egypt, the emperor Commodus, in celebrating the Iliac feasts, shaved his head, and carried the god Anubis. His statue was either of massive gold or gilt, as well as the attributes that accompanied it. Even the name of Anubis, derived according to Jablonski (*Panthæon Egypt.*) from *nub, gold*, and *annub, gilt*, signifies gilded.

But what was the signification of this emblematical deity? What is the natural meaning concealed under it? Plutarch, in his *Treatise of Isis and Osiris* (*Oper. tom. ii. p. 368.*), explains this. “The circle which touches and separates the two hemispheres, receiving the name of horizon, is called Anubis. He is represented under the form of a dog, because that animal watches night and day.” St. Clement of Alexandria, well informed concerning the mystic theology of the Egyptians, favours this explication. The two dogs, says he, (*Strom. v. tom. ii. p. 671.*) the two Anubis are the symbols of two hemispheres, which environ the terrestrial globe. He adds in another place; others pretend,

that these animals, the faithful guardians of men, indicate the tropics, which guard the sun on the north and the south, like porters. According to the former of these interpretations, the priests, regarding Anubis as the horizon, gilded his statue, to denote that this circle, receiving the first rays of the sun, appears sparkling with brightness on his rising; and that at his setting he reflects his last rays upon the earth. In their sacred fables they said, that Anubis was the illegitimate son of Osiris. In fact, he only gives to the earth a borrowed light, and never can be esteemed like Horus, as the father of the day, or as the legitimate offspring of Osiris. We may add, that the visible horizon turning with the sun, is his inseparable companion. According to the latter explication, which makes Anubis to represent the tropics, he is also the faithful guardian of Isis and Osiris. In reality, the course of the sun and of the moon is contained between the circles in which the solstices occur, without deviating from them. These limits assigned by the author of nature, might therefore, in hieroglyphic language, be represented by a divinity with the head of a dog, who seemed to oppose their passage on the side of the two poles. The other opinion, however, seems to be more natural, and more analogous to the ideas of the priests. Upon the whole it is not unreasonable to imagine, that Anubis was, at first, only a symbolical image, invented by astronomers, to convey a sensible expression of their discoveries; that afterwards the people, accustomed to see it in their temples, which were the depositaries of science, adored it as a deity; and that the priests favoured their ignorance by connecting it with their religion. The worship of Anubis introduced that of the dog, which became his emblem. Almost all the gods of the Gentiles have originated in this manner. Before the invention of writing, men made use of hieroglyphics or imitative figures to convey their ideas; those hieroglyphics remained in their sanctuaries, and the priests alone preserved the knowledge of them. In the end, these allegorical signs no longer represented the real meaning of things to vulgar understandings, but the exterior forms and figures only, which became the objects of superstition. Savary's Letters, vol. ii. p. 488—495.

Siris or Osiris (says Bruce, Travels into Abyssinia, vol. i. p. 412.) was not the sun, but Sirius or the dog-star, represented under the figure of a dog, because of the warning he gave to Atbara, where the first observations were made at his heliacal rising, or his disengaging himself from the rays of the sun, so as to be visible to the naked eye. He was the "Latrator Anubis," and his first appearance was figuratively compared to the barking of a dog by the warning it gave to prepare for the approaching inundation of the Nile. This, he thinks, was the first hieroglyphic; and Isis, Osiris, and Tot, were subsequent inventions relating to it. In this opinion he is confirmed by considering, that in the city of Axum, once a large city, there is not any other hieroglyphic besides that of the dog-star.

At Rome they had many statues of Anubis, the principal of which are two in the Villa Albani, and one in the Barberini palace. Anubis is frequently represented in pictures, &c. with a dog's head, holding in one hand a branch of palm, and in the other a caduceum, or Mercury's wand.

ANUBUS, in *Entomology*, a species of SPHINX that inhabits Surinam, and is figured by Cramer. The anterior wings are sub-ferruginous, posterior wings black with a row of whitish spots. Fabricius. A black spot in the middle, and a large brown spot with a few streaks near the margin of the anterior wings.

ANUCHTA, in *Ancient Geography*, a town of Asia, in Susiana, according to Ptolemy.

ANVERS, D', HENRY, earl of Danby, in *Biography*, is here introduced, as being founder of the botanic garden at Oxford. In the year 1622, he purchased five acres of land in the vicinity of Oxford, which he took care to stock with numerous foreign as well as indigenous plants; and having erected hot-houses and other necessary buildings, gave it to the university in 1631. He also endowed it with an annual rental, for the support of a gardener and proper assistants; and of a botanical professor, to teach the science to the students of the university. Dr. Sherard augmented the estate of the garden, by a donation of 500l., to enable the curators to enlarge the conservatory; and presented them with a large number of exotic plants, and a handsome collection of books on the subject of botany.

ANVERSA, in *Geography*, a town of Italy in Naples, five miles west of Solmona.

ANUI BOLSCHE, a river of Siberia, which runs into the Kolima, eight leagues east of Niznei Novimskoi.

ANUI Sachoi, a river of Siberia, which runs into the Kolima, nine leagues east of Niznei Novimskoi.

ANVIL, a smith's utensil, serving to place the work on, to be hammered or forged.

The face, or uppermost surface of the anvil must be very flat and smooth, without flaws; and so hard, that a file will not touch it. At one end there is sometimes a pike, bickern, or beak-iron, for the rounding of hollow work. The whole is usually mounted on a firm wooden block.

Forged anvils are better than those of cast work; and the best have the upper part made of steel. Locksmiths have a smaller kind of anvil, called the *flake*, which is moveable, and placed ordinarily on their work bench. Its use is for setting small cold work straight, or to cut or punch on with the cold chisel or cold punch.

ANVIL Island, in *Geography*, an island of the Pacific Ocean, on the north-west coast of America, so called from the shape of the mountain that composes it, and lying in N. lat. 49° 30'. W. long. 237° 3'.

ANVILLE, JEAN BAPTISTE BOURGIGNON D', in *Biography*, geographer to the king of France, and adjunct-geographer to the Academy of Sciences, was born at Paris, July the 11th, 1697. D'Anville possessed a peculiar talent and disposition for geographical researches; and the principal part of his time was devoted to this kind of employment. Accordingly he collected, from the perusal of ancient and modern authors of various descriptions, such as geographers, historians, travellers, and even poets, materials for his main purpose, which was, the construction of charts, and the accurate adjustment of the situation of different places. At the age of 22, he began to publish some of those charts which have given celebrity to his name. To every chart of importance he annexed an account of the authorities upon which he depended, and of the means by which he obtained necessary information; and this he did not with selfish views, or for the purposes of ostentation, but from a consciousness of the assiduity and extent of his inquiries, and in order to enable others to form a competent judgment for themselves. The success of his investigations, and the reputation he acquired, were owing partly to the natural vigour of his mind, and perhaps principally to his indefatigable study; for he is said to have devoted, for 50 years of his life, 15 hours of every day to study. To this reclusive mode of life it was probably owing, that though he was cheerful, modest, and unassuming, his decisions on the peculiar objects of his study were more positive and dogmatical than they would have been if he had accustomed himself more to the society and conversation of literary men. In the year 1773, the Academy of Sciences appointed him adjunct-

junior-geographer; and though he was then near 80 years of age, he presented several memoirs to that learned body. His known talents for geographical research, and the esteem in which he was held by the learned of all Europe, enabled him to collect an immense and valuable mass of charts of various descriptions, which was purchased by the king of France a few years before his death. Having completed the favourite work of his life, he resigned himself to that decay of his faculties, which might naturally be expected at the close of such a life as his; and after an interval of two years, during which his infirmities increased, he died on the 28th of January 1782, in the 85th year of his age. He married in 1730, and two daughters survived him. His principal works are as follow: "Geographie ancienne abrégée," 1768, 3 vols. 12mo.; to which are annexed the author's maps of ancient geography, and a complete system of this science: "Traité des Mesures Itinéraires Anciennes et Modernes," 1769, 8vo.; "Dissertation sur l'étendue de l'ancienne Jérusalem," 1747, 8vo.; "Mémoire sur l'Égypte ancienne et moderne, avec une Description du Golphe Arabe," 1766, 4to.; "États formés en Europe après la chute de l'Empire Romain en Occident," 1771, 4to. "Notice de l'ancienne Gaule, tirée des monumens Romains," 1761, 4to. To these may be added, a work intitled, "Mesure de la Terre sous l'Équateur," occasioned by the discussion of the oblate figure of the earth, and founded on erroneous principles. Hist. de l'Acad. Royal Paris, 1782. Nouv. Dict. Hist.

ANVILLE, or MILLER'S TOWN, in *Geography*, a town of America, in Dauphine county, Pennsylvania, at the head of Tulphoocken Creek; eighteen miles north-east by east from Harrisburgh, and 65 north-west from Philadelphia.

ANUISKAIA, a fortress of Siberia, 50 miles west-north-west of Biisk. N. lat. 52°. E. long. 93°.

ANUROGRAMMUM, in *Ancient Geography*, a town in the island of Taprobana, according to Ptolemy.

ANUS, in *Anatomy*, is the termination of the intestinum rectum. It is kept contracted and closed by a sphincter muscle, and supported in its situation by two muscles named *levatoris ani*.

ANUS is a name which was absurdly applied to a small hole leading from the third to the fourth ventricle of the brain. It is now called *foramen commune posterius*.

ANUS, *Diseases of the*, in *Surgery*. The complaints which most commonly affect this part of the body, are, EXCRESCENCES, ABSCESSSES, FISTULÆ, PILES or HEMORRHOIDS, PROLAPSES, and IMPERFORATION. Each of these disorders is described in its proper place. It will be only necessary at present to treat of the *artificial anus*.

Artificial anus is a preternatural passage through the abdominal ring, occasioned by an adhesion being formed, after gangrenous hernia, between the upper end of the intestine and the abdominal ring, leaving an orifice, through which, instead of through the natural passage of the anus, the excrements are continually voided. This circumstance occurs when, after a gangrenous hernia has been opened, the gangrenous part cut away, and the excrements evacuated, the intestine does not re-unite. Sometimes it occurs without the assistance, nay, even against the wish of the surgeon, when, for example, his attempt to produce the re-union of the intestine does not succeed; sometimes he must endeavour to promote it, namely, when for a considerable time before he was called in, the fæces have been voided solely through the abdominal ring, whilst nothing has passed through the anus; and consequently there is reason to believe that the lower portion of the intestine is already contracted, or even closed, so that the natural passage for the fæces can no more be re-

stored. Sometimes the surgeon must do all in his power to prevent its production, and endeavour to promote the re-union of the intestine. This is particularly necessary when the intestinal canal has been opened, in consequence of gangrene, at no great distance from the stomach; for example, in the jejunum, as in that case the patient would die from inanition. Sometimes it is arbitrary, whether the surgeon shall promote the formation of an artificial anus, or endeavour to make the intestine re-unite; as when the case is a recent one, and a contraction of the lower portion of the intestine is not yet to be apprehended; and when the gangrenous part is situated at the middle or inferior part of the ileum, or even at the beginning of the colon, so that there is no reason to fear that the patient will fall into a marasmus or wasting, in consequence of the formation of an artificial anus.

When the surgeon wishes to promote the formation of an artificial anus, he must first carefully examine which is the superior portion of the intestine; and this he may, in general, know, by observing through which the excrements are discharged. However, as this is not always a certain mark of distinction, he may let the patient swallow a few spoonfuls of oil, after which he may distinguish the superior portion of the intestine with certainty, by observing from whence the oily discharge proceeds. Through this end of the intestine he then passes a thread, which he fastens with adhesive plaster to the external skin, in order that it may not be drawn back into the cavity of the abdomen. This operation, however, is not often necessary, as both ends of the intestine generally adhere within and behind the abdominal ring. The lower portion of the intestine must then be cleared by glysters and purgative injections; and it may be suffered to lie in the wound, in order to avoid the inconveniences which might arise from returning it into the abdominal cavity. At the end of the cure, a plug of sponge should be introduced into the upper orifice, to prevent its contracting, and occasioning an impediment to the discharge of the fæces.

With respect to the formation of an artificial anus, however, the most rational practice is to leave the whole to nature. The surgeon, in general, has done all that he can when he has opened the gangrenous hernia, separated the gangrenous portion, and evacuated the excrements from the intestines; after which nature either re-unites the intestine, or does not re-unite it, in which case an artificial anus is formed, with regard to which the surgeon has nothing to do besides what has already been mentioned. If the surgeon wishes from the very first to form an artificial anus, he should immediately introduce pledgits into the superior extremity of the intestine, whereby the re-union of the two ends will be prevented.

His next business must be to endeavour to obviate the inconveniences arising from the involuntary discharge of the excrements through an unusual passage, and to keep the parts clean. For receiving the matters discharged, he may fasten a receptacle of horn or strong leather to the body by means of a strap, in such a manner that its orifice rests upon the artificial anus. Dr. Richter (*Abhandlung von den Bruechen. neue Aufg. Goettingen, 1785, page 458.*) proposes, for the same purpose, an elastic rupture-bandage, having a piece of sponge fastened under its head, which covers and closes the artificial anus in such a manner as to prevent both the access of the air and the discharge of the fæces; and to supply the place of a sphincter, without either irritating or rubbing the orifice. Whenever the patient wishes to discharge either fæces or wind, he must take it off. M. Loeffler (*Archiv. der praktischen Arzneykunst, &c.*

&c. Leipzig, 1785, b. i. p. 115.), however, has found the use of this bandage to be attended with some inconveniences, which, he thinks, may be avoided by one of a different construction. In the pelotte of the bandage he directed a hole to be made, an inch in diameter, and a varnished leathern receptacle to be adapted to its outer margin.

As the sphincter is wanting, a prolapsus of the intestine may more easily be produced through an artificial anus than through the natural one. Such a prolapsed intestine may sometimes be easily reduced with the hand; sometimes it is reduced spontaneously, merely by the patient lying down upon his back. When this is not the case, the patient should constantly lie on his back, every exertion of the body should be carefully avoided, and gentle pressure permanently applied, by which means the prolapsus will generally be effected in a longer or shorter space of time: force ought never to be applied, as by too hasty and forcible reduction of the intestine the iliac passion might easily be excited. A prolapsus of the lower portion of the intestine is in general far more difficult to be reduced than that of the upper portion; and frequently it cannot be reduced at all, the intestine being contracted, or even entirely closed, behind the prolapsed part. Such herniæ ought never to be suffered to attain too large a size, as in that case it may become impossible to reduce them; they may particularly also prevent the discharge of the excrements, and occasion the death of the patient. By using an elastic bandage, the head of which is provided on its inner side with a sponge, which covers and gently compresses the artificial anus, both the production of such a prolapsus, and its recurrence after having been reduced, may be prevented. Mr. Lange (*Schmuckers vermischte chirurgische Schriften*, &c. b. ii. p. 298.) has shewn that such a hernia may actually become strangulated. He mentions an instance in which the intestine hung down a foot in length, and was so turgid with blood, that it was impossible to reduce it. He was, therefore, obliged to enlarge the artificial anus and abdominal ring by an incision, after which the reduction was easily performed.

It is always a dubious undertaking to attempt to close up an artificial anus of a pretty long standing, and restore the discharge of the excrements by the natural passage. However, when still some part of the excrements is discharged by the natural anus, when clysters can be thrown in by that passage, especially when the artificial anus is of no long standing, and we can be assured that the lower portion of the intestine is still open, we may make the attempt to close the artificial anus. That even where the artificial anus is already of long standing, the cure is still possible, has been proved by a case related by Mr. Dessault. The disease had already continued for the space of four years, the intestine was protruded out of the body, in the form of a cylinder, nine inches in length; and its membranes were so much thickened and hardened, that it appeared more than temerity to attempt the reduction of so considerable a mass. The patient had discharged nothing from the rectum since he had received his wound; every two or three months, however, he had a stool, by which he voided a whitish hard kind of substance. Mr. Dessault applied a simple bandage over the whole tumor from the top to the bottom, in such a manner that the turns of the bandage applied close over each other, leaving only a small opening at the point, for the purpose of discharging the feculent matter, which consisted of half-digested aliments. When by this means the intestine had been restored to its natural size, on the fourth day, he directed it to be raised up into a perpendicular direction: and having introduced his finger into the orifice of

the intestine, whilst he pressed the intestine itself with his other hand, in order to prevent the protrusion of the parts, he extricated the intestine, so that it now contracted into itself, and consequently the hernia was reduced. The orifice of the intestine, through which the excrements were voided, was closed by means of a plug three inches long, and made of a piece of linen rolled up, which was introduced into the orifice, and secured by means of the common inguinal bandage. His intention with this plug was, that it should be withdrawn twice a day, in order to afford a passage to the fæces; but soon after the reduction of the intestine, stasis was several times discharged through the anus; and soon afterwards fluids; which, in the course of the following days, acquired more consistence, so that on the eighth day the plug was no longer used, but the external orifice merely covered and secured with pledgits of lint, compresses, and the cushion of an elastic bandage: by this means the discharge of the excrements through the preternatural orifice was prevented, and its natural passage by the rectum permanently re-established.

But, in general, the attempt to close up an artificial anus is not unattended with difficulty and danger; and it ought never to be risked, unless when the vicinity of the orifice to the stomach gives rise to inanition, or a consumption, or some other material inconvenience. But even in these circumstances, Prof. Richter thinks we ought to use gentler means of alleviating the symptoms, and with a view to the cure. He recommends to keep the orifice of the artificial anus constantly closed, by means of the bandage above mentioned, whereby the chylous fluids will be detained longer in the alimentary canal, and a greater absorption of the nutritive parts take place; to let the patient take only easily digestible, very nourishing, and fluid aliments; and to avoid whatever might tend to accelerate the passage of the aliments through the intestinal canal. By this means he thinks that the above mentioned inconveniences may generally be remedied.

ANUS, in *Botany*, denotes the posterior opening of a monopetalous flower.

ANUS, in *Conchology*, a species of MUREX in the order of *testacea vermes*, having a veiny shell with membranaceous dilated lips, gibbous reticulate-tuberculate aperture, sinuous and erect at the end. It is the *auris hirsuta* of Rumpf. Mus. t. 24; found in the Mediterranean, and the ocean contiguous to the southern part of Asia: the shell is about three inches long, for the most part brown, with white bands, and an almost triangular aperture. Gmelin.

ANWEILLER, in *Geography*, a town situate in the duchy of Deux Ponts, ceded to France by the treaty of Westphalia; eight miles west of Landau. It is the chief place of a canton in the district of Deux Ponts, and department of Mont-Tonnerre: the place contains 1,841, and the canton 12,690, inhabitants; the territory includes 24 communes.

ANXA, in *Ancient Geography*, the name given by the Romans to CALLIPOLIS.

ANXANUM, LANCIANO, or ANCIANO, a considerable town of Italy, which was the capital of the people called Frentani. It was situate in Latium, near the mouth of the Sagrus.

ANXI, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Basilicata, eight miles south-east of Potenza.

ANXUR, in *Ancient Geography*, a town of the Volsci, called by the Greeks and Latins Tarracina, situate at the lower extremity of a small gulf to the east of the Circean promontory. In allusion to its situation on a mountain,

Martial calls it "superbus Auxur." Jupiter $\alpha\zeta\upsilon\rho\sigma$, or the beardless Jupiter, was worshipped in this town; and at the distance of three miles from it were a grove and waters consecrated to the goddesses Feronia, mentioned by Horace, lib. i. sat. 3.

ANYM, a town of Palestine, placed by Joshua in the tribe of Judah; and supposed by Calmet to be the same with Anam or Anem.

ANZABAS, a river of Asia, which, according to Ammanus Marcellinus, was not far from the Tigris.

ANZA, in *Geography*, a river of Italy, which runs into the Tosa near Ugogna, in the principality of Piedmont.

ANZAR, a town of Turkestan, in the vicinity of the northern part of China, where Tamerlane died.

ANZERMA, a town and province of Popayan in South America, situate on the river Coca, and having mines of gold. N. lat. $4^{\circ} 58'$.

ANZIKO. See ANSIKO.

ANZITA, in *Ancient Geography*, a town of Asia, situate on a small river, near the east of the Euphrates.

ANZUQUI, in *Geography*, a town of Japan, in the island of Nihon, upon the eastern side of the gulf of Macao.

ANZUQUAMA, a town of the kingdom of Mino: the territory so called was the paradise of Nabumanga, who went from the sovereignty of Mino to that of Japan.

AOAYS, a town of Spain, in Navarre, on the river Yrate, seven leagues from Pamplona.

AOBRIGA, or AOBRICA, in *Ancient Geography*, a town of Spain, called also Abobrica and Abobriga.

AOCHARA, a town of Africa, in the kingdom of Algiers, between Tenez and Sercelles.

AONIÆ, or AONIANS, in *Ancient Geography*, a people of Bœotia, who jointly with the Hyantes succeeded the Ectenes. At the arrival of Cadmus, according to Pausanias (in Bœot. c. 5.), the Hyantes took up arms to oppose him; but the Aonians submitted, and were afterwards incorporated with the Phœnicians. The Aonians derived their name from Aonia.

AONIA, an ancient name given to Bœotia.

AONIDES, in *Mythology*, the appellation of the Muses, derived from the mountains of Bœotia, where they were particularly honoured, called the Aonian mountains.

AONIS, in *Entomology*, a species of PAPILO (Nymph. Gem.) found in India. The wings are angulated, grey, anterior pair clouded with yellow; a large and small eye-shaped spot above. Cramer, Gmelin, &c.

AORASIA, formed of *a*, *priv.* and $\alpha\rho\alpha\upsilon$. *I see*, denotes invisibility, and was applied by the ancients to the gods; for they apprehended that, in their intercourse with man, they never shewed themselves face to face, but were distinguished, as they retired, by their backs. Thus Neptune, as Homer represents him (Iliad ii.), assumed the form of Calchas in conversing with the two Ajaxes, and was known merely as he withdrew by his majestic gait and step. Venus also, according to Virgil, appeared to Æneas under the form of an huntress; but she discovered herself in her retreat by her radiant head, flowing robe, and dignified movement.

AORISTIA, in the *Sceptic Philosophy*, denotes that state of the mind, where we neither assert nor deny any thing positively, but only speak of things as seeming or appearing to us in such a manner.

The aoristia is one of the great points or terms of scepticism, to which the philosophers of that denomination had continual recourse by way of explication or subterfuge. Their adversaries, the dogmatists, charged them with dogmatizing, and asserting the principles and positions of their sect to be true and certain.

AORISTUS, compounded of α , *privative*, and $\epsilon\rho\iota\zeta\omega$, *to limit*, in the Greek *Grammar*, an indefinite and indeterminate kind of tense, which sometimes expresses the present, sometimes the future, but most frequently the past time.

The Greeks have two aorists; the Latins have none.

Dr. Beattie, in his "Theory of Language," (Part ii. ch. 2.), giving an account of the Greek tenses, omits the second aorist as well as the second future; because he considers them as unnecessary. Some grammarians, he says, are of opinion, that the first aorist signifies time past in general; and the second, indefinite time past; and that the first future denotes a nearer, and the second a more remote futurity. But this he apprehends to be mere conjecture, unsupported by proof; and he inclines rather to the sentiments of those who teach, that the second future and second aorist have no meaning different from the first future and the first aorist; and that they are the present and imperfect of some obsolete theme of the verb; and, when the other theme came into use, were retained for the sake of variety, or, by accident, with a preterite and future signification. In this opinion Lord Monboddo concurs; and he has endeavoured to strengthen it by the testimony of some ancient grammarians. Dr. Browne, in his "Brief Structures on certain Observations of Lord Monboddo respecting the Greek Tenses" (See Transactions of the Royal Irish Academy for 1789, or vol. iii. part ii. p. 11, &c.), has controverted this opinion. Aorists, or indefinites, he observes, are sometimes so called, because they are used for many tenses indifferently, pasts, presents, and futures: sometimes, because they do not mark any precise point of time when an action happened, but only express that it did happen: sometimes, because the verb, when used in these tenses, doth not express whether the action signified be perfected or imperfect. In this last sense he uses the term aorist; and by definite, he means the sense in which the verb expresses the perfection of the action. Having thus defined the meaning which he annexes to the term aorist, he allows that both the aorists are often used, without discrimination, as mere past indefinites; but he maintains, that the first aorist has much more frequently a definite meaning than the second; whereas the second appears in nine instances out of ten to be used indefinitely. Grammarians have observed, that the first aorist is oftener introduced to denote the past perfect time, than their preterperfect tense itself; and hence he argues, that its proper meaning is of a definite nature, and that it is not properly an aorist. Sæntius, he alleges, seems to have been of this opinion, when he calls the second only by the name of aorist. He then proceeds to shew, that such a definite, as he conceives the first aorist to be, was wanting in the Greek language, and is not supplied by the preterperfect; which implies, that the action has been done, and still continues to be done. In the Greek language there must be some other tense for expressing the time of the performance of an action which was perfected at a time past, and has ceased to continue. Dr. Clarke has assigned to this office the tense usually called the preterpluperfect; but in Dr. Browne's opinion, without sufficient authority, as that tense expresses something more. He has recourse, therefore, for this purpose, to the first aorist, the original intention of which was to express the real preterperfect time of philosophical grammar. In the Latin and English languages we have no diversity of tenses, or of single words, to express whether a past action has been done lately, or a long time since. It is only from the tone of the speaker, from the circumstances of the event, or from the context, that we can find out the difference. To supply the defect which these languages labour under, in their *aïve* voice, in not distinguishing, by

different sounds or words, the difference between what was lately perfected, and that which was perfected some time ago; and in the *passive*, in not making this distinction except by the help of auxiliary verbs; the Greeks, according to Dr. Browne, invented their first aorist; and intended by it to indicate the latter, as the preterperfect indicated the former. When Archimedes rushes out of the bath, after having made his celebrated discovery, he exclaims *εὕρηκα*, because he had just at that moment found out and solved the difficulty. But when Nestor (Homer Il. i. v. 260, 261.) speaks of ancient days and ancient heroes with whom he had been conversant, he speaks in the aorist, *αἰρεοσίν ἤπειρ ὑμῖν Ἀνδρασιν ἰμίλιθα*. When Demosthenes supposes the question *τιθῆναι Φιλίππος*; it follows, that if it had been so, and any person had suddenly announced it, he would have replied *τιθῆναι*. But when Chrysis (Il. i. v. 40.) alludes to actions formerly and frequently performed by him, he uses the aorist, "if I have ever crowned your altars or burnt victims," *ἔειψα* and *ἔκην*.

Moreover, the probability that the Greek language had a distinct tense to denote what had lately, or what had long since happened, is augmented by the consideration that they had a tense to express what was soon to come. As they had a "paulo-post future," they might also have had a "paulo ante preterit."

If an action be spoken of which has been often done, the Greeks generally use the first aorist. Thus, in the beginning of the "Cyropedia," where Xenophon reflects how many democracies have been reduced, and how many oligarchies subverted, cases frequent in human affairs, he uses the first aorist: thus also he expresses, in the beginning of the "Memorabilia," his frequent surprize at the errors respecting Socrates; "I have often wondered," in the first aorist. This is also the case in the example of Nestor above mentioned; and in similes, where a comparison is made with something frequently occurring, the first aorist is generally used. In such cases, no particular time at which the action happened is specified, but an action which has often passed is mentioned, without determining any precise time. The second aorist, on the other hand, which generally refers to a particular time, is seldom if ever used to denote a frequentative; although lord Monboddo has assigned this office to this as well as to the first aorist.

To close this article, we may observe, that definite tenses are those which limit both the times of the person and of the action: whereas those tenses which leave the nature of the action wholly undecided, and take no notice whether it be finished or unfinished, are indefinite, or aorists; e. g. "I write," is the aorist of the present tense, "I wrote," is the aorist of the past; and "I shall write," is the aorist of the future.

AORNUS, in *Ancient Geography*, a town of Bactriana, situate to the east of Bactra.

AORNUS was also a place of Epirus, according to Pliny; belonging to the Thresprotia; according to Pausanias; whence issued an exhalation that was fatal to birds which flew over it; and where, it is said, they invoked the dead to predict future events. In this place were a temple and grove consecrated to the Manes.

AORNUS, *Rock of*, a name given to a high mountain of India, situate in the modern district of Bijore, and deriving its name from *α*, priv. and *ορν*, *bird*, expressing its great elevation, which was supposed to be above the flight of a bird. The circuit of it was, according to Arrian, 200 stadia or about 18 or 20 miles; its height about 11 furlongs; and the access to it was only by one narrow path,

cut out of the rock. On the summit was a great extent of arable and pasture land, with springs of water; so that a garrison of 1000 men might subsist, without any extraneous supply. It may be supposed to be somewhat similar to Gwaher, or Rotas Gur, in Bahar. Some have laid, that the Indus passed by Aornus; but this, says Mr. Rennell (Memoir, &c. p. 174.), could not be the case; because the district of Sowhad Proper lies between the Indus and Bijore, according to the Ayeen Acbaree. The siege and capture of this fort were among the most celebrated exploits of Alexander in his Indian expedition. Hercules was said to have attempted it in vain; but Arrian informs us, that this was a groundless report; and that it was a fable, probably invented by some of Alexander's flatterers to magnify his enterprise. Whilst he was preparing for the siege, an old man and his two sons, who had long lived in a cavern of the mountain, offered to shew him a private way of ascending it; and a deputation of light-armed troops, under the command of Ptolemy, was sent to accompany them. As soon as they were safely lodged, they caused a lighted torch to be erected on a pole in their camp, as a signal to Alexander. Alexander, attempting the ordinary passage with a body of troops, was repulsed with great slaughter. But Ptolemy attacking the Indians in the rear, whilst Alexander renewed the assault, a second repulse took place. Upon this Alexander, perceiving that the strength of the Indians depended on the narrowness and declivity of the passage, gave orders to fell a quantity of trees, and to fill the cavities between the plain on which the Indians were encamped, and the highest of his own advanced posts. These measures were at first derided by the Indians; but as soon as they began to feel the effects of the missile weapons of the Macedonians, they proposed terms of surrender. Alexander, suspecting that they merely wanted to gain time, and to make their escape, took the advantage of their descent; and having gained possession of the deserted rock, he then made a signal for the forces to fall upon the flying Indians. The fugitives, hearing their loud shout, were so terrified, that many of them fell from the rocks and precipices, and were dashed to pieces, and the rest were cut off in the roads. *Anc. Un. Hist. vol. vii. p. 398.*

AORSI, a people who, according to Strabo, inhabited the banks of the Tanais. They afterwards extended themselves along the northern parts bordering on the Caspian sea, and carried on a commerce in gold and other articles of merchandize between India and Babylon.

AORTA, formed of *αορτη*, which signifies a *bag*, *chest*, &c. in *Anatomy*, the great artery proceeding from the left ventricle of the heart; from which all the other arteries either mediately or immediately proceed, and by which the whole mass of blood is conveyed to all parts of the body.

The structure, divisions, course and branches of this vessel, are explained under the article ARTERY.

AORTA, *diseases of the*, in *Surgery*. The most common local disorders of this vessel are, ANEURISM, OSSIFICATION, or a thickening and opacity of the semilunar valves of the aorta, interrupting their proper action, and sometimes producing fatal consequences. This artery is likewise subject to INFLAMMATION and ULCERATION, like other parts of the body; but in all these complaints the art of healing affords only palliative means of relief. See POLYPUS of the heart and blood vessels.

AOUS, in *Ancient Geography*, a river of the isle of Cyprus.

Aous is also a name given to the river *Æas*, near Apollonia,

lonia, which rose in the south-east, and discharged itself towards the west into the Ionian sea.

AOUSTA, or **AOST**, in *Geography*, formerly *Augusta prætoria*, a city of Piedmont, situate at the foot of the Alps, on the river Doria. is so called probably from its ancient name, which was given it by Augustus, who sent thither a colony of 3000 of the Prætorian legion. It is the see of a bishop, has several Roman antiquities, such as a triumphal arch, an amphitheatre, &c., and was the birth-place of Anselm, archbishop of Canterbury. It is distant 25 miles north-west from Ivrea, and 50 north-north-west from Turin; N. lat. 45° 38'. E. long. 7° 33'.

AOUSTA, a district of Piedmont, with the title of a duchy, is a valley about 30 miles long, and fertile in pasture and fruit; extending from the pals of St. Martin's, near the frontiers of Yvrèe, to St. Bernard. Its capital is Aoulla, and most of the inhabitants are Goitres.

AOUSTE, a town of France, in the department of the Drome, and chief place of a canton in the district of Crest, situate on the Drome; 15 miles south-east from Valence, and two south-east from Crest.

AOUTA, the name of the paper mulberry-tree at Otaheite, in the South Sea, from which a cloth is manufactured that is worn by the principal inhabitants. The bark of the trees is stripped off, and deposited to soak in running water; when it is sufficiently softened, the fibres of the inner coat are carefully separated from the rest of the bark; they are then placed in lengths of about 11 or 12 yards, one by the side of another, till they are about a foot broad; and two or three layers are laid one upon the other. This is done in the evening; and by the next morning the water is drained off, and the several fibres adhere together in one piece. It is afterwards beaten on a smooth piece of wood, with instruments, marked lengthways with small grooves of different degrees of fineness; and by means of this operation becomes as thin as muslin; and after bleaching it in the air in order to whiten it, it is fit for use. If the cloth breaks in the beating, it is easily repaired by pasting on a patch with a gluten that is prepared from the root of the *pea*, which is done so nicely that it cannot be discovered. This cloth is cool and soft, but as liable to be rent as paper. The colours with which it is dyed are principally red and yellow. The red is a beautiful scarlet, and produced by mixing the juices of two vegetables, *viz.* the fruit of the fig called *matle*, and the leaves of the *cordia sebastina* or *etou*. The yellow is made of the bark of the root of the *marinda citrifolia* called *nono*, by scraping and infusing it in water. The inhabitants of the island also dye yellow with the fruit of the *tamanu*. Hawkesworth's Voyages, &c. vol. ii. p. 210, &c.

AOUTOS, in *Geography*, a town of European Turkey, in the province of Romania, 44 miles west-north-west from Burgas.

AOYCA, a town of Spain, in Navarre, four leagues from St. Estevan, and five from Pampeluna.

APACHES, a people of North America, in New Mexico, who occupy an extensive country under the appellations of Apaches de Parillo, to the south; Apaches de Xilla and de Navaio, to the north; and Apaches Vaqueros, to the east. They are brave, and resolute, fond of liberty, and the inveterate enemies of tyranny and oppression. Ever since their revolt from the catholic king towards the close of the 17th century, they have been the allies, but not the subjects of the Spaniards.

APACHIERA, an audience and province of New

Mexico, whose capital is St. Fe, in N. lat. 36° 30'. W. long. 104°.

APACTIS, ($\Delta\pi\alpha\kappa\tau\iota\varsigma$, *abductus*, from $\alpha\pi\alpha\rho\gamma\omega$), in *Botany*, Thunberg, Jap. 11. Schreb. gen. 808. Juss. 432. Clafs. *dodecaedria monogynia*. Generic Character: *calyx*, none; *corolla* four-petalled; *petals* round sh crenate, concave, unequal, two opposite broader; *filam.* filaments from 16 to 20; *fil.* germen superior; *style* one. Essential character: *cor.* four-petalled; *cal.* none. *Apactis japonica*, the only species of this genus, is a tree growing erect, with numerous branches, which are alternate, round, scabrous, dotted, erect. Leaves alternate, petiolate, ovate, acute, serrate, entire at the base, nerved, smooth, paler underneath, an inch long. Petioles half round, furrowed a quarter of an inch in length. Flowers in racemes, at the ends of the branchlets. Racemes usually ovate, as they advance becoming more oblong. Peduncles villose-scabrous.

APÆDUSIA, from α and $\pi\alpha\iota\delta\iota\alpha$, *infrustration*, denotes ignorance or unskilfulness in what relates to learning and the sciences. Hence also persons uninstructed and illiterate are called *apædeutæ*. The term *apædeutæ* was particularly used among the French in the time of Huet; when the men of wit at Paris were divided into two factions, one called by way of reproach *apædeutæ*, and the other *eruditi*.

The *apædeutæ* are represented by Huet as persons who finding themselves either incapable or unwilling to undergo a severe course of study, in order to become truly learned, conspired to decry learning, and turn the knowledge of antiquity into ridicule, thus making a merit of their own incapacity.

The *apædeutæ*, in effect, were the men of pleasure; the *eruditi*, the men of study.

APAGMA, a term used, by some writers, in *Surgery*, for the thrusting of a bone or other part out of its proper place. But it is more properly used for a fracture of a bone at or near the part whereby it is articulated with another.

APAGOGE, from $\alpha\pi\omega$ and $\alpha\gamma\omega$, *I draw*, or *bear*, in the *Athenian Law*, the carrying of a criminal, taken in the fact, to the magistrate. If the accuser was not able to bring him to the magistrate, it was usual to take the magistrate along with him to the house where the criminal lay concealed, or defended himself.

APAGOGE, in *Logic*. See **ABDUCTION**.

APAGOGE, in *Mathematics*, is something used to denote a progress or passage from one proposition to another; when the first, having been once demonstrated, is afterwards employed in the proving of others.

APAGOGICAL demonstration, is such as does not prove the thing directly, but shews the impossibility and absurdity which arises from denying it.

Hence it is also called, *reductio ad impossibile*, or *ad absurdum*.

APALACHES, or **ST. MARK'S RIVER**, in *Geography*, rises in the country of the Seminole Indians, in East Florida, in N. lat. 31° 30', and runs south-west, through the Apalachy country, into the bay of Apalachy, situate N. lat. 30°. W. long. 83° 53', in the gulf of Mexico, about 15 miles below St. Mark's. After a course of about 135 miles, it falls into the bay, near the mouth of Apalachicola river.

APALACHIAN Mountains, sometimes called the *Alleghany Mountains*, pass through the territory of the United States, from the south west to the north-east. According to the best maps, they commence on the north of Georgia, where they give rise to many rivers that run south to the gulf of Mexico,

Mexico, and to the Tennesse, and others that have their course to the north. The Apalachian chain, from which proceed several collateral ridges, as the Iron, or Bald mountains, the White Oak mountains, and others, extends from thence through the western territory of Virginia, together with its collateral ridges, the breadth of the whole being often 70 miles, and advancing through Pennsylvania, passes Hudson's river, and afterwards rises to a greater elevation, and seems to terminate in the country of New Brunswick. Accordingly, this chain may extend about 900 geographical miles, which is a length unrivalled by any European mountains, except the Norwegian Alps. The collateral ridges are singularly distinct; and a naturalist would at once pronounce that the central or highest must be granitic, the next schistose, and the exterior belts calcareous. The granite seems commonly to consist of white felspar, bluish or rather pellucid quartz, and black mica. The schistose band presents copper ore; and in Canada, lead and silver are said to have been discovered. The limestone contains, as usual, many petrifications, particularly the cornu ammonis, a small scallop shell, and several sorts of corals. The height of the chief summits, which appear to be in the province of New Hampshire, has not been accurately ascertained, but does not probably exceed 3000 feet above the sea; and they are often clothed with forests. Mr. Weld conjectures, that the Peaks of Otter, the highest of the Blue Mountains, are little more than 2000 feet high, and at any rate their height is much inferior to that of Snowdon. Morfe's Amer. Geog. p. 292. Pinkerton's Mod. Geog. vol. ii. p. 552.

APALACHICOLA, a river of America, between East and West Florida, rises in the Apalachian Mountains, in the Cherokee country, within 10 miles of Tuguloo, the upper branch of Savannah river, and from its source to the mouth of Flint river, in a course of 300 miles, bears the name of Chata-Uche, or Chatubooche river. Flint river falls into it from the north-east below the lower Creek towns, in N. lat. 31°. From thence it runs near 80 miles, and falls into the bay of Apalacky, or Apalachicola, in the gulf of Mexico, at Cape Blaize. From its source to N. lat. 33° its course is south-west, and thence to its mouth nearly south.

APALACHICOLA is also the name of the mother town, or capital of the Creek or Muscogulge confederacy, called Apalachicola by Bertram; who describes it as sacred to peace, no captives being put to death or blood shed there; and when a general peace is proposed, deputies from all the towns in the confederacy meet here to deliberate. Whereas the great Coweta town, 12 miles higher up the Chata-Uche river, is called the "Bloody Town," where the Micos chiefs and warriors assemble, when a general war is proposed; and here captives and state malefactors are put to death. Apalachicola is situated one mile and a half above the ancient town of that name, which lay on a peninsula, formed by the doubling of the river, but deserted on account of inundations. The town is about three days journey from Tallassee, a town on the Tallapoosie river, a branch of the Mobile river.

APALACHY COUNTRY extends across Flint and Apalaches rivers in East Florida, having the Seminole country on the north-east. Apalacky, or Apalachya, is also a name applied by some writers to a town and harbour in Florida, 90 miles east of Pensacola, and at the same distance west from Del Spiritu Santo river. The tribes of the Apalachian Indians lie around it.

APALATOA, in *Botany*. See CYCLAS.

APALHAO, in *Geography*, a town of Portugal in Alentejo, containing about 1200 inhabitants.

APALIORIA, an island that lies on the eastern coast of the peninsula of India, in S. lat. 9° 8'. E. long. 79° 40'.

APALUS, in *Entomology*, a genus of the COLEOPTERA insects, with filiform antennæ, equal and filiform palpi, maxilla horny and unidentated, and lip membranaceous, truncated and entire. There is one species, the *ap. bimaculatus*, *pyrochroa bimaculata* of Degeer; found early in the spring in the sandy parts of Sweden.

APAM, in *Geography*, a village of Africa, in the kingdom of Acron, on the Gold Coast, inhabited by fishermen, and fortified by the Dutch in 1697. See ACRON.

APAMA, in *Botany*, a genus of the *polyadelphia polyanthra* class and order: the characters of which are, that the calyx is trilid, no corolla, and the filaments distributed in three ranks. Gmelin mentions one species, *viz. A. dubia*, the *alpany* of Rheed, Malab. vi. p. 51. This is a tree in the East Indies, with ash-green bark and white wood. It is an ever-green, and bears fruit twice a year. With its juice and oil are formed an ointment which cures the itch, and deterges old ulcers. La Mark. Encycl. t. i. p. 91.

APAMATUCK, in *Geography*, a river of North America, in Virginia, runs into the Powhatan.

APAMÆA, or APAMIA, in *Ancient Geography*, a town of Syria, situate in a marshy country, at the confluence of the Orontes and Marfyas, which form a kind of lake, that has no communication with the land but by a small isthmus. It is about 60 miles almost south of Antioch, and about 90 from Aleppo, in N. lat. 35° 6'. E. long. 37° 18'. Its former name was Pharnasca, and the Macedonians called it Peila; and as it was almost wholly surrounded by water, it was denominated Chersonesus. According to Strabo, it was founded by Seleucus Nicator; and derived its name from his wife Apamea, the daughter of Artabazus the Persian. It had its own kings till the arrival of Pompey in Syria; and afterwards the whole country became a Roman province. It was there, says Strabo, that the Seleucidæ had established the school and nursery of their cavalry. The soil of the vicinity, abounding in pasturage, fed no less than 30,000 mares, 300 stallions, and 500 elephants. It is now called *Famia*; and its marshes scarcely afford supply for a few buffaloes and sheep. To the veteran soldiers of Alexander, who here reposed after their victories, have succeeded wretched peasants, who live in perpetual dread of the oppressions of the Turks, and the inroads of the Arabs. Some have supposed this city to have been the present *Hama*. Volney's Travels, vol. ii. p. 298.

APAMEA is also a town of Asia Minor, in Bithynia. It was originally called Myrlea, but destroyed by Philip, king of Macedon, the son of Demetrius, and the father of Perseus; and given to his ally Prusias the Bithynian, who rebuilt it, and called it after his wife's name, Apamea. Such is the account of Strabo. But Steph. Byz. says, that it was founded by Myrtilus, general of the Colophonians; and that Nicomedes Epiphanes, son of king Prusias, called it Apamea in honour of his mother. Others say, that it derived its name from Myrlea, an Amazon. The Romans fixed a colony there called *Colonia Apamena*.

APAMEA *Cibotos*, so called, according to Salmastius, from *κιβωτος*, an ark or coffer, because it was the mart or common treasury of those who traded from Italy and Greece to Asia Minor, was the metropolis of Phrygia, till Constantine's division of the empire. It was situated at the confluence of the Marfyas and Mæander. It was built, according to Strabo, by Antiochus Soter, and so called from his mother Apamea, the wife of Seleucus Nicator. He also removed

removed the inhabitants of the ancient Celenæ, the situation of which is confounded by some writers with that of Apamea, to this city. It is now called *Aphion Kara Hisar*, or the black cattle of Opium, which drug is collected in its environs.

APAMEA was also a city on the confines of Media and Parthia, not far from Rages, and surnamed *Raphane*, or probably as it should have been, *Ragare*.

APAMEA, *Mesene*, is a town of Asia, in Mesopotamia, situate to the south-east upon the Tigris, in a district which lay between the canal and the river, whence the epithet Mesene, because it was in the midst of that small territory now called *Dizgel*.

APAMEA, *Koma*, a town situate at the confluence of the Tigris and Euphrates, to the south of the preceding.

APAMEA, *Cebene*, a town of Asia, on the left bank of the Euphrates, opposite to Zeugma; both founded by Seleucus, and connected by a bridge.

APAMIS, a name anciently given, according to Steph. Byz. to Lampascus.

APAMIS is now the name of the Ancient Apamea, on the Meander, called Mindra, a town of Asiatic Turkey, and the see of a Greek bishop; 100 miles west of Eski-hissar.

APAMMARIS, a town of Asia in Syria, on the banks of the Euphrates, south-east of Hierapolis.

APAN, in *Conchology*, a name given by Adanson to the same shell as Linnæus has since called *PINNA RUDIS*; which see.

APANAGE, APENAGE, APPANAGE, APANNAGE, or APENNAGE, in the *French Law*, the fortune of a king's younger son; or a settled portion of land, &c. assigned for the subsistence of the cadets or younger sons of a sovereign prince. *Nicod* and *Menage* derive the word from *panis*, *bread*, which frequently includes all other sorts of provision necessary for subsistence. Some will have the apanages, at the first institution, to have been only pensions, or annual payments, of a certain sum of money.

During the first and second races of kings, the right of primogeniture and apanages were unknown; but the domains were divided pretty equally among all the children.

Great inconveniences arising hence, it was at length found proper to put off the younger-born with counties, duchies, or other districts; on condition of their paying homage and fealty for the same, and of their reverting, in defect of heirs male, to the crown.

This has happened, accordingly, to the first and second branch of the dukes of Burgundy. The duchy of Orleans was the apanage of the second son of France. The apanage was unalienable; collateral branches did not inherit it. The eldest son alone was heir to the whole apanage: but bound to allow the younger an honourable maintenance.

In France, apanages were of two kinds, *royal* and *customary*; the first only granted to males the king's brothers, exclusive of the females. These are not so properly alienations of the king's demesnes, as dismembering of them. *Customary apanages* were those granted to women. the king's sisters. Joseph Meiers has published a body of all the writers on *apanage* and *parage*, in one volume in folio.

APANORMIA, in *Geography*, a town in the island of Santorin, in the Archipelago; it has a spacious port, in the form of a half-moon; but the sea is so deep as to afford no anchorage.

APANTA, or APANTE, a province of Terra Firma, in

South America, between the lake Parima and the river of the Amizans; to the west of the province of Carapa.

APANTHROPY, in *Medicine*, a term sometimes used to denote a love of solitude, or an aversion from the company of mankind; and is reckoned by some a symptom, and by others a species or degree of melancholy; and it is a bad indication in leucophlegmatic cases.

APANTORA, in *Entomology*, a species of *CANCER* that inhabits Chili. The thorax is ovate, sides denticulated, tail triangular. Molin. and Gmelin.—Obs. legs hairy, tail rather long.

APARA, in *Zoology*, a species of armadillo or dasy-pus. See *DASYPUS*.

APARGIA, in *Botany*. See *HEDYPEROIS*.

APARIA, in *Geography*, a province of South America, in Peru, near the river of the Amazons, where it receives the Curavaya.

APARINE, in *Botany*. See *ASPERUGO*, *GALIUM*, *SHERARDIA*, *VALANTIA*, and *UTRICULARIA*.

APARINES. See *AMMANNIA*.

APARITHMESIS, from *απαριθμω*, *I number*, or *enumeration*, in *Rhetoric*, is a figure, whereby that which might be expressed in few words is branched out into several particulars, to enlarge the idea and render it the more affecting; and sometimes it denotes the answer to the protasis or proposition itself. Thus if the protasis be "appellandi tempus non erat," the aparithmesis is "ac tecum anno plus vixi."

APARTISMENUS, in the *Ancient Poetry*, an appellation given to a verse, which comprehended an entire sense or sentence in itself.

This is sometimes also written *apartemenus*, *i. e.* suspended, as not needing any following verse.

APARTMENT, a portion of a large house, wherein a person may lodge separately; having all the conveniences requisite to make a complete habitation.

The word comes from *apartmentum*, of the verb *partiri*, to divide; or, as some imagine, *a parte mansionis*, making part of a dwelling.

A complete apartment must consist of a hall, a chamber, an antechamber, a closet, and a cabinet or wardrobe.

APATE, in *Botany*. See *LACTUCA*.

APATE, in *Entomology*, a genus of coleopterous insects in the Fabrician system (*Ent. Syst.*); the character of which is, feelers filiform; jaws, one tooth in each; lip membranaceous and truncated; and the antennæ perfoliated. This genus includes some of the Linnæan dermeles, as *capucinus* and *domesticus*; *bostrichus* of Geoffroy and Olivier, as *cornutus* & *bimaculatus*; and *ligniperda* of Pallas, as *tere-bans* & *cornuta*.

Gmelin makes a subdivision of the Linnæan *DERMESTES*, in his edition of the *Systema Naturæ*, according to the number of teeth in the jaws, *maxilla bifida*, and *maxilla unidentata*; the latter he calls *apate*, and it includes several of the species described by Fabricius in his genus of the same name.

APATHY, formed of the privative, *a*, and *παθος*, *passion*, denotes an insensibility; or a privation of all passion, all emotion, or perturbation of mind.

The Stoics affected an entire apathy; their wisdom was to enjoy a perfect calmness or tranquillity of mind, incapable of being ruffled, and above the reach of any sense either of pleasure or pain.

Whilst Epicurus taught his followers to seek happiness in a kind of indolent ease or freedom from labour and pain; Zeno imagined his wife man, not only free from all sense of pleasure,

pleasure, but void of all passions and emotions, and capable of being happy in the midst of torture. That he might avoid the torpid indolence of the Epicureans, he had recourse to a moral institution, which bore indeed the lofty front of wisdom, but which was elevated far above the condition and powers of human nature.

In the first ages of the church, the christians adopted the term apathy to express a contempt of all earthly concerns; a state of mortification, such as the gospel prescribes. Clements Alexandrinus, in particular, brought it exceedingly in vogue; thinking, hereby, to draw the philosophers to Christianity, who aspired after such a sublime pitch of virtue.

Quietism is only apathy disguised under the appearance of devotion.

APATI, in *Geography*, a small town of Hungary in the county of Jarmat, situate on the river Carafna or Tibiser, east of the lesser Varadin, and north-west of Samos. Its territory is fertile in grain and pasturage.

APATIT. *Phospholite* of Kirwan. *Calcareus apatites* of Werner.

This mineral is divided by the German mineralogists into two varieties, the crystallized, and earthy.

I. Crystallized apatit *Gemeiner apatit*, Germ. *L'Apatite commune*, Brochant. *Chaux phosphatée*, Haüy. *Fosforite lamellare*, Napione.

The usual colours of this substance are greenish-white, mountain green, olive green, violet blue, rose-red, and clove brown; more rarely pearl grey, greenish grey, sky blue, Prussian blue, or flesh red. In some crystals several of the colours are combined, other specimens are iridescent.

It is generally found crystallized, but occasionally disseminated; the forms of its crystals are the following:

1. A short regular hexahedral prism, (*Chaux phosphatée primitive* of Haüy), Crystallography (*Pl. xxx. fig. 90*), but this is of rare occurrence.

2. The same prism truncated on its prependicular edges (*Ch. phosph. péridodecaèdre* of Haüy), Crystallography (*fig. 91*). Incidence of ϵ on M = 150° . The sides ϵ are often striated longitudinally.

3. The same prism bevelled on its lateral edges (*Ch. phosph. annulaire* of Haüy, Crystallography (*fig. 92*). Incidence of r on M = $112^\circ 12' 28''$, and on P = $157^\circ 47' 32''$.

4. The same prism exhibiting a combination of the truncatures and bevellings of the two preceding varieties (*Ch. phosph. emarginée* of Haüy), Crystallography (*fig. 93*).

5. The same prism bevelled on the edges as N° 3, and having a quadrangular facet on each of the solid angles of the original prism. (*Ch. phosph. unibinaire* of Haüy). Incidence of s on P = $125^\circ 15' 52''$. Crystallography (*fig. 94*).

These crystals, &c. are commonly small, or very small, being rarely of a middling size; they are almost always grouped one upon the other in an irregular manner, being seldom found single. The surfaces are usually smooth, except the lateral faces of the prisms which are sometimes furrowed with strong longitudinal striæ. Their external lustre is shining, and often brilliant. Internally they are shining, with a vitreous lustre.

The cross fracture (or parallel to the base of the prism) is straight lamellar: in the opposite direction it is uneven fine-granular, sometimes imperfectly conchoidal.

Its fragments are indeterminate, with somewhat sharp edges.

It is usually semitransparent, passing, however, on one hand to transparent, and on the other to translucent.

Its hardness is a little inferior to that of fluor spar; it is brittle, easily broken; sp. grav. = 3.218.

When thrown on hot coals, the apatit gives a greenish phosphoric light. It is infusible, without addition, by the flame of the blowpipe, only losing its colour. It dissolves almost totally in nitric acid. It has been erroneously supposed to become electric by mere heat, not acquiring this property without friction.

According to the analysis of Klaproth, its constituent parts are 55 lime and 45 phosphoric acid, with a little manganese.

It is met with in the tin-mines of Ehrenfriedersdorf and Schneeberg in Saxony, and at Kutteneberg and Schlackenwald in Bohemia, accompanied by fluor spar, quartz, brown spar, wolfram, molybdena, lithomarga, steatite, and cupreous and arsenical pyrites.

This mineral was formerly considered as a felsorl by some authors, as a fluor spar by others; it was also not infrequently ranked among the beryls and aquamarines; hence its old German names of aquamarinfluß, chrysolithfluß, basaltamethyst, &c. The analysis of Klaproth however, in 1788, established its chemical nature; and Werner made a particular species of it, to which he appropriated the name apatit from the Greek *απαταις*, to deceive, on account of its resemblance to substances from which it is essentially different. See SPARGELSTEIN.

II. Earthy apatit. *Erdiger apatit*, Germ. *L'Apatite terreuse*, Brochant. *Chaux phosphatée terreuse*, Haüy. *Fosforite compatta*, Napione.

Its colour is yellowish or greyish white. It occurs massive or earthy, amorphous.

Its fracture is earthy, passing into the fine grained uneven. The fragments are indeterminate, blunt-edged, sometimes wedge-shaped.

It is opaque; half hard, sometimes friable; brittle; easily broken; meagre and harsh to the touch: sp. grav. = 2.824.

On exposure to the blowpipe it yields a phosphoric light and fuses into a white glass; it is also phosphorescent when pulverized and thrown on hot coals; it dissolves in nitric acid, and gives out white vapours when treated with the sulphuric acid.

Its constituent parts, according to the analysis of Berstrand, Pelletier, and Donadei, are,

Lime	59
Silex	2
Phosphoric acid	34
Fluoric acid	2.5
Carbonic acid	1.
Muriatic acid	0.5
Oxyd of iron	1.
	100.0

This mineral is found in beds mixed with quartz, in great abundance in Spain, near Truxillo, in the province of Estremadura. It is used by the inhabitants of the country for building stone, who appear to have been long acquainted with its phosphorescent property. It is to Proust however that the public is indebted for the first scientific account of it. (See his Letter to Darcet, Journal de Physique for April 1783.)

Widenmann's Handbuch der Mineralogie, p. 528. Emermerling,

melius, vol. 1. p. 502. Lenz, Versuch, &c. vol. i. p. 426. Brochant, vol. 1. p. 579. Haüy, Traité de Mineralogie, vol. II. p. 134. Kirwan's Min. vol. 1. p. 128.

APATURIA, in *Antiquity*, a solemn feast celebrated by the Athenians in honour of Bacchus.

The word is usually derived from *απατην, fraud*.

It is said to have been instituted in memory of a fraudulent victory obtained by Melanthus, king of Athens, over Xanthus, king of Bœotia, in a single combat, which they agreed upon, to put an end to a debate between them relating to the frontiers of their countries.—Hence Budæus calls it “fellum deceptionis, the feast of deceit.”

Other authors give a different etymology of this feast; they tell us, that the young Athenians were not admitted into the tribes on the third day of the Apaturia, till their fathers had first sworn, that they were their own children; and that till that time, they were supposed in some measure to be without fathers, *απατορις*: whence the feast, they say, took its name.

Xenophon, on the other hand, informs us, that the relations and friends met on this occasion, and joined with the fathers of the young people who were to be received into the tribes; and that from this assembly the feast took its name; that in *απατηρις*, the *α*, far from being a privative, being here a conjunctive, signifies the same thing with *ομα*, together.

This feast lasted four days: the first day, those of the same tribe made merry together; and this they called *δοπις*: the second day, which they called *ακρησις*, they sacrificed to Jupiter and Minerva: the third day, which they called *κρησις*, such of their young men and maids as were of age were admitted into their tribes: the fourth day they called *επιδορις*.

APATURIAN, a denomination given by Strabo to a temple consecrated to Venus. It was built at Corocondoma, a peninsula between the Euxine sea and the Palus Mæotis. The surname *deceitful*, from *απατην*, was given to Venus, because this deity used artifice in the war of the gods against the giants.

APAULIA, in *Antiquity*, the third day of a marriage solemnity.

It was thus called, because the bride, returning to her father's house, did *απαυλιζεσθαι τω νομφω*, lodge apart from the bridegroom. Some will have the apaulia to have been the second day of the marriage, viz. that whereon the chief ceremony was performed; thus called by way of contradiction from the first day, which was called *περαυλια*. On the day called *απαυλια* (whenever that was), the bride presented her bridegroom with a garment called *απαυλινηρια*.

APAUMEE', in *Heraldry*. The French heralds use this term to express a hand open and extended, so that the full palm appears, as is seen by the hand of Ullier, borne by the baronets of England.

APAVORTEN, in *Geography*, a pleasant and fertile country of Asia, in Mawaralnahra, to the east of the Caspian sea. In this country, Arfaces, the restorer of the Parthian empire, built *Dara* or *Daravum*.

APE, in *Zoology*, one of the four sections into which the numerous race comprehended under the genus, *Simia*, is divided; including such as are destitute of a tail. The other three are *baboons*, *monkeys*, and *sapajous*; to which some have added a fifth, called *sagains*. For the Linnæan generic characters and distribution of the genus *Simia*, see *SIMIA*.

It is the distinguishing character of the *apes*, that they have no tails. Besides, their visage is flat; the teeth, hands, fingers, feet, toes, and nails, resemble those of man; and they walk

naturally erect. This division includes the simiæ or apes, properly so called, of the ancients, which are not found in America. Dr. Gmelin, in his edition of the *Systema Naturæ*, refers to this division the following species, viz. 1. *S. Troglodytes*, or CHIMPANZEE, which Dr. Shaw considers as a smaller variety of the JOCKO, in its less shaggy or more naked state. 2. *S. Salyrus*, or ORAN-OTAN, with the varieties, or two distinct species of this animal, as Dr. Shaw denominates them, the PONGO and the JOCKO. 3. *S. Lar*, long armed ape of Pennant, and grand GIBBON of Buffon, with the varieties of the lesser gibbon and silvery gibbon. 4. *S. Sylvanus*, or PYGMY. 5. *S. Inuus*, Barbary ape, or MAGOT of Buffon. See the several articles.

APE, *Sea*, in *Ichthyology*, the long tailed shark, a species of *SQUALUS*.

APE, *Sea*, in *Zoology*, is also a name given to a very singular animal seen by Mr. Steller on the coast of America, and which is thus described. It was five feet long, with a head like a dog's, erect and sharp ears, large eyes, a sort of beard on both lips, round body, thickell near the head and tapering to the tail, which was bifurcated, the upper lobe the longest: its body was covered with thick hair, grey on the back, and red on the belly. Mr. Steller could discover neither feet nor paws. It was full of frolic, and played a thousand tricks, sometimes swimming on one side, sometimes on the other side of the ship, and looking out with seeming astonishment. It would come so near the ship that it might be touched with a pole; but if any person stirred, it would immediately retire. It often raised one third of its body above the water, and stood erect for a considerable time; then suddenly darted under the ship, and appeared in the same attitude on the other side; and it would repeat this 30 times together. It would frequently bring up a sea-plant, not unlike the bottle-gourd, which it would toss about and catch again in its mouth, playing with it numberless fantastic tricks. Nat. Hist. of Quadrupeds, &c. vol. i. p. 573.

APECHEMĀ, *Απηχημα*, in *Surgery*, the same with *CONTRAFISSURE*.

APEDIA, in *Zoology*, *simia apedia*, little baboon, with short tail, thumbs of the hands close to the fingers, oblong nails on the fingers, and rounded nails on the thumbs, and hairy buttocks. This is said by Linnæus to be of the size of a squirrel; but in a description given in the *Amoenitates Academicæ*, it is said to be as large as a cat. Its general colour is yellowish, the hairs being tipped with black; face brown, with a few feathered hairs; head roundish; ears roundish and naked; tail scarce an inch long. No bare spaces on each side. A native of India, and said to be a lively species. Gmelin queries whether this animal be not a variety of the *simia feiurea*.

APEË, in *Geography*, an island, one of the new Hebrides, about 20 leagues in circumference, situate in the South Pacific ocean. S. lat. 16° 45'. E. long. 168° 31'.

A-PEEK. See ANCHOR.

A-PEIBA, in *Botany*. See AUBLETIA.

APELCHE, or APELSCHERUEL, in *Geography*, a town of the United Netherlands, in the country of Friesland, 12 leagues south of Lewarden.

APELINA, in *Conchology*, a species of *TELLINA*, figured by Chemnitz. It is oval, pellucid, colours changeable, with a white rib in each valve that extends from the hinge to the exterior margin. Gmelin. A variety (*β*) *tellina papyracea alba spengleri* is described by Schroet; this papyraceous white kind, is found with the other in Nicobar.

APELLA,

APELLA, among *Physicians*, a name given to those whose prepuce is either wanting or shrunk, so that it can no longer cover the glans. Some have supposed that Horace uses the word in this sense, when he says, "Credat Judæus Apella, non ego," but Salmaſius and others maintain, that Apella was the proper name of a Jew, and not an adjective, ſignifying "circumciſed."

APELLA, **SIMIA**, in *Zoology*, a ſpecies of ſimia or monkey in the claſs of ſapajous, ſai a gorge blanche of Buffon, and weeper monkey of Pennant; is the long-tailed beardleſs monkey, with prehenſile tail, brown body, black feet, and without calloſities. It is of the ſize of a very ſmall cat; face round, ſwarthy, and fleſh-coloured; general colour of the animal ferruginous brown, deepeſt on the back and outſides of the limbs; tail blackiſh, or in Schreber's figure, annulated with black and whitſh, and well covered with hair; hands and feet duſky; nails flat and round. Shaw. It inhabits Surinam and Braſil, appears as if always weeping, and of a melancholy diſpoſition, but prone to imitation. Pennant ſuggeſts that this was one of the ſpecies of monies which Dampier ſaw in the bay of All Saints, and which were ugly and ſmelled ſtrongly of muſk, kept in large companies, and made a great chattering, eſpecially in ſtormy weather, and reſiding in a ſpecies of tree, bearing a podded fruit, on which they feed.

APELLES, in *Biography*, the moſt famous painter of Antiquity, was born in the iſland of Cos, and flouriſhed in the time of Alexander the Great, in the fourth century. Having been inſtructed in his art by Pamphilus of Amphipolis, he diſtinguiſhed himſelf by his aſſiduity; and from this circumſtance aroſe the proverb; "No day without a line." It was his wiſh, in the exerciſe of his art, to approve himſelf even to the vulgar; accordingly when a ſhoemaker pointed out a defect in a ſhoe which he had painted, he corrected it; but when the ſame artiſan was proceeding to criticiſe the leg of his picture, he came forth from his hiding place, and reproved him in thoſe words, which are become proverbial, "ne futor ultra crepidam." Such was his idea of excellence, that he uſed to write under his pictures, in the imperfect tenſe, "Apelles εποίησεν, faciebat, and not περιποίησεν, fecit." Nevertheless he cenſured Protogenes for not knowing when "to take his hand from his work," an expreſſion which is become proverbial. The characteristic excellence of Apelles in all his performances was "grace," and in this he claimed the pre-eminence. His colouring was chaſte and ſimple; and, according to Pliny, he uſed only four colours. The varniſh with which he covered his pictures was of a peculiar kind, and ſerved to ſoften and harmonize his tints. It is recorded of him, that when he ſaw a Helen painted by one of his pupils with a profuſion of gold and jewels, he ſaid jocoſely to him; "not knowing how to make her handſome, you have made her rich." Apelles was a great favourite of Alexander, and was admitted into very intimate familiarity with him. Alexander would not allow any other painter to take his portrait; and it is related by Pliny, that when he had painted one of the moſt beautiful and beloved of his concubines, Campaſpe, naked, Alexander finding that Apelles had fallen in love with her, generouſly ſurrendered her to him. Apelles was permitted to uſe freedoms with Alexander, the reality of which has been diſputed on account of their ſingularity. When Alexander was one day in his ſhop talking very ignorantly of his art, it is ſaid that Apelles requeſted him to be ſilent, leſt the boys who ground his colours ſhould laugh at him. Apelles painted many pictures of Alexander, but the moſt famous was one, in the character of a thundering Jove, in

the temple at Ephesus. The hand which held the thunder-bolt ſeemed to come out of the canvas, and excite horror in thoſe who beheld it. But the moſt celebrated of all the pictures of Apelles was his "Venus Anaduomene," or riſing from the ſea, and preſſing her wet locks with her hands. The lower part of it was injured by time; but no one ventured to repair it. Another unfiniſhed Venus, of which the head and neck only were executed, was very much admired. Several of his other works were the ornaments of the temples and other edifices in which they were placed. Of the volumes which he wrote on the art, and inſcribed to one of his ſcholars, nothing is extant. Apelles was fond of ſociety, pleaſant in converſation, addicted to pleaſure, and devoted to the fair ſex. It is ſaid that the courteſan Lais was initiated by him into her profeſſion. The time and place of his death are not known. Gen. Diſt.

APELLES was the name alſo of one of the ſect of Marcionites, who flouriſhed about the year 100. Tertullian and ſome others charge him with criminality in his connection with Philomene, a fanatical virgin who pretended to prophetic illuminations; but Rhodon, in Eusebius, bears testimony to his character, as a person venerable for his age and abſtemious courſe of life. Beaufobre and Lardner vindicate him from this aſperſion. Apelles, however, ſeparated from his maſter, and adopted different ſentiments. Whiſt he taught that there is one God, perfectly good, he maintained that this holy and good God, who is over all, created an inferior deity, who was a fiery being, and who made heaven and earth, and all things in this world. He alſo believed that ſouls have ſexes, or at leaſt that bodies derived their ſexes from the ſouls that animated them. Concerning Chriſt, he taught that he aſſumed fleſh, not from the Virgin Mary, but that he formed for himſelf a body out of the four elements; and believing the reality of his crucifixion and reſurrection, it was his opinion, that when Chriſt aſcended, he ſurrendered his body to the elements from which he took it, and returned to heaven. Theſe peculiarities of Apelles are aſcribed to his conferences with Philomene. As he rejected Moſes and the ancient prophets, he maintained that Jeſus was the only perſon who ever came from God. He alſo denied the reſurrection of the body. In other matters he generally agreed with Marcion, and concurred with him in condemning marriage. As to his opinion concerning the ſcriptures of the Old Teſtament, it appears by his writings, as they are cited by Eusebius, Origen and others, that if he did not abſolutely reject the Old Teſtament, he charged upon it contrarieties and contradictions, and he laboured to evince the difficulties that occur in it, if not totally to overthrow its authority. His ſentiments concerning the New Teſtament were probably not different from thoſe of Marcion; as he denied the miraculous conception of Chriſt, it is likely that he rejected at leaſt the beginning of the gospels of St. Matthew and St. Luke. It appears, upon the whole, that he treated the ſcriptures as Marcion did, by receiving part, and rejecting what did not ſuit his purpoſe. And to this purpoſe Epiſtaphanius accuses him with acting, in this reſpect, like a judge, and not like an interpreter of ſcripture. None of Apelles's writings are preſerved, and therefore we muſt depend altogether upon the report of others with regard to his ſentiments. Lardner's Works, vol. ix. p. 437—448. Cave's Hiſt. Lit. tom. i. p. 85.

APELLES, in *Entomology*, a ſpecies of **SCARABÆUS**, found at the Cape of Good Hope. The head is furniſhed with a very ſhort horn; and the wing-caſes are cinereous, with elevated black dots. Fabricius, and Gmelin. This is a ſmall inſect: the legs are yellow and ſpotted with black.

APELLES is also a species of *HESPERIA ruralis*, in the Fabrician system. (Ent. Svll.) The wings are dentated, fulvous, border brown. Under side of the posterior pair marked with rufous silvery-margined bands. Inhabits New Holland. Obs. In the Linnæan system, this is one of the *PAPILIO P. b. ruralis*.

APELLICON, in *Biography*, a peripatetic, was a native of Teos, and lived about 90 years before Christ. He was extremely rich and avaricious: but his peculiar propensity led him to expend his wealth in the purchase of books. This propensity he indulged to such a degree, that his collection consisted of all the most scarce and valuable books that could be purchased or procured by any means, however illicit and dishonourable. Amongst other literary treasures, he at length obtained possession of the libraries of Aristotle and Theophrastus. These libraries had passed, by bequest, into the hands of Nilens of Scepsis, and from him they descended to his heirs. When they were informed that the king of Pergamus, to whose jurisdiction Scepsis was subject, eagerly sought after books, they buried their collection in a cavern, where they lay for more than 100 years, and suffered great damage. Apellicon discovered this treasure, and purchased it at a great price. Upon removing his library to Athens, he caused the writings of Aristotle and Theophrastus to be copied; but the chasms occasioned by the depredation of time were supplied by the transcribers, so that though the copies were made from the originals, they were of course in many respects erroneous and faulty. After Apellicon's death, Sylla seized on all his books, and took them with him to Rome to enrich his own library, and hence erroneous transcripts were communicated to the world. Apellicon himself was more pleased with having the possession of valuable books than with the perusal and study of them; so that Strabo justly calls him a lover of books rather than a lover of wisdom; φιλοβιβλος μαλλον η φιλοσοφος. Strabo Geog. lib. xiii. tom. ii. p. 906, &c.

APELLITÆ, in the *Primitive Church*, denote those who taught in the second century, that Christ left his body dissolved in the air; and so ascended into heaven without it. See **APELLES**.

APENE, ἀρην, chariot, in *Antiquity*, a kind of chariot wherein the images of the gods were carried in procession on certain days, attended with a solemn pomp, songs, hymns, dancing, &c.

The *apene*, or sacred chariot of the Greeks, is called *tenfa*.

It was very rich, made sometimes of ivory, or of silver itself, and variously decorated.

APENNAGE. See **AFANAGE**.

APENNINES, in *Geography*, a chain of mountains or hills of Italy, extending from the Alps to the southern extremity of the kingdom of Naples. At first they are a branch of the Alps, which separates the plains of Piedmont from the sea; so that they commence near Ormea, in the high ridge which now forms the boundary of the French department of the Maritime Alps, and stretch without interruption along both sides of the gulf of Genoa, at no great distance from the sea, giving source to many rivers that flow to the east. In the south of the former territory of Modena, after giving rise to the Panaro, and Reno, they proceed almost due east to the centre of Italy, where they afford sources to the Arno and the Tiber, and thence pass south-east to the extremities of Italy, generally approaching nearer to the Adriatic than to the Mediterranean. These mountains consist, to the south of Bologna, of stratified

grey hard limestone, with a few petrifications. Yet in the Genoese territory and Tuscany, appear not only the beautiful marble of Carrara, but rich serpentine, here called Gabbro, with steatite and asbestos. Granite, consisting of white felspar and green mica, is also found here. Among the animals of the Apennines we may reckon the marmot and the ibex. Pinkerton's Geog. vol. i. p. 631. The Apennines derive their name from Alpen, a Celtic word, signifying a high mountain.

APENNIS, in *Ancient Law*, a deed or instrument made in favour of a person, who has lost the title-deeds to his house or land by fire. Du-Cange.

In such case, an assembly of the people of the neighbourhood being called, and an exact inquiry made before the judge, another instrument was framed to confirm and secure the unhappy person's right.

APENRÅDE, in *Geography*, a sea port town of Denmark, in the duchy of Sleswick, situate at the bottom of a bay in the Baltic sea, surrounded with hills, which form a harbour, both deep and secure. The inhabitants are much employed in fishing, and it is besides a place of considerable trade. N. lat. 54° 52'. E. long. 10° 7'.

APEPSY, in *Medicine*, denotes crudity, or a want of digestion.

The word is formed from the privative particle α, and πepsis, *I concoct*.

Apepsia may be defined a defect in the stomach, which prevents the aliment taken in from affording a proper chyle for supplying the blood and nourishing the body. Abstemiousness and excess are alike causes of indigestion. The method of treatment in the *apepsia* is the same as in the *anorexy*. The *COLUMBO* root is particularly useful, when the stomach is languid, and digestion difficult, &c. It may be given in substance with any grateful aromatic, or in Madeira wine, now and then interposing gentle doses of rhubarb in tincture. A mixture of mustard-seed with the *columbo* root is of great utility in cases of this nature, where acidity and flatulence prevail much in the *prime via*. See Percival's Essays, &c.

APER, **MARCUS**, in *Biography*, a Roman orator in the first century, was a native of Gaul, who distinguished himself by his genius and eloquence, and occupied several important posts in the empire. He was probably the author of the dialogue "On the Corruption of Eloquence," sometimes ascribed to Tacitus or Quintilian, and placed at the end of their works. He died at Rome about the year 85. Gen. Biog.

APER, in *Zoology*, a name given to several species of the *SUS*; as the variety *ferus* of the *sus ferosa*, the *sus tajassu*, the *sus athiopicus*, and the *sus babyrussa*. See these articles, and **BOAR**, and **HOG**.

APER, in *Ichthyology*, a species of **ZEUS** that inhabits the seas about Rome and Genoa. The tail is even, and the body reddish. Linn. and Gmel. Some describe it as having the tail even, body entirely red or reddish, and the beak retracted.

APERÆ, in *Ancient Geography*, a town of Lycia, which became an episcopal see.

APERANTÈS, a people who inhabited *Aperantia*, which was a district of Theffaly, situate towards the south-west, and abounding with mountains, in which was the source of the river Achelous.

APEREA, in *Zoology*, a species of **CAVIA** or **Cavy**, having no tail, and the upper parts of the body being of a reddish ash-colour. This is the *cuniculus brasiliensis*, having

no tail, &c. of Brisson and Ray; the aperea of the Braffilians, so called by Marcgrave, &c.; the cuniculus indicus femina of Aldrovand. This animal inhabits Brazil, in the holes of the rocks, from which it is driven out and taken by little dogs; the colour of the upper part of the body resembles that of the hare; its body is white; the upper lip divided; the ears short and rounded like those of a rat. It moves like the hare, the fore legs being shorter than the hind; it has four toes with short small claws on the fore feet, which are black and naked, and only three on the hind, of which the middle is the longest; its length is about 12 inches; its flesh is like that of the rabbit, but reckoned of a superior flavour; and its manner of living is also very similar. There is a variety, which is the rock cavy of Pennant, of a black colour, mottled with tawny on the back, belly and throat white. It is exactly similar in every respect, except in colour, to the former. The animal called *cori* by Oviedo, Charlevoix, &c. is thought by Buffon to be the same with the aperea. There are many varieties of the *cori* with respect to colour; and they are found in various parts of the West Indies, and on the continent of America.

APERIENS *Os*, in *Anatomy*, a name given by some writers to a muscle of the mouth, called by Albinus *biventer maxillæ inferioris*, and by others DIGASTRICUS.

APERIENS *palpebram reclusus*, is a name that has been given to the muscle more commonly called LEVATOR *Palpebræ*.

APERIENTS, or APERITIVE medicines, from *aperio*, I open, are such as are suited to open obstructed passages; and particularly to restore suppressed excretions or evacuations; and the term is most commonly applied to those that are adapted to open the vessels of the uterus, and thereby to excite the retained, or to restore the suppressed, menstrual flux. The term, however, as variously employed, both with respect to different cases and to different modes of operation, is, without specifying the particular case and operations, extremely improper. Cullen's *Mat. Med.* vol. 1. p. 171. The term aperients in its present use is synonymous with *laxatives* or *purgatives*, which see.

APERISTATON, from *α*, without, and *περιστοι*, unfavourable circumstance, in the *Ancient Physic*, denotes an ulcer of a mild or benign kind, and not attended with any severe symptom.

APEROPIA, in *Ancient Geography*, a small island of the Ægean sea, opposite to the promontory of Buporthmos in the Argolide. It was so called by Pliny.

APERITIONS, in *Architecture*, are the openings in a building; as doors, windows, stair-cases, chimneys, outlets and inlets for light, smoke, &c.

The apertions should be as few as may be; it being a rule, that all openings are weakenings: and they should not approach too near the angles of the walls.

APERTO, *Ital.* in *Music*, open, opposed to *Chiuso*, close.

APERTOR *oculi*, in *Anatomy*, a name given by Spigelius and others to the muscle called the APERIENS *palpebram*, and LEVATOR *palpebræ superioris* by others.

APERTURE, the opening of any thing; or hole, cleft, or vacant place, in some otherwise solid or continuous subject. It comes from *aperire*, to open.

In *Geometry*, aperture is used for the space left between two lines, which mutually incline towards each other to form an angle.

In *Optics*, aperture is the hole next the object-glass of a telescope or microscope, through which the light and image of the object come into the tube, and are thence carried to the eye.

APERTURE is also understood of that part of the object-glass itself which covers the former, and which is left pervious to the rays. See TELESCOPE.

A great deal depends on having a just aperture. To find it experimentally, apply several circles of black smutted paper, each bigger than the other, upon the face of the glass, from the breadth of a straw to such as leave only a small hole in the glass; and with each of these separately view several distinct objects, as the moon, stars, &c.; that through which they appear the most distinctly is to be chosen.

M. Auzout affirms, that he found that the apertures of telescopes ought to be nearly in the subduplicate ratio of their lengths: but Huygens, who first found that the use of apertures conducted very much to one perfection of telescopes, assures us he found by experience, that the aperture of an object-glass, e. gr. of 30 feet, is to be determined by this proportion; as 30 to 3, that is, as 10 to 1, so is the square root of the distance of the focus of any glass multiplied by 30, to its proper aperture; and the focal distances of the eye-glasses are to be proportional to the apertures. A table of apertures for telescopes of various lengths, &c. see under the article TELESCOPE.

The greater or less aperture of an object-glass, it is to be noted, does not increase or diminish the visible area of the object; all that is effected by this is, the admittance of more or fewer rays, and, consequently, the more bright or obscure appearance of the object; but the largeness of the aperture or focal distance causes the irregularity of its refractions. See ABERRATION.

Hence in viewing Venus through a telescope, a much less aperture is to be used than for the Moon, Jupiter, or Saturn, because her light is so vivid and glaring. This circumstance does a little invalidate and disturb M. Auzout's proportion, as is shewn by Dr. Hook. *Phil. Trans.* N^o 4.

APERTURA *tabularum*, in *Ancient Law Books*, signifies the breaking open a last WILL and TESTAMENT.

APERTURA *feudi* denotes the loss of a feudal tenure, by default of issue to him to whom the feud or FEE was first granted.

APESAS, or APESANTUS, in *Ancient Geography*, a mountain of Peloponnesus, in the territory of Nemea.

APETALOUS, or APETALOSE plants, are such as are without, or have an imperfect or stamincous flower. They are so called because they are destitute of those tender fugacious coloured leaves, called *petals*; but consist only of a calyx or cup, and of stamina, or capillaments, or styles. *Phil. Trans.* N^o 186.

The word comes from the privative particle *α*, and *πεταλον*, *folium*, a leaf.

The apetalous kind is subdivided by Ray, 1. Into such whose fruits are not contiguous to their flowers; as in hops, hemp, nettles, spinach, mercury, *palma Christi*, the American physic-nut, &c. 2. Such as have a triquetrous or triangular seed, as the docks, sorrels, arsmarts, knot-grass, snake-weeds. 3. Those which have round, compressed, and otherwise figured seeds, as the pond-weeds, oraches, sea purslane, the blites, the amaranthi, the beets, some kalies, &c.

APETNA, in *Ancient Geography*, a town of Bœtica, near Corduba.

APETOUS, or APETUBES, in *Geography*, a people of South America, in Brasil, occupying the parts in the vicinity of the government of Puerto Saguro.

APEUCTIC, from *απειυχουαι*, I deprecate, in the *Ancient Poetry*,

Poetry, denotes a kind of poem or prayer preferred to God for averting some evil.

In which sense *apudicum* stands contradistinguished from *prosecutum carmen*, which begs for some good, e. gr. *di prohibete minas, di talem avertite casum, et placidi servate pias*.

APEX, the vertex or summit of any thing.

APEX is peculiarly used in *Antiquity*, for a kind of conical cap or covering of the head, wore by the flamen or priests of Jupiter; and also by the Sali, or priests of Mars. This was otherwise denominated *pilus capitiuus*, or *albanus*.

The apex is described as a flitched cap in form of a helmet, with the addition of a little stick fixed on the top, and wound about with white wool.

The ordinary flamen only wore the apex in the time of performing divine service; the flamen dialis always wore it out of doors; for within it was allowed him to be bareheaded. See **APICULUM**.

APEX was also used among the Romans for the crest of a helmet.

APEX, in *Botany*, denotes the point, end, or termination of a leaf, &c. Leaves, with respect to their apices, are called *truncate*, or lopped, when they end in a transverse line; *premorse*, or bitten in the fore-part, when they are very obtuse, and are terminated by unequal notches or incisions; *retuse*, or blunted, when they terminate in an obtuse sinus; *emarginate*, or nicked, when they terminate in a notch; *obtusè*, or blunt, when they terminate as it were within a segment of a circle; *acute*, or sharp, when they terminate in an acute angle; *acuminate*, or pointed, when they terminate in a subulate apex; and *cirrhose*, or clasped, when they terminate in a clasper or tendril. See **LEAF**.

APEX is also used, by *Grammarians*, for a long accent or mark, to denote that a syllable is to be pronounced long. Quintilian condemns the practice of putting the apex on all long syllables; yet in some cases he allows the apex necessary, e. gr. where the different lengths of a syllable distinguish the different senses of a word, as in *malus*, which, as long or short, denotes an *ill man*, or an *apple tree*. See **ACCENT**.

APHACA, in *Botany*. See **LATHYRUS**.

APHACA, in *Ancient Geography*, a town of Syria, between Heliopolis and Biblos, near mount Lebanon. Zosimus (lib. i. c. 58.) informs us, that in this town was a temple of Venus called *Aphacitis*; and near the temple there was a lake, in which the gifts that were presented to the goddess, however light in themselves, sunk to the bottom, if acceptable; but if displeasing, they floated, however heavy, on the surface of the water. Eusebius (in Vit. Const. lib. iii. c. 55.) styles his temple a school of wickedness, in which men prostituted themselves like women, in order to render the goddess propitious by their infamy. The temple was rased to the ground by Constantine the Great, and all its statues destroyed. The name is of Syriac origin, and denotes *embrace*, or *salute*; and hence this Venus was denominated "The Goddess of embraces."

APHÆREMA, one of the three tetrarchies added to Judæa by the kings of Syria.

APHÆRESIS, from ἀφαιρέω, *I take away*, in *Grammar*, a figure whereby something is taken away from the beginning of a word.

Thus *ciconia*, by aphæresis, is written *conia*; *contemnere*, *temnere*; *omittere*, *mittere*, &c.

A like retrenchment at the end of a word is called *apocope*.

APHÆRESIS, in *Medicine*, denotes a necessary taking away or removing of something that is noxious.

In *Surgery*, it signifies an operation whereby something superfluous is taken away.

APIANES (Ἀπιάνης; not apparent from its diminutive size), in *Botany*, parsley-piert. Linn. Gen. 166. Schreb. 223. Juss. 337. Class, *tetrandria digynia*, or *monandria monogynia*; natural order, *senticoza*; *rosacea* of Jussieu.

Generic Character. *Calyx*, perianth one-leafed, tubular, permanent; mouth flat, eight-parted; *corolla* none; *filamina*, filaments four, or one, erect, subulate, very small, placed at the mouth of the calyx; anthers roundish, or one twin; *pisillum*, germ ovate; *style* filiform, inserted into the base of the germen; *stigma* headed; *perianthium* none; *seeds* ovate, acuminate, compressed, contained in the bottom of the calyx. This plant is by Dr. Smith removed to the genus *alebenilla*. Flor. Brit. vol. i. 190. 1. *A. arvensis*, parsley-piert. Hudf. Aug. 72. With. 143. Flor. Dan. 973. A small annual plant, with spreading branched leafy stems; leaves alternate, petiolate, palmato-tripartite, crenate and indented, hairy; calyx eight-toothed, alternately very minute; seeds one or two; it is a common British plant, growing in fallow fields. In most of the old Herbals, it is called parsley break-stone, from its supposed lithontriptic qualities.

APHAR, in *Ancient Geography*, the metropolis of Arabia Felix, situate near a bay on the sea-shore, and not far north from the Promontorium Aromatum. Aphar, according to some authors, was the capital of the Homerites, where the king kept his court. In the Notitia Imperii, Aphar is a river. This place, now called *Al-Fara*, is situated on a river between Mecca and Medina.

APHARA, or **APHERA**, a town of Palestine, in the tribe of Benjamin.

APHARANTES, a people of Libya, who had no fixed habitation.

APHARSATHKITES, a people who were transferred together with the *Apharfites* into Samaria, by Esarhaddon, king of the Assyrians, and who opposed the Jews in rebuilding their temple. Ezra, iv. 9.

APHAS, called by D'Anville *Avas*, a river of Epirus, which ran from north to south in the eastern part of the country, and discharged itself into the Ambracian gulf, at some distance to the east of the Aracithus.

APHASIA, from ἀ, and φημι, *I speak*, in the *Sceptic Philosophy*, denotes a state of doubt, wherein a person not knowing what to determine on, it is best for him to be silent. In this sense *aphasia* stands opposed to *phasis*, under which are included both assertion and negation.

APHEA, in *Mythology*, a goddess worshipped by the Eginete and Cretans. Pindar wrote an ode in honour of her, and she had a temple in the island of Crete. The Cretans confounded her with Diana.

APHEK, in *Scripture Geography*, a name given to several cities. 1. Aphek in the tribe of Judah, was the place where the Philistines encamped, when the ark was brought from Shiloh, which they had taken in battle. 1 Sam. iv. 1, 2, 3, &c. 2. Aphek in the valley of Jezreel, where the Philistines encamped, while Saul and his army were near Jezreel, on the mountains of Gilboa. 1 Sam. xxix. 1, &c. 3. Aphek, a city belonging to the tribe of Asher, near the country of the Sidonians. Josh. xix. 30. xiii. 4. This was probably the same with Aphek of Syria, in Benhadad's kingdom, near which the Syrians were defeated in a battle between Ahab and Benhadad. 1 Kings, xx. 26, &c. It was, perhaps, the **APHACA** near Lebanon.

APHELIA,

APHELION.

APHELIA, from ἀφελιας, *simple*, in *Rhetoric*, is used to denote simplicity of DICTION.

APHELION, from ἀπο, *from*, and ἥλιος, *sun*, in *Astronomy*, that point of the earth's or any planet's orbit, in which it is at the greatest distance from the sun.

Thus, a planet being in A (*Plate I. Astron. fig. 9.*) its utmost distance from the sun S, at the extremity of the greater or transverse axis of the elliptic orbit, is said to be in its aphelion. In the system or supposition of the sun's moving round the earth, the point in which he appears when the planet is in its aphelion, is called *apogee*. The aphelion stands opposed to the perihelion.

The times of the aphelia of the primary planets may be known by their diameters appearing the smallest, and by their moving with the least velocity in a given time. Methods for calculating them, with the results of the computations, have been given by many astronomers; such as Riccioli, *Almag.* Nov. lib. vii. § 2 and 3.; Wolfius, *Elem. Astron.* § 659; Dr. Halley, *Phil. Transf.* N^o 128; sir Isaac Newton, *Princip.* lib. iii. prop. 14; Dr. Gregory, *Astron.* lib. iii. prop. 14; Keill's *Intro. to Astron.* lect. xxii-xxiv. De la Lande, *Mem. de l'Acad.* 1755, 1757, and 1766; and *Astron.* lib. xxii.; and also in the writings of M. Euler, M.

D' Alembert, M. Clairaut, &c. upon *Attraction*. See also Vince's *Astron.* vol. i. p. 130. &c.; and the article PLANET in this Dictionary. The places of the aphelia are stated by different authors as in the following tables.

For the Year 1700, according to KEPLER and DE LA HIRE.

PLANETS.	KEPLER.	DE LA HIRE.
Mercury	♿ 8°. 25'. 30"	13°. 3'. 40"
Venus	♀ 3. 24. 27	6. 56. 10
Earth	♁ 8. 25. 30	* * *
Mars	♂ 0. 51. 29	0. 35. 25
Jupiter	♃ 8. 10. 40	10. 17. 14
Saturn	♄ 28. 3. 48	29. 14. 41

Place of the Aphelia for the Beginning of 1750.

PLANETS.	M. CASSINI.	DR. HALLEY.	M. DE LA LANDE.
Mercury	8°. 13°. 41'. 18"	8°. 13°. 27'. 12"	8°. 13°. 33'. 58"
Venus	10. 7. 38. 0	10. 7. 18. 31	10. 7. 46. 42
Earth	3. 8. 27. 23	3. 8. 28. 43	3. 8. 37. 16
Mars	5. 1. 36. 9	5. 1. 31. 38	5. 1. 28. 14
Jupiter	6. 10. 14. 33	6. 10. 33. 46	6. 10. 21. 4
Saturn	8. 29. 13. 31	8. 29. 39. 58	8. 28. 9. 7

N. B. The place of the aphelion of Herschel, or Georgium Sidus, in 1788, was 11°. 16°. 19'. 30"; and in 1790, 11°. 3°. 29'. 42".

Kepler makes the earth's apogee to have coincided with the equinoctial point ♄, on July 24, in the year 3993 before the Christian era, which, according to some authors, is about the time of the creation. At the same time, he makes the aphelion of Saturn to be ♄ 24°. 28'. 6"; of Jupiter ♁ 23°. 34'. 18"; of Mars ♂ 15°; of Venus ♀ 0°. 0'. 0"; of Mercury ☿ 0°. 0'. 0"; and the apogee of the Moon ♁ 0°. 0'. 0".

None of the aphelia of the planets are at rest; for their mutual actions upon one another keep those points of their orbits in a continual motion; and this is greater or less in the different planets. The course of this motion is in confuentia, or according to the order of the signs; and sir Isaac Newton shews, that it is in the sesquuplicate ratio of the respective distances of the planets from the sun, or as the square root of the cube of the distances. This motion, arising from their mutual attraction, is ascertained by comparing the places settled by the ancient and modern observations; or by comparing the length of an anomalistic with that of a tropical or sidereal revolution.

To find the Motion of the Earth's Apogee. Hipparchus, 140 years before Christ, determined its place to be 2°. 5½°; and by the observations of Waltherus, in 1496, it was found to be 3°. 3°. 57'. 57"; whence the motion of the apogee is 1'. 2¾" in a year, with respect to the equinoctial points. M. de la Caille determined the place of the apogee for the beginning of the year 1749, to be 3°. 8°. 39'; which compared with the observation of Waltherus, gives 1'. 6" for the yearly motion. In the year 1588, Tycho determined the place of the apogee to be 3°. 5°. 30'; and Kepler, in the same year, determined its place to be 3°. 5°. 32". These compared with the observation of Cassini, in the year 1738, who determined its place to be then in 3°. 8°. 19'. 8", give about 1'. 7" for the annual motion. M. de la Caille determined the length of the anomalistic year to be 26'. 33" longer than the tropical year, which makes the motion of the apogee to be 1'. 5½" in a year. Kepler made it 1'. 2"; Ricciolus 1'. 2". 4". 4". in a year. Mayer in his Tables makes it 1'. 6". Dr. Halley makes it 1'. 1"; and Cassini about 1'. 1". 25". M. de la Lande, in his Tables, makes it 1'. 2" as computed by M. de Lambre, from Dr. Maskelyne's observations in 1788; and this determination is most to be depended upon, as made by so eminent an astronomer, from observations which

APHELION.

which are acknowledged to be the best that have been ever made. These motions are in respect to the equinox. If we assume it to be $1'. 2''$, and the precession of the equinoxes to be $50\frac{1}{4}''$, we shall have the real motion of the apogee $11\frac{3}{4}''$ in a year.

To determine the Motion of the Aphelion of Saturn. The place of the aphelion, in 1694, was $8'. 28'. 58''$; but from three oppositions observed in the years 127, 133, and 136, its place for the year 132 was $7'. 24'. 14''. 20''$, which makes the annual motion $1'. 20''$. Tycho found the place of the aphelion on December 19, 1590, to be $8'. 25'. 40''. 51''$, which compared with the observation in 132, gives $1'. 18''. 55''$ for the annual motion. The same observation of Tycho compared with the place of the perihelion on December 12, 1708, in $8'. 28'. 25''. 10''$, gives $1'. 23''. 5$ for the annual motion. If the same observation of Tycho be compared with the place of the aphelion in April 1694, in $8'. 28'. 58''$, it gives $1'. 55''$ for the annual motion. Cassini conjectured from all this, that the motion of the aphelion was quicker now than formerly. He also found the perihelion, in 1708, not so forward by a degree as it ought, when compared with the place of the aphelion in 1694, at the annual movement of $1'. 20''$; from whence he suspected that the orbit had a librating motion, and that there ought to be an equation employed between the two points. The irregularities of Saturn, however, are so great, that we need not wonder at these differences. Kepler makes it $1'. 16''$; Cassini supposes it to be $1'. 18''$; and Dr. Halley $1'. 20''$. M. de la Grange, from calculating the disturbing force of each planet upon the other, has determined the annual motion of the aphelion to be $1'. 6''. 3$. M. de la Place makes it $1'. 6''. 07$, which M. de la Lande has employed in his Tables.

To determine the Motion of Jupiter's Aphelion. According to the observations of Ptolemy, the aphelion was in $\mu\gamma 14^\circ. 38'$ in the year 136; but in 1720 it was in $\approx 9^\circ. 47'$; this gives $57''. 11'''$ for the annual motion. In the year 1590, the place of the aphelion, calculated from the observations of Tycho, was found to be in $\approx 6^\circ. 30'. 43''$; this compared with the observation in 1720, gives $1'. 30''$ for the annual motion. If we compare the places in 136, and 1590, they give $54''$ for the annual motion. This induced Cassini to think, that the motion of the aphelion is accelerated; or that it was subject to some irregularities; he states the motion at $57''. 24'''$; Kepler makes it $47''$; Dr. Halley makes it $72''$; M. Jaurat computed the place of the aphelion in 1590 to be $\approx 7^\circ. 49'. 19''$, and in 1762 in $\approx 10^\circ. 36'. 41''$; from which he found the annual motion to be $58''. 4$. Euler, from the theory of attraction, found it to be $55''$; M. de la Grange, $57''. 2$. M. Wargentin says, that an annual motion of $62''$ best agrees with observation. M. de la Lande has employed $56''. 73$ in his last Tables, according to the theoretical determination of M. de la Place.

To determine the Motion of the Aphelion of Mars. From three oppositions determined by Ptolemy, the place of the aphelion in 135 was found to be $3'. 29'. 24''$; and by the observations made at Greenwich in 1601, 1696, and in 1700, the place was found to be in $5'. 0'. 31''. 34''$ in 1696; hence the annual motion of the aphelion is $1'. 11''. 47''' . 20'''$;

Kepler makes it $1'. 7''$; Dr. Halley makes it $1'. 12''$. From comparing the place, in 1748, in $5'. 1'. 26'. 10''$, with the place in 1592 in $4'. 28'. 49'. 50''$, the motion is $1'$. The mean of these determinations is $1'. 7''. 5$. M. de la Lande supposes it to be $1'. 7''$.

To determine the Motion of the Aphelion of Venus. Cassini has found, from computing the place of the aphelion from the ancient observations, a difference of $15'$, from which uncertainty it is more difficult to determine its annual motion. However, the place, computed from the observations in 136, 138, and 140 (and which he thinks are the most to be depended upon), was found, in 138, to be in $4'. 21'. 29''$; this compared with the observations in 1715, 1716, and 1718, when it was found to be in $\approx 6^\circ. 50'$ in 1716, the annual motion is found to be $1'. 42''. 50''$. From comparing the place in 1596 in $\approx 1^\circ. 54'$ with the place in 1716 in $\approx 6^\circ. 50'$, the motion is $2'. 28''$. Horrox fixed the place of the aphelion in 1639 in $\approx 5^\circ$; this compared with the place in 1716, gives $1'. 26''$ for the motion. By comparing the place of the aphelion in the first Tables of M. de la Lande with the place in Kepler's Tables, the annual motion comes out $2'. 41''. 5$; Cassini makes it $1'. 26''$; and Dr. Halley $56''. 5$. Kepler makes it $1'. 18''$. Amidst so much uncertainty, M. de la Lande thinks it better to depend upon the theory which, according to M. de la Grange, makes it $48''. 5$, and which M. de la Lande employs in his Tables. On account of the small eccentricity, this uncertainty of the place of the aphelion is not of so much consequence, as an error of 1° in the place of the aphelion will never produce an error of $1'$ in the heliocentric longitude.

To determine the Motion of the Aphelion of Mercury. From the observations of the passages of Mercury over the sun in 1661, 1690, and 1697, Cassini determined the place of the aphelion on November 9, 1690, to be in $8'. 12'. 22'. 25''$; and upon supposition that the motion of the aphelion was $1'. 20''$ in a year, he found that it represented the passages very well in 1631, 1672, 1723, and 1736. But as these passages were nearly at the same point of the orbit, it does not sufficiently establish $1'. 20''$ to be the true motion, as it might answer to the same points nearly, but not to other parts of the orbit. We ought not therefore to be surprised, says M. de la Lande, that a motion of $52''. 5$ by Dr. Halley answers equally well to the same observations. Kepler makes it $1'. 45''$. M. de la Lande found, by the greatest equation, that on May 6, 1753, the place of the aphelion was $8'. 13'. 55''$. From comparing this place with the place computed from eight observations of Ptolemy (rejecting six others, two of which did not appear to be reconcilable with each other, and four were too near the aphelion), he found the motion to be $1'. 10''$ in a year, which he constructed his first Tables upon; observing, however, at the same time, that this motion does not agree perfectly with the observations in this century. He has since found that a motion of $56''. 25$ will best agree with observation; and this he has assumed in his last Tables. M. de la Grange makes it $57''$ by theory. The motions of the aphelia here determined are their motions in longitude; if therefore we subtract $50''. 25$ (the annual precession of the equinoxes) from each, we shall get their real motions.

Motion of the Aphelia in One Hundred Years.

PLANETS.	M. CASSINI.	DR. HALLEY.	M. DE LA LANDE.
Mercury	2°. 13'. 20"	1°. 27'. 37"	1°. 33'. 45"
Venus	2. 23. 20	1. 34. 13	1. 21. 0
Earth	1. 42. 55	1. 41. 7	1. 43. 35
Mars	1. 59. 38	1. 56. 40	1. 51. 40
Jupiter	1. 35. 42	2. 0. 0	1. 34. 33
Saturn	2. 9. 44	2. 13. 20	1. 50. 7

According to the calculations of M. de la Grange, the aphelion of the Georgian planet is progressive 3",17 in a year, from the action of Jupiter and Saturn; consequently its motion in longitude is 50",25 + 3",17 = 53",42. He

has also calculated the effect of each planet in disturbing the aphelia of the rest. The following table contains the annual effect.

Annual Motion of the Aphelia.

	MERCURY.	VENUS.	EARTH.	MARS.	JUPITER.	SATURN.
By Mercury	. . .	— 4",30	— 0",42	0",02	0",00	0",00
— Venus	4",14	. . .	+ 5, 20	0, 70	0, 01	0, 00
— Earth	0, 84	— 5, 06	. . .	1, 92	0, 01	0, 00
— Mars	0, 04	+ 1, 18	+ 1, 54	. . .	0, 00	0, 00
— Jupiter	1, 56	+ 6, 38	+ 6, 79	12, 31	. . .	15, 99
— Saturn	0, 08	+ 0, 08	+ 0, 19	0, 70	6, 56	. . .
Real motion	6, 66	— 1, 72	13, 30	15, 65	6, 58	15, 99
Precession	50, 25	50, 25	50, 25	50, 25	50, 25	50, 25
Mot. in long.	56, 91	48, 53	63, 55	65, 90	56, 83	66, 24

M. de la Grange here supposes, as before, the density of Venus to be 1,31, but M. de la Lande makes it only 0,95; for this density, therefore, the second horizontal line must be diminished in the ratio of 1,31 to 0,95. See Vince's Astronomy, vol. 1 c. 14.

APHELLAN, the name of a bright star in the constellation Gemini, marked α.

APHERNOUSLI, in Botany, a species of pine growing wild on the Alps. The timber is large, and the planks made of it are of a finer grain, and more beautifully variegated than deal; and may therefore be applied to many uses. It grows in bleak and barren ground, and most resembles that which is called in England the Weymouth pine.

APHES DOMIN, in Scripture Geography, a place of Palestine in the tribe of Juda, between Socho and Azecha, where the Philistines were encamped whilst Goliath insulted the Israelites.

APHESIS, from ἀφίημι, I remit, in the Athenian Laws, was applied to the case of a person deeply indebted, who

desired the people to remit part of the debt, on account of his disability to make payment.

Voetius has a dissertation expressive on the words *aphesis* and *parefsis*, and their difference.

APHETERIA, in the Ancient Military Art, a kind of engines used in the besieging of towns.

Suidas does not mention their particular form or structure. Aquinas takes them to have been of the projectile kind.

APHIDIODES, in Entomology, a species of ACARUS, of a red colour; the first pair of legs very long, and formed for running; two horns on the posterior part of the abdomen. Linn. Fann. Succ. Fab. This is la tique rouge des pierres à pattes antérieures fort longues of Geoffroy, and is found among stones and rotten wood.

APHIDUM, a species of ICHNEUMON that is produced from several of the European kinds of aphides. It is black, with yellow feet, and antennæ about the length of the body. Geofr. Inf. L'ichneumon des pucerons.

APHILANTHROPY, from α, φίλος, friend, and ἀ-βρωπος man, among Physicians, denotes the state or disorder, wherein

wherein a person has an unnatural disrelish for mirth and society, and indulges solitude and melancholy.

APHIOCEM, a composition made principally of the buds of hemp before they flower. It is much in use among the Arabs, and has the intoxicating quality of **OPIMUM**.

APHIOM, **KARA HISSAR**, in *Geography*, a town of Asiatic Turkey in Natolia, situate on the Mindra, and defended by an elevated castle; 56 miles south from Kutaia. N. lat. $38^{\circ} 35'$. E. long. $32^{\circ} 18'$. See **APAMEA**.

APHIS, in *Entomology*, a very interesting and extensive genus of the **HEMIPTERA** order, in the Linnæan system. It is a tribe of creatures that has, in a particular degree, engaged the attention of naturalists for various reasons: their generation is equivocal, and their instinctive economy differs, in some respects, from that of most other animals, as will appear hereafter.

Linnæus defines the generic character of the aphid thus; beak inflected, sheath of five articulations, with a single bristle; antennæ setaceous, and longer than the thorax; either four erect wings, or none; feet formed for walking; posterior part of the abdomen usually furnished with two little horns. Geoffroy says, the aphides have two beaks, one of which is seated in the breast, the other in the head; this last extends to, and is laid upon the base of the pectoral one; and serves, as that writer imagines, to convey to the head a part of that nourishment which the insect takes, or sucks in, by means of the pectoral beak.

The species enumerated by Linnæus and Gmelin are, longirostris ribis, arundinis, ulmi, papaveris, paltinacæ, pruni, sambuci, solidaginis, cerasi, rumicis, acetosæ, ligustici, lychnidis, capræ, padi, rosæ, hortensis, pieridis, ægopodii, danci, urticata, nymphææ, corni, tilizæ, juniperi, brassicæ, craccæ, lactucæ, fonchi, cirsi, cardui, achilleæ, tanacet, absinthii, millefolii, evonymi, avenæ, fraxini, jaceæ, betulæ, alni, roboris, fagi, quercus, pini, pineti, salicis, vitis, populi, tremulæ, viburni, mali, bursaria, aparinis, urticæ, aceris, atriplicis, pistaciæ, persicæ, polyanthi, falgina, plantaginis, archangelicæ, leucantheni, scabiosæ, fabæ, genistæ, coryli, juglandis, balsamitæ, gallarum, farinosa, xyloltei, and mayeri. The whole of these, and no doubt, many others, are found in different parts of Europe. They infest an endless variety of plants; and it is believed each species is particularly attached to one kind of vegetable only; hence each sort has been hitherto uniformly named after the individual species, or genus of plants, on which it feeds; or if that could not be ascertained, that on which it had been found; for some species are rather uncommon and little known, though others are infinitely too numerous. The aphides are sufficiently known by the indiscriminate term of **PLANT LICE**; they abound with a sweet and grateful moisture, and are therefore eagerly devoured by ants, the larva of coccinellæ, and many other creatures, or they would become, very probably, more destructive to the whole vegetable creation than any other race of insects known.

If Bonnet was not the first naturalist (as is generally acknowledged) who discovered the mysterious course of generation in the aphides, or, as he calls them, pucerons, his experiments, together with those of his countryman Trembley, tended at least to confirm in a most satisfactory manner the almost incredible circumstances respecting it: that an aphid or puceron, brought up in the most perfect solitude from the moment of its birth, in a few days will be found in the midst of a numerous family; and that if the experiment be again repeated on one of the individuals of this family, a second generation will multiply like its pa-

rent; and the like experiment may be many times repeated with the same effect.

“M. Bonnet,” says an ingenious writer, “had repeated some experiments of this kind, as far as the sixth generation, which all uniformly presented the observer with fruitful virgins, when he was engaged in a series of new and tedious experiments, from a suspicion imparted by M. Trembley, in a letter to him, who thus expresses himself: ‘I have formed the design of rearing several generations of solitary pucerons, in order to see if they would all equally bring forth young. In cases so remote from usual circumstances, it is allowed to try all sorts of means; and I argued with myself, who knows but that one copulation might serve for several generations?’ This ‘*subo knovus*’ persuaded M. Bonnet that he had not sufficiently pursued his investigations. He therefore now reared to the tenth generation his solitary aphides, having the patience to keep an exact account of the days and hours of the birth of each generation. He then discovered both males and females among them, whose amours were not in the least equivocal; the males are produced only in the tenth generation, and are but few in number; that these soon arriving at their full growth, copulate with the females, and that the virtue of this copulation serves for ten successive generations; that all these generations, except the first, from fecundated eggs are produced viviparous, and all the individuals are females, except those of the last generation, among whom some males appear to lay the foundation of a fresh series.” Adams *Microsc.*

The history of aphides has also been very copiously treated upon by Dr. Richardson, in a paper printed in the 41st vol. of the *Philosophical Transactions*; nor must we omit another upon the same subject by the late ingenious Mr. Curtis, that appeared in the sixth volume of the *Transactions of the Linnæan Society*.

The tenor of Dr. Richardson’s remarks is briefly this: the great variety of species which occur in the insects now under consideration, may make an inquiry into their particular natures seem not a little perplexing; but by reducing them under their proper genus the difficulty is considerably diminished. We may reasonably suppose all the insects, comprehended under any distinct genus, to partake of one general nature; and by diligently examining any particular species, may thence gain some insight into the nature of all the rest. With this view, Dr. Richardson chose out of the various sorts of aphides the largest of those found on the rose tree; not only as its size makes it more conspicuous, but there are few of so long duration. This sort appears early in the spring, and continues late in autumn, while several are limited to a much shorter term, in conformity to the different trees and plants whence they draw their nourishment.

If, at the beginning of February, the weather happens to be so warm as to make the buds of the rose tree swell and appear green, small aphides are frequently to be found on them, though not larger than the young ones in summer when first produced. It will be found, that those aphides which appear only in spring, proceed from small black oval eggs which were deposited on the last year’s shoot; though when it happens that the insects make too early an appearance, the greater part suffer from the sharp weather that usually succeeds, by which means the rose trees are some years in a manner freed from them. The same kind of animal is then at one time of the year viviparous, and at another oviparous.

These aphides which withstand the severity of the weather,

ther, seldom come to their full growth before the month of April, at which time they usually begin to breed, after twice casting off their exuvia, or outward covering. It appears that they are all females, which produce each of them a numerous progeny, and that without having intercourse with any male insect; they are viviparous, and, what is equally singular, they all come into the world backwards. When they first come from the parent, they are enveloped in a thin membrane, having in this situation the appearance of an oval egg; these egg-like appearances adhere by one extremity to the mother, while the young ones contained in them extend to the other, and by that means gradually draw the ruptured membrane over the head and body to the hind feet. During this operation, and for some time after, the fore part of the head adheres, by means of something that is glutinous, to the vent of the parent. Being thus suspended in the air, it soon frees itself from the membrane in which it was confined; and after its limbs are a little strengthened, is set down on some tender shoots, and left to provide for itself.

In the spring months there appear on the rose trees but two generations of aphides, including those which proceed immediately from the last year's eggs; the warmth of the summer adds so much to their fertility, that no less than five generations succeed one another in the interval. One is produced in May, which casts off its covering, while the months of June and July each supply two more, which cast off their coverings three or four times, according to the different warmth of the season. This frequent change of their outward coat is the more extraordinary, because it is repeated more often when the insects come the soonest to their growth, which sometimes happens in ten days, where they have had plenty of warmth and nourishment.

Early in the month of June, some of the third generation, which were produced about the middle of May, after casting off their last covering, discover four erect wings, much longer than their bodies; and the same is observable in all the succeeding generations which are produced during the summer months, but still without any diversity of sex: for some time before the aphides come to their full growth, it is easy to distinguish which will have wings, by a remarkable fullness of the breast, which in the others is hardly to be distinguished from the body. When the last covering is rejected, the wings which were before folded up in a very narrow compass, are gradually extended in a surprising manner, till their dimensions are at last very considerable.

The increase of these insects in the summer time is so very great, that by wounding and exhausting the tender shoots they would frequently suppress all vegetation, had they not many enemies to restrain them. Notwithstanding these insects have a numerous tribe of enemies, they are not without their friends, if those may be considered as such, who are officious in their attendance for the good things they expect to reap thereby. The ant and bee are of this kind, collecting the honey in which the aphides abound, but with this difference, that the ants are constant visitors, the bee only when flowers are scarce; the ants will suck in the honey, while the aphides are in the act of discharging it; the bees only collect it from the leaves on which it has fallen.

In the autumn three more generations of aphides are produced, two of which generally make their appearance in the month of August, and the third before the middle of September. The two first differ in no respect from those which are found in summer; but the third differs greatly from all the rest. Though all the aphides which have hitherto appeared

were female, in this tenth generation several male insects are found, but not by any means so numerous as the females.

The females have, at first, the same appearance as those of the former generations, but in a few days, their colour changes from a green to a yellow, which is gradually converted into an orange before they come to their full growth: they differ also, in another respect, from those which occur in summer, for all these yellow females are without wings. The male insects are, however, still more remarkable, their outward appearance readily distinguishing them from this and all other generations. When first produced they are not of a green colour like the rest, but of a reddish brown, and have afterwards a dark line along the back; they come to their full growth in about three weeks, and then cast off their last covering, the whole insect being after this of a bright yellow colour, the wings only excepted: but after this change they become of a deeper yellow and in a very few hours of a dark brown, if we except the body, which is something lighter coloured, and has a reddish cast. The males no sooner come to maturity than they copulate with the females, who, in a day or two after their intercourse with the males, lay their eggs, generally near the buds. Where there are a number crowded together they of course interfere with each other, in which case they will frequently deposit their eggs on other parts of the branches.

It is highly probable that the aphides derive considerable advantages by living in society; the reiterated punctures of a great number of them may attract a larger quantity of nutritious juices to that part of the tree or plant where they have taken up their abode. Vide Adams Microf. Phil. Trans. &c.

The observations of Mr. Curtis on the aphides are chiefly intended to shew that they are the principal cause of blights in plants, and the sole cause of the honey-dew. He therefore calls them the aphis, or blighter; and after observing, that in point of number, the individuals of the several species composing it surpass those of any other genus in the country, speaks thus, in general terms, of the whole tribe:

“These insects live entirely on vegetables. The loftiest tree is no less liable to their attacks than the most humble plant. They prefer the young shoots on account of their tenderness; and on this principle often insinuate themselves into the very heart of the plant, and do irreparable mischief before they are discovered. But for the most part, they beset the foliage, and are always found on the underside of the leaf, which they prefer, not only on account of its being the most tender, but as it affords them protection from the weather, and various injuries to which they would otherwise be exposed. Sometimes the root is the object of their choice, which, from the nature of these insects, one would not, *à priori*, expect; yet I have seen the roots of lettuces thickly beset with them, and the whole crop rendered sickly and of little value; but such instances are rare. They rarely also attach themselves to the bark of trees, like the aphis salicis, which being one of our largest species, and hence possessing superior strength, is enabled to penetrate a substance harder than the leaves themselves.”

Mr. Curtis next observes, that as among caterpillars we find some that are constantly and unalterably attached to one or more particular species of plants, and others that feed indiscriminately on most sorts of herbage, so it is precisely with the aphides; some are particular, others more general feeders; and as they resemble other insects in this respect, so they do also in being more abundant some years than others. In 1793, they were the chief, and in 1798,

the sole cause of the failure of the crops of hops. In 1794, a season almost unparalleled for drought, the hop was perfectly free from them, while peas and beans, especially the former, suffered very much from their depredations. Beans, in 1798, were almost wholly cut off by them; indeed they suffer more or less every year by a black species of aphid, particularly the latter crops. To potatoes, and even corn, they prove in some years highly detrimental, and not less so to melons. To plants in stoves, green houses, and frames, where, from the warmth and shelter afforded them, a preternatural multiplication takes place, they prove extremely injurious; and many rare and valuable plants also in the open ground of our botanic gardens fall victims to these general depredators. "Seeing, therefore," says that writer, "that our necessities, as well as luxuries of life, are so materially affected by the insects of this genus, an attempt to ascertain some curious and important facts relative to their history, and to make them more generally known, will not, we trust, be unacceptable. Such inquiries may possibly lead to the means of obviating the injuries they occasion; and if they fail in this, they may tend at least to correct the erroneous notions entertained of blights, not by the vulgar and illiterate merely, but even by persons of education, who may be frequently heard to maintain, that these insects are brought by the east winds; that they attack none but sickly plants; with other notions, all as false in fact as unphilosophical in principle."

In the course of this long but ingenious paper, Mr. Curtis proves, in a satisfactory manner, the truth of his preliminary remarks; and, by a series of experiments, which are necessarily beyond our limits to detail, has discovered some peculiarities in their economy deserving notice: we shall conclude with a brief survey of those most interesting, and refer the more inquisitive reader to the paper at length, in the *Transactions of the Society for 1802*.

Locusts and caterpillars are furnished with strong jaws, by means of which they crop and wholly devour the foliage of plants. The aphid destroys them in a different way. Instead of jaws and teeth, it is provided with a hollow-pointed proboscis, which, when the animal is not feeding, folds under the breast. With this instrument it pierces the plant, and imbibes its juices to support itself; but these juices being essential to the life of the plant, it follows, that when they are drawn off, the plant, exhausted, flags and perishes, being, in fact, literally bled to death by these leech-like animalcules. Yet so tenacious of life are plants in a healthy state, that, in general, they only fall victims to the continued attacks of these insects when in immense numbers. But it most commonly happens, that if they do not wholly destroy a plant, they deface it; and a small number of aphides are sufficient to produce this effect.

Aphides are described by the best authors as being generally oviparous and viviparous at different periods of the same year. Mr. Curtis found, from the 24th of September to the 6th of December following, during which time Fahrenheit's thermometer had been as low as 29, that the aphid *falicis* was constantly viviparous; though, from the inclemency of the weather, very few of these insects, at the period last mentioned, remained on the trees; and those few were soon after entirely cut off by the unusual cold that took place, the thermometer falling to four degrees below 0. Other aphides are oviparous or viviparous, according to the temperature of the air to which they are exposed. In very cold weather they are oviparous, for this obvious reason, that the eggs are capable of resisting cold more powerfully than the young. On the 22d of November, in the same year,

he found a considerable number of eggs, which had been deposited in some auricula plants by a green aphid, which infests plants very commonly, while the same species on a geranium within doors produced young. In mild winters, in the month of January, the same species of aphid has been observed in great numbers on various species of primula without doors, and all the females viviparous. These, and some preceding facts, prove, that all aphides are not oviparous and viviparous at the same season, but that some may be wholly viviparous; that all such as are both oviparous and viviparous do not lay eggs toward the middle of autumn, nor at all during the winter, unless a certain degree of cold takes place.

In the quality of the excrement voided by these insects there is something wonderfully extraordinary. Were a person accidentally to take up a book, in which it is gravely asserted, that in some countries there were certain animals which voided liquid sugar, he would lay it down, regarding it as a fabulous tale, calculated to impose on the credulity of the ignorant; and yet such is literally the truth. Mr. Curtis collected some on a piece of writing paper from a brood of the aphid *falicis*, and found it to be as sweet as sugar; and observes, that were it not for the wasps, ants, flies, and other insects that devour it as quickly as it is produced, it might, no doubt, be collected in considerable quantities; and by the processes used with other saccharine juices, might be converted into the choicest sugar or sugar-candy. The sweetness of this excrementitious substance, the glossy appearance it gave the leaves it fell upon, and the swarms of insects this matter attracts, led him to imagine the honey-dew of plants was no other than this secretion, which further observation has since fully confirmed; and not, as its name implies, a sweet substance falling from the atmosphere. On this opinion it is further remarked, that it neither falls from the atmosphere, nor issues from the plant itself, as is easily demonstrated. If it fell from the atmosphere, it would cover every thing it fell upon indiscriminately, whereas we never find it but on certain living plants and trees. We find it also on plants in stoves and green-houses covered with glass. If it exuded from the plant, it would appear on all the leaves generally and uniformly; whereas its appearance is extremely irregular, not alike on any two leaves of the same tree or plant, some having none of it, and others being covered with it but partially. As far as the writer's observation extended, there never exists any honey-dew but where there are aphides; though such often pass unnoticed, being hid on the underside of the leaf; and wherever honey-dew is observable upon a leaf, aphides will be found on the underside of the leaf or leaves immediately above it, and under no other circumstance whatever. If by accident any thing should intervene between the aphides and the leaf next beneath them, there will be no honey-dew on that leaf: and thus he conceives it is incontrovertibly proved that aphides are the true and only source of honey-dew.

Though no mode of destroying aphides will perhaps ever be devised on a large scale, in the open air, by artificial means, it can be accomplished most effectually when they infest plants in stoves, green houses, and frames, or any situation in which they can be enveloped for a certain time in clouds of smoke. Powders or liquids, however fatal to aphides, must ever be ineffectual, from the trouble and difficulty of applying them, so that they may come in contact with the insects. The smoke of common vegetables, however powerful, is found inadequate to their destruction, and the only one yet employed with success is that of tobacco.

bacco. They may for hours, or even a whole day, be immersed in water, and when taken out some will be living, and many of the rest will revive afterwards; they remain affixed to the plant in water as before, and their bodies assume a luminous appearance from the minute bubbles of air which issue from them. One experiment is mentioned, in which a green-house plant, with the pot it grew in, was immersed in the evening into a tub of water, and in the morning they appeared alive and well. When they are taken from the plant on which they feed, and are kept under water, they do not survive so long; their struggling in that case perhaps exhausts them sooner. It appears therefore, upon the whole, that they are extremely tenacious of life, and that wet is not so hurtful to them as might naturally be imagined.

Some curious remarks on the opinions that prevail respecting blights conclude the paper. Blights, he observes, originate from a variety of causes, the chief of which are unfavourable weather, and insects. Some imagine that the insects which are the cause of them are brought from a distance by easterly winds; and others, that they attach themselves to none but sickly plants; neither of which, so far as the writer has observed, are founded in fact; and he is induced to believe the aphides are by far the most general cause of the diseases distinguished by the name of blights.

APHLASTUM, from α and $\phi\lambda\alpha\sigma\tau\omicron\varsigma$, *frangible*, in the *Ancient Navigation*, a wooden instrument, shaped like a plume of feathers, fastened on the goose's or swan's neck used by the ancient Greeks in the heads of their ships.

The aphiastum had much the same office and effect in a ship that the crest had on a helmet. It seems also to have had this further use, *viz.* by the waving of a party-coloured ribband fastened to it, to indicate from what quarter the wind blew. The aphiastum was the proper ornament of the head, as the acrostolium was of the stern. The Greek aphiastum answered to, and was probably the origin of the Latin aplustre.

APHLE, in *Ancient Geography*, a town of Asia, in Chaldea, situate near the Tigris, where it borders on the Persian gulf.

APHNEUM, a town of Phrygia, near Cyzicum. Steph. Byz.

APHNEUM is also a town of Lydia.

APHONIA, in *Medicine*, the state of a person who is deprived of voice.

The word is compounded of the privative α , and $\phi\omega\upsilon\eta$, *voice*, q. d. a loss of speech or voice.

This is rarely an idiopathic affection, and may arise from a variety of causes; such as cutting the *recurrent nerves* which go to the larynx or glottis, where the voice is formed: or making an aperture into the trachea below the glottis, or any other mechanical injury to the parts.

Any fit may deprive the patient of the use of the organs of speech, as *epilepsy*, *apoplexy*, *paralysis*, or *hysteria*, may become a cause of aphonia.

When a person is suddenly seized with a loss of voice, and no cause appears, it generally indicates the approach of one or other of these attacks.

As all voluntary motion depends on the nerves and muscles of the respective organs, so whatever injures those of the tongue, or any of the other organs subservient to the formation of the voice, may induce aphonia.

Some other causes have been mentioned by medical writers, which are only accidentally so; such as the receding of cutaneous eruptions, inflammation of the tongue and fauces, spasmodic affections, worms, fear or joy, a crumb of bread, or any other extraneous substance sticking in the rima glottidis.

The *prognosis* will vary with the cause; the most obstinate cases are those which depend on a paralytic state of the nerves. As hysteria, worms, or extraneous matters, are commonly soon removed; so a disease depending on them may be deemed easily curable.

The *general indications of cure* are, to restore freedom to the nervous influence when impeded, and integrity to the organs themselves when wounded or otherwise disabled. The first indication is answered by the treatment of PARALYSIS; the second by the practice of *surgery*. *Particular indications* are taken from the cure of those particular diseases on which the aphonia depends, *viz.* HYSTERIA, EPILEPSY, WORMS, SPASM, &c.; which see.

APHORISM, a maxim, general rule, or principle of a science; or a brief sentence, comprehending a great deal of matter in a few words.

The word is derived from $\alpha\phi\omicron\rho\iota\zeta\mu$, *I separate*, q. d. a choice or select sentence.

The term is chiefly used in *Medicine* and *Law*. We say, the aphorisms of Hippocrates, of Sanctorius, of Boerhaave, &c.; aphorisms of the civil law, &c.

APHORISM is used, in *Ecclesiastical Writers*, for the lesser excommunication, by which the delinquent is cut off from the benefit of the sacrament and the prayers of the faithful; but allowed to bear a part in the rest of the service.

APHORISM is also used for a kind of figure in *Rhetoric*, whereby something that has been said is limited and corrected. This is otherwise called *diorismus*.

APHORISTIC, something relating to, or partaking of the nature of *aphorisms*.

The *aphoristic* method stands contradistinguished from the *systematic*, or methodical, as also from the *diexodic*, or discursive way.

The aphoristic method had great advantages, as containing much matter in a small compass; sentiments are here almost as numerous as expressions; and doctrines may be counted by phrases. Every thing is close and pertinent, allowing no room for useless discussions, or for languishing connections and transitions; there is hardly a word to be lost.

APHORMION, in *Ancient Geography*, a place of Bœotia, dependent upon Thespia, which, according to Steph. Byz. was the birth-place of Typhus, who superintended the construction of the ship Argo.

APHOSIATIN, in *Geography*, a part of Romelia in European Turkey, near the Black Sea, and not far from Constantinople to the north.

APHPHADENA, a town of Asia in Mesopotamia, near the Euphrates.

APHRACTI, from α , and $\phi\epsilon\alpha\lambda\omicron\varsigma$, *inclosed*, in the *Ancient Military Art*, denote open vessels, without decks or hatches, furnished only at head and stern with cross planks, whereon the men stood to fight.

The *aphracti*, or open vessels, stood contradistinguished from *cataphracti*, or covered ones.

APHRODISIA, in *Antiquity*, festivals in honour of the goddesses Αφροδίτη , or Venus. There were several of these *Aphrodisiæ* observed with lascivious ceremonies in divers parts of Greece: the most remarkable was that at Cyprus, first instituted by Cinyras, out of whose family certain priests of Venus were elected, and for that reason named *Κυπριαδαί*. At this solemnity several mysterious rites were practised: all who were initiated to them offered a piece of money to Venus as an harlot, and received as a token of the goddess's favour, a measure of salt, and a $\phi\alpha\lambda\lambda\omicron\varsigma$; the former, because salt is a concretion of sea-water, to which Venus was thought to owe her birth; the latter, because she was the goddess of wantonness.

Athenæus (Deipnosoph. l. xiii. c. 6.) informs us, that at Corinth their feasts were celebrated by harlots; and that they who supplicated the goddess were accustomed to promise to devote some women to her, in order to the obtaining of their requests. Erasmus observes in his Adagia, that this city was filled with courtlans; and that the verb *κοινοῦναι*, signified proverbially to surrender themselves to debauchery. See CORINTH.

APHRODISIA is also used for the age of venery, more frequently denominated *puberty*.

APHRODISIA, in *Ancient Geography*, a town of Thrace, to the north of the peninsula which joined the Chersonesus of Thrace to the continent, between Candia to the west, and Heraclea to the east.

APHRODISIA is also a town placed by Stephan. Byz. in Scythia, near the Euxine sea.

APHRODISIACE, in the writings of the ancients, a name given to a gem, supposed, according to the idle traditions of those times, to have a power of procuring love to the person who wore it about him; all the description we have of it is, that it was of a pale flesh-colour; but the stone, as well as its virtues, are wholly unknown to the world at present.

APHRODISIACS, in the *Materia Medica*, denote medicines supposed to be suited to excite the venereal appetite, or to increase the venereal powers. As there are no medicines of specific power for these purposes, the term seems, for the most part, to have been very improperly employed.

In which sense, *aphrodisiaks* stand contradistinguished from *antaphrodisiaks*.

Some authors give the appellation *aphrodisiaca* to the EPILEPSY.

APHRODISIAS, or APHRODISIUM *Promontorium*, in *Ancient Geography*, a promontory of Caria, near Cnidus.

APHRODISIAS, or *Aphrodisium, Gbeira*, is a town of Caria, towards the north-east, at the confluence of the Corfinus and Timelas.

An island of Libya.

Also, an island in the coast of Bætica, near Gades, and afterwards called *Erythia*.

Also, a town of the island of Cyprus, towards the north-east.

Also, an island in the gulf of Caramania, called by its inhabitants, according to Arrian, *Catæa*.

A town of Laconia.

A country of Asia, in the Eolide.

An island, now *Bona*, on the coast of Africa.

Aphrodisias and Aphrodisium were appellations given to several other places, which it is needless to mention.

APHRODISIUS, in *Chronology*, denotes the eleventh month in the Bithynian year, commencing on the 25th of July in our's.

APHRODITA, in *Natural History*, a genus of VERMES in the mollusca order; the character of which is, body creeping, oblong, covered with scales, and both sides furnished with bristly feet; mouth terminal, cylindrical; feelers two, setaceous and annulated; eyes four. Linn. Gmel. There are only nine species described by authors, and which are, aculeata, scabra, squamata, imbricata, plana, lepidota, cirrhosa, violacea, and longa.

APHRODITA *quarta*, is also the name of one of the marine VERMES in Hill. Hist. An. t. 5, and which has been since named by Linnaeus HOLOTHURIA PENTACTA.

APHRODITARIUM, in the *Ancient Pharmacy*, de-

notes a kind of dry medicine, compounded of frankincense, the scales of copper, celus, starch, and pomegranates, mixed in equal quantities.

The name is also given to a kind of *collyrium*, mentioned by Galen.

APHRODITE, in *Entomology*, a species of PAFILIO in the section Nymph. Phal. The wings are dentated, fulvous, with black spots: the under side of the posterior pair is brown, with 24 silver-coloured spots. Fabricius and Gmelin. This is a native of South America.

APHRODITE, in *Mythology*, a name of Venus, derived from *αφροσ*, *foth*, because, according to the poets, Venus is supposed to be produced from the froth or foam of the sea.

APHRODITES, in *Natural History*, a name given by some authors to the finest species of amethyst. See GEMMA *Veneris*.

APHRODITES, in *Ancient Geography*, the name of an island in the Arabian gulf, near Egypt, according to Ptolemy. M. d'Anville supposes that it was the island called *Sufange-ul-Bebri*.

APHRODITOIDES, in *Natural History*, a species of NEREIS found in the Greenland seas. The body is depressed, without furrows; and the peduncles furnished with cirri and papillæ. Gmelin and Fabr. The head is white, eyes and jaws black, tentaculæ four, two cirri in front, body pellucid; anterior part ochraceous yellow, the rest reddish, with two ferruginous lines along the abdomen. Sometimes, though rarely, it is green, with the ferruginous lines on the abdomen, and transverse reddish lines upon the back.

APHRODITOIS, a species of TEREBELLA that inhabits the Indian ocean; it is about a foot and an half in length, and consists of about 148 segments; the peduncles are fleshy, furnished with a cirrus, and two cirri at the head. The specific character is, body round, and gradually tapering towards the posterior extremity; beneath rather depressed, with an obsolete furrow; the first eight segments destitute of branchiæ, those on the three next simple, and the rest becoming gradually larger, and pinnated on one side. Gmelin, &c. This is nereis aphroditois of Pall. nov. act. Petrop, &c.

APHRODITOPOLIS, in *Ancient Geography*, the name given by Pliny and Ptolemy, to two, and, after them, by M. d'Anville, to three towns in Egypt; and each of the two former the capital of a particular nome. *Aphroditopolis*, in the Heptanomia, upon the right of the Nile, at some distance south from Memphis, is the capital of the 36th nome; and M. d'Anville supposes it to have been succeeded by *Asieb*; but Father Siccard imagines that it is *Bercubel*, a small place at a little distance to the south-west.

Aphroditopolis is also a town of Upper Egypt, and the capital of the 42d nome. This town lay to the left of the Nile, a little north of Ptolemais; and it seems to have been that which Pliny calls *Oppidum Veneris*. M. d'Anville supposes that *Iset* now occupies its situation.

Aphroditopolis belonged also to the nome of Hermonthites; and was situated on the left of the Nile, at a small distance north from Latopolis. M. d'Anville assigns it to the place where *Asfan*, or *Asfoun*, now stands.

APHRODITOPOLITES, a nome of Egypt, the metropolis of which is called by Ptolemy *Crocodylorum civitas*.

APHROGALA, from *αφρος*, *foth*, and *γαλα*, *milk*, in the *Ancient Physic*, denotes a kind of whipt cream, or milk, agitated til it be converted wholly into froth.

A P H T H Æ.

The aphrologa is directed by Galen, as proper against hot disorders of the stomach.

APHROLITRUM, in the *Ancient Physic*, denotes the spume or froth of *litrum*; and seems to amount to the same with *aphrenitrum*.

APHRONITRE. See NITRUM.

APHROSELENOS, among *Ancient Naturalists*, a denomination given to the *Selenites*, or *lapis specularis*.

APHTHÆ, in *Surgery*, from *ἄφθρα*, *incendo*, the *thrush*. By this term are denoted clear, white, pale, livid, painful spots, which appear in the mouth, fauces, and neighbouring parts, of various sizes and shapes; and which generally raise themselves into real vesications, filled with a clear or turbid yellow or bluish fluid. They attack every part of the cavity of the mouth, the trachea, œsophagus, stomach, and intestines: sometimes also they are found in the nostrils. Generally they appear at first in small white points, which are always preceded by a very sensible degree of heat in the mouth and breath of the patient, which gradually increase in size; and sometimes in the space of a few minutes, or more slowly, spread themselves farther, become elevated, and form vesications, which are either round or flattish, and stand either single or in groups. In some cases they soon burst open, or separate themselves at their base; and the contained fluid is either quickly discharged, or is absorbed; and they collapse, or wither away, as it were, and the detached cuticle forms wrinkled white spots, which frequently occupy a larger extent of surface. Sometimes they remain longer elevated, the contained fluid grows thick, and they fall off in scales of a darker yellow colour. Sometimes aphtæ are not of a white colour; for when the morbid matter has long continued its ravages in the system before assistance is procured, or if the aphtæ have not been discovered early enough, they are found sometimes ash-coloured, sometimes lead-coloured, blue, and black, according as either the vitiated humours, or the bottom of the sore, appears through the skin.

After a shorter or longer space of time, they generally detach themselves and fall off, upon which a moisture is seen to cover the ulcerated parts. When this becomes greatly accumulated, a salivation is commonly produced. If the parts do not soon become covered with a new skin, they begin to bleed, and to occasion acute pain. This separation sometimes takes place within a few hours, generally within twelve; sometimes also the sloughs remain for several days, and do not fall off at the same time, but one after the other, in different parts.

Frequently they disappear, but as frequently return again, according as there is a larger or smaller quantity of morbid matter which deposits itself in the mouth, and irritates it. Sometimes the internal surface of the mouth becomes covered with a perfectly white crust, produced by the coalescence of the separate aphtæ, whence a variety of inconveniences are produced; for the symptoms of the disease are exacerbated, and at length putrefescence and gangrene supervene, which takes place the sooner if there be fever at the same time present. In this state the patient can take no nourishment, as he cannot swallow even liquids without intolerable pain and anxiety; and should it be possible to get any thing down, it does not contribute to the nourishment of the body, so that the strength of the body wastes away, and death may at length terminate the sufferings of the patient.

Frequently the aphtæ appear as a primary or idiopathic disease; but more commonly they are symptomatic, or concomitants of other diseases. Some have also asserted, that they may be critical, which however is doubtful, or,

if they ever are so, it is only with adults. In the idiopathic aphtæ, the following symptoms are observed: they appear in children from a week to a fortnight old, sometimes also later. The infant becomes uneasy, sometimes sleeps much, sometimes little; he cries a great deal: his voice grows feeble, shrill, and hoarse; his respiration is very quick and difficult; his pulse uncommonly quick and small, with symptoms of irritation; his mouth, tongue, and the other neighbouring parts, are dry and very hot; this heat extends itself over the whole body without perspiration, and the patient becomes languid, feeble, and spiritless. The infant is very eager for the breast, where the mother feels an intolerable heat; but he is unable to suck, on account of the pain excited by the pressure of the nipple, and the exertion of the muscles requisite in the action of sucking; in consequence of which many infants die for want of nourishment, even before the thrush breaks out.

When aphtæ appear as symptoms or concomitants of other diseases, the febrile symptoms become exacerbated; and they are very apt to appear when the patient has been affected with a diarrhœa at the very commencement of the febrile attack. The patient is moreover troubled with constant nausea, a loathing of food and drink, and sometimes also with vomiting. He feels a sense of anxiety and weight at the pit of the stomach and in the thorax, especially if copious and frequent evacuations have preceded. He feels a sensation as if some hard substance stuck in his throat, especially when he swallows any liquid. If evacuations have been administered, and have produced a discharge of much mucus, bile, and other impurities, and the above mentioned symptoms continue, aphtæ certainly make their appearance. Finally, they are frequently prognosticated by a dulness and stupidity of the senses and understanding, during which the patient is much inclined to sleep, but his sleep is attended with a great deal of dreaming.

It is necessary that the physician or surgeon should be well acquainted with these symptoms, from which the appearance of aphtæ may be prognosticated; for whether they be idiopathic or symptomatic, they are always an unfavourable occurrence, and seldom unattended with danger.

When aphtæ actually make their appearance, they are attended besides with the following symptoms: shortly before they break out, or when they do break out, a sensation of heat and intolerable burning is felt in the mouth. The patient feels as if the whole cavity of his mouth were excoriated or ulcerated; and the slightest touch excites the most acute pain in it. If, at the same time the voice becomes hoarse, with a hollow tone, the fever and uneasiness increase, hiccup supervenes, the tongue becomes very red, with a sense of pain deep in the throat, or about the upper orifice of the stomach, we may conclude with certainty that aphtæ have already been formed in the stomach and œsophagus, which will gradually spread themselves higher up, till they appear also in the fauces. These excite singultus and vomiting, especially with infants. The evacuations by stool are very copious; and infants void, together with the other excrements, lumps of undigested milk. With this copious and preternatural alvine evacuation, fever is often combined during several days. As soon as the aphtæ have spread themselves over the whole internal surface of the mouth, they render mastication, suction, and deglutition extremely difficult to the infant, who therefore continually cries; and when he yawns, he is always affected with violent gripping in the belly, which is attended with a rumbling noise. When the aphtæ have completely broke out, they are accompanied also with a variety of symptoms of different kinds, of which we are to form our judgment, partly according to the colour of the aphtæ,

aphthæ, partly according to the symptoms and course of the disease, of which they are symptoms or concomitants.

The morbid matter by which the aphthæ are produced, is to be sought almost solely in the primæ viæ, where it is formed, particularly with new-born infants, when the first indispensably necessary purgation has been neglected, and also when in any other manner, either by the improper diet of the infant, or also by that of the mother or nurse, occasion has been given to the production of impurities in the primæ viæ. It is prejudicial to suffer the infant to sleep on the breast, as he then keeps some of the milk in his mouth, where it easily becomes spoiled.

This disease may also be produced by the infant receiving unwholesome milk. With many infants, therefore, we may prevent the production of aphthæ, by frequently cleansing their mouths, soon after birth, in order that none of the mucus may remain in them; by evacuating the contents of their intestines by proper purgatives; and by keeping them, in general, clean, and giving them wholesome nourishment.

In the cure of the aphthæ, our first object must be to examine whether they be idiopathic or symptomatic, as each species requires a distinct mode of treatment. The most important general indication of cure, is to endeavour to correct and remove the viscid, acrid, and offensive humours. For this purpose we may administer elder-flower tea, demulcent ptisans, with a little lemon-juice, emulsion of almonds, sweet milk, a dilute decoction of oats or barley, whey, &c. When the infant is affected with the aphthæ in his mouth, the mother or nurse should take these remedies; and, at the same time, it will be very beneficial to plunge the hands and feet of the infant frequently into warm water, or to apply either liquid or vapour-baths with elder-flowers, and other emollient herbs, wheat, bran, soap, &c. Emollient glysters, composed with the above mentioned substances, are particularly to be recommended, as the requisite remedies may thus be introduced into the body, without doing any violence to the mouth, fauces, and throat of the infant; besides that, this manner of administering remedies is the best adapted for infants, who generally neither can nor will swallow them.

The use of much animal food, and whatever can increase the alkaline tendency of the fluids, must particularly be avoided in the diet of the patient, as the quality of the morbid matter would thereby be increased. On the other hand, fresh air, a clean and warm chamber, frequent cleaning of the body, bodily motion, both with children and adults, the application of acidulous vapours, and other substances that sheath or neutralize the alkalies, also fixed air, are to be recommended. The diet of the patient ought in general to be liquid and light, but, at the same time, nourishing, consisting of bread-soups, barley-broth, sago, &c. Panada, made with bread, honey, and wine, boiled in water, is also a good article of food; but with respect to the wine, we ought to be very cautious, in order that we may not increase the irritation in fevers of an inflammatory nature, and when there is already too much irritation in the system. We may administer it more plentifully in diseases of debility and malignant fevers; and the same applies to all aromatic and other stimulant substances.

Our most important object here is to diminish the violence of the fever and the febrile heat. If the fever be an intermittent, cinchona, rad. bened., and other bitter and lightly astringent remedies are proper. In nervous, malignant, or putrid fevers, cinchona, contrayerva, arnica, camphor, and acidulous substances are indicated. But most frequently the fever is either of the inflammatory kind, or at

least it is attended with a considerable degree of febrile heat. In this case we may use warm drinks, a decoction of flor. samb. tilix with spir. vitriol. oxymel simpl. whey with tamarinds, cream of tartar, or other acidulous substances, succ. berb. and rub. itæor. diluted with water, emulsion of poppy seeds with nitre or sal. acetosell. essential; or also the following composition: R. Aq. flor. sambuc. tilix ãã ʒij. nitr. depur. ʒj. fyr. rub. idæi, or acetosell. citr. ʒj. M. D. S. A table-spoonful to be taken every two hours. Many of these remedies may be administered in the form of glysters; injections with sour whey are also particularly to be recommended.

Finally, we must moderate the heat by means of external applications, of which the most approved are the following. R. borac. venet. gr. xxx. folv. in aq. rub. idæi ʒij. adde fyr. rub. id. M. D. S. A sponge, a piece of linen, or a brush of lint to be dipt into it, and the mouth cleaned with it. We may also give a tea-spoonful of it every two or three hours internally, with great advantage. We may likewise administer from time to time aq. acetof. with syrup or honey. Also: R. spir. vitriol. ʒij. fyr. violar. ʒij. aq. commun. ʒiv. M. D. S. A table-spoonful to be taken every hour by adults, and a tea-spoonful by infants, also to be used for washing the mouth. We may also administer, particularly to young children, an ounce of house-leek juice (*sempervivum*), with an equal quantity of honey. Or, according to Mr. Starke, R. borac. venet. ʒj. fyr. moror. ʒj. fyr. papav. alb. ʒss. M. D. S. The mouth to be cleaned with a brush dipped in it.

Besides what has been already said, the following directions are particularly to be attended to: as soon as the idiopathic aphthæ appear, it will be very useful to administer a purgative, either of rhubarb or manna, with some neutral salt, or magnesia and rhubarb, with infants; but with adults, tamarinds and some neutral salt, or the infusion of fenna. When there are bilious or other impurities in the intestines, an emetic with tart. emet. is administered in a dose proportionate to the age of the patient; or with children, sulph. aurat. antim. or laxative glysters. If the patient already complains of great pain in the throat and œsophagus, or even in the belly, these remedies are altogether inadmissible. In the symptomatic aphthæ it depends upon the nature of the primary disease whether it shall be proper to administer any evacuant. Emollient and gently laxative glysters, however, will never do any harm. With these remedies the liquid ones first mentioned are to be combined.

When the aphthæ have actually made their appearance, the above mentioned draughts and remedies are to be administered; with children, frequent injections should be used, and the mouth washed with emollient decoctions, or with figs and honey of roses, or some other acidulous syrup, applied by means of a brush. But when it is observed that they extend lower down than the fauces, or even already form crusts and excite pain, they must be moistened, softened, and gently irritated. We may then apply to the aphthæ a decoction of carrots, or the expressed juice of boiled carrots, with honey of roses, by means of a brush; or we may let the patient swallow a tea-spoonful of this remedy in cases of internal aphthæ. Equally beneficial is also a decoction of the brassica rapa sweetened with sugar, or its expressed juice slightly boiled and sweetened with honey, and its efficacy will be increased if we rub down the peel together with the pulp; we may also use the juice expressed from it after having been roasted, mixed with honey of roses. With these remedies we should frequently wash out the mouth of the patient, or let him use them as gargles; and where there are internal aphthæ some of them must be swallowed down.

We may also boil the brassica rapa in veal broth, and let the patient eat it; and he may either drink the broth, or it may be administered in injections. Sem. lin. boiled in water, and mixed with honey of roses, or any other acidulous syrup, as also the compositions with borax, are very serviceable in these cases.

As external remedies we may use those that have just been mentioned with great advantage, as also the following: macerate sage in warm wine, add some honey, and let the patient's mouth be washed with it; this mixture may be applied to the mouths of infants, even though they should bleed; after which the mouth is to be washed again, by means of a brush, with syrup of mulberries, honey of roses, syrup of quinces, or the juice of four cherries, diluted with an infusion of sage, and two or three drops of the spirit of vitriol; or we may use white vitriol dissolved in barley-water, with the addition of honey of roses; and a decoction of rose-leaves with honey has also produced very good effects. The following remedy has likewise been recommended: ℞. mell. commun. ℥j. borac. vener. ℥ij. alum. ult. ℥fs. aq. rosar. ℥fs. M. D. S. To be applied to a brush, and the mouth cleaned with it. Finally, when the crusts will not separate, we may use the following composition: ℞. spir. cochlear. ℥v. succ. citr. press. ℥j. M. For washing the mouth we may use also the decoction of Peruvian bark.

When the apthæ at first appear discoloured and gangrenous, or become so in the course of time, we should use the following composition: ℞. terr. catech. ℥ij. coq. in aq. calc. lbj. ad rem. ℥viii. colct. add. sacch. saturn. ℥fs. mell. rosar. ℥ij. M. D. S. A table-spoonful to be taken every hour, held for some time in the mouth, and swallowed down slowly. Cinchona administered internally, in injections, and mixed with honey of roses, is likewise recommended. The same mode of treatment is to be pursued with the symptomatic apthæ.

When the apthæ slough off, and the parts become raw, sore, bloody, and painful, the following mucilaginous and gently astringent remedies are useful: mucilag. cydon. with aq. saliv. or ℞. aq. rosar. ℥ij. vitell. ovor. N^o ij. syr. papav. alb. ℥j. crem. tart. ℥fs. M. Also borax with syrup of poppies, emulsion of poppy seeds, and even opium triturated with mucilage of quinces, and diluted with water, may be used with advantage. But if the parts appear discoloured, or the pain in general has abated, we may administer the remedies mentioned just before, as they are of a more astringent nature, and tend to check inflammation and gangrene; also whey with vinegar, the juice of lemons and oranges, or oxymel; a decoction of hb. agrimon. & mel. rosar. is recommended, to which acetos. may be added; also Peruvian bark.

When the apthæ have sloughed off, both in the mouth and other parts, which we may know to be the case when any of them are voided by stool; when a sufficient quantity of strengthening remedies has been employed, which may be known by the abatement of the fever, and the absence of morbid matter in the humours; purgatives, and particularly those of a mucilaginous and tonic nature, are necessary; such as tamarinds, manna, rhubarb, or glysters made with these substances, in order that any impurities that may still remain in the stomach and intestines may completely be evacuated.

Sometimes, however, the apthæ, particularly the symptomatic, produce other peculiar symptoms; as in children, when they alleviate the other symptoms of the disease as soon as they make their appearance, in which case we must endeavour to promote the eruption by means of the above-mentioned decoction of brassica rapa, and other similar re-

medies. When the fever becomes of a malignant and putrid nature, cinchona, serpentaria, contrayerva, mullard with some sp. falis and mell. rosar., also butter-milk, are the proper medicines. When they are of a scorbutic or venereal nature, these morbid poisons must be counteracted by the appropriate remedies.

When the bowels are obstructed, we must loosen them by means of emollient glysters with chamomile flowers, decoction of oats, soap, or oil of almonds. Frequently a violent and exhausting diarrhœa comes on, which is to be checked by mucilaginous medicines, such as corn. cerv. gum arabic dissolved in barley water, with the addition of a quantity of saffron; the same end may also be obtained by means of opium, laud. liq. or tinct. opii and syr. passav. which the mother or nurse may also take; and some time after having taken it give the infant breast. Mucilaginous glysters with theriaca and soap are sometimes very effectual. When a troublesome and pernicious salivation comes on, it must first be treated with mucilaginous and gently astringent remedies, such as mucilag. cydon. aq. saliv. &c. and afterwards with stronger, such as a decoction of rad. tormentill. herb. agrimon. or granate with honey of roses.

The hiccup, with which patients are sometimes attacked, frequently ceases spontaneously; however, nourishing-mucilaginous remedies, combined with a little opium, will contribute much to remove it. With a view to restore the patient's strength, mild, light, and mucilaginous substances must be given him, in order that the stomach and bowels may again become used to food; e. g. barley-water, sago, salep, jelly, and even fenegal. When the stomach has become somewhat accustomed to the reception of these substances, the patient may gradually return to his former diet.

With adults, apthæ occur in various kinds of fever, but particularly in those autumnal fevers which commence with diarrhœa or dysentery, when the impurities of the bowels have not only not been evacuated, but have been detained by the medicines that have been used. Such apthæ have sometimes been observed to be epidemic; and they frequently appear in hectic fevers. The prognosis depends upon the nature of the disease which accompanies the apthæ, and the strength of the patient. It is an unfavourable circumstance when, after the apthæ have made their appearance, the fever returns, the pulse grows small and weak, and the appetite is not restored.

This species of apthæ is to be treated like the rest; but when they are accompanied with a putrid fever, we must be very cautious with regard to the use of evacuating remedies: antiseptic and other appropriate remedies should rather be administered, and these combined with the former. When the apthæ have separated, acrid and too stimulant medicines and food, as also cold air and drink, should be avoided; lest the former should excite inflammation or suppuration in the stomach and bowels, and the latter a new swelling of the mouth, and the most dangerous species of angina.

APHTHARTODOCETÆ, in *Ecclesiastical History*, a sect, sworn enemies to the council of Chalcedon.

The name is derived from ἀφθαρτος, *incorruptible*, and δοξα, *I imagine*; and was given them, because they imagined the body of Jesus Christ was incorruptible and impassible, and not capable of death.

They arose among the Eutychians, and made their first appearance in 535.

APHTHONIUS, in *Biography*, a rhetorician of the third century, wrote a work entitled "Progymnasmata Rhetorica," or Rhetorical Exercises; first published in Greek by Aldus, at Venice, in 1508; afterwards with Her-

mogenes and Longinus, in Svo. at Gen. vi. in 1569; and at Upsal, in 1670, by Scheffer, with a translation and notes. To the same author are ascribed Tables, printed with those of Besop, at Frankfort, in 1610. Suidas. Fabr. Bib. Græc. l. iv. c. 31. § 17. t. iv. p. 449.

APHYA, in *Ichthyology*, a species of CYPRINUS that inhabits in shoals the shores of the northern European seas. The body is pellucid; iris red; and the anal fin contains nine rays. Linn. Gmelin. Müll. According to Fauna Suecica, the dorsal fin contains ten rays; pectoral twelve; ventral seven; anal nine; and caudal nineteen. It is from an inch and an half to four inches and an half in length; is long, thick, round, and covered with scales of a moderate size; above the colour is brown, beneath white or red. Flesh white and savory. Upper jaw rather longest, iride of the eye yellow, encircled with red; lateral line along the middle straight; fins cinereous, greenish at the base.

APHYA is likewise a species of COMBUS found in the Nile and Mediterranean sea. The first dorsal fin has six rays; second sixteen; pectoral eighteen; ventral twelve; anal fourteen; and caudal thirteen. Body and fins barred with brown. Linn. Gmel. Art. &c.

APHYLLANTHES, in *Botany*, (*ἄφυλλος ἄνθος*, a flower without leaves). Linn. gen. 408. Schreb. 576. Juss. 44. Class, *hexandria monogynia*; nat. order of *tripetalicæ junce*, Juss.; Gen. character, *cal.* glumes univalve, lanceolate, several, imbricate; *cor.* petals six, ovate, spreading; *claws* slender, erect, converging into a tube; *stam.* filaments setaceous, shorter than the corolla, inserted into the throat, anthers oblong; *pisil.* germ superior, three-cornered, turbinate; *style* filiform, of the length of the filaments; *stigma*s three, oblong; *per.* capsule turbinate, triangular, trilobular; *seeds* ovate. Species 1, *aphyllanthes montpelienis*; root creeping; culms naked, simple, surrounded at the base with sheaths like the rush; glume two-valved, two-flowered. It grows wild near Montpellier, in barren and rocky places. This plant differs solely from the rush in having a corolla.

APHYLLON. See OROBANCHÆ.

APHYLLUS, formed of *α*, *priv.* and *φυλλον*, a leaf, denotes leafless.

APHYTEIA, a plant having neither root, stem, nor leaves (from *α*, and *φυτεω*). Linn. gen. Schreb. 1104. Amœn. Acad. S. 312. Supp. pl. 48. Hydnoa. Thunb. Act. Holm. 1775. 69. Class, *monadelphia triandria*. Generic character, *cal.* perianth monophyllous, semitrisfid, funnel-shaped, large, fleshy, erect, permanent; *corolla*s, rudiments of three petals, growing to the divisions of the calyx; *stam.* filaments connate at bottom, short; *anthers*, convex, cordate, striated; *pisil.* germ inferior; *style*, thickish, short; *stigma*, triangular, channelled; *per.* a berry, one-celled; *seeds*, numerous, netting. There is one species, *viz.* *Aphyteia hydnoa*, a vegetable without leaves, stem, or root; parasitical, terrestrial, consisting of a single fructification, which is four inches over, sessile, coriaceous, succulent; calyx large, with an erect trisfid border, white within, scutiform. The ripe fruit, which is not unpleasant to the smell, is eaten, both raw and roasted, by the Hottentots. Discovered by Thunberg at the Cape of Good Hope.

APHYTEIA, or APHYTIS, in *Ancient Geography*, a town of Thrace in the Pallena, a peninsula south-west of the Thermaic gulf. Plutarch relates, that when Lyfander laid siege to this town, Jupiter Ammon appeared to him, and ordered him to abandon it.

APIAN, PETER, in *Biography* an eminent astronomer and mathematician, called in German *Bienenwitz*, was born at Loifnich in Misnia, and became professor of mathematics at Ingolstadt, in 1524. He wrote several valuable mathe-

matical and astronomical treatises, and enriched astronomy with many instruments and observations. His first work was a treatise on "Cosmography, or Geographical Instruction," which was published in 1530, and several times republished, particularly by Gemma Frisius. In 1533, he constructed, at Nuremberg, a curious instrument, called from its figure, "Folium populi," which shewed the hour of the day by the sun's rays, in all parts of the earth, and even the unequal hours of the Jews. In 1534, he published his "Inscriptiones orbis;" and in 1540, his "Instrumentum sinuum, sive primi Mobilis," with 120 problems. In the same year his principal work, intitled "Astronomicæ Cæsarum," was published at Ingolstadt; and it contains many interesting observations, with the descriptions and divisions of instruments, calculations of eclipses, and the construction of them in plano. In the second part of this work, or the "Meteorologicum Planum," he describes the construction and use of an accurate astronomical quadrant, and he has annexed to it observations of five different comets, *viz.* those of 1531, 1532, 1533, 1538, and 1539, and here he has first shewn that the tails of comets are always projected in a direction opposite to the sun. The elements of the comet of 1532 were nearly the same with those of one observed 128½ years after, *viz.* in 1661, by Hevelius and others; hence Dr. Halley inferred that they were the same comet, and it was expected in the beginning of the year 1789. But astronomers, either through an error of Apian, or from some other cause, were disappointed. Apian was also the author of many other works, among which may be enumerated the "Ephemerides" from 1534 to 1570; "On Shadows;" "Arithmetical Centilogues;" "The Rule of Cos," or Algebra demonstrated; "On Gauging;" "Almanacs;" "On Conjunctions;" "Books of Eclipses;" "The Works of Ptolemy, in Greek;" the Works of Azoph," an ancient astrologer; "The Works of Gebre;" "The Perspective of Vitellio;" "Of Critical Days, and of the Rainbow;" "A new Astronomical and Geometrical Radius, with various uses of sines and chords;" "Universal Astrolobe of Numbers;" "Maps of the World, and of particular Countries," &c. &c. Apian was treated with great respect by the Emperor Charles V., who published several of his works at his own expence, conferred on him the honour of nobility, and presented him with 3000 crowns of gold. Apian, after a life devoted to study and the improvement of science, died at Ingolstadt in 1552. His son Philip, who survived him, was also an eminent astronomer, and taught mathematics both at Ingolstadt and Tubingen. He was born in 1531, and died in 1589. He has left a treatise on "Solar dials," and other writings. Tycho has preserved his letter to the Landgrave of Hesse, in which he gives an opinion on the new star that appeared in Cassiopeia, in 1572. Voss, de Scient. Montucla Hist. Mathem. tom. i. p. 623. Hutton's Math. Dict. Nonv. Dict. Histor.

APIARIA, in *Entomology*, a species of MUSCA. (Linn.) The anterior part of the thorax is yellow; abdomen black at the apex; tips of the wings ferruginous. Gmelin. This kind inhabits Italy, and somewhat resembles musca mystacea. The antennæ are feathered, front of the head, posterior part of the thorax and abdomen, except the apex, black. Wings obscure. Obs. This is SYRPHUS APIARIUS of Fabricius. Spec. Inf.

APIARIUS, a species of ATTELABUS; bluish, upper wings red, and three black bands; Gmelin. This is the clerus, with red wings, and three bluish bands of Fabricius; the clerus nigro-violaceus hirsutus, &c. of Geoff. Clerus ceruleo-violaceus of Degeer; and dermestes apiarius of Schranck. Found in Europe, America, and Siberia.

APIARY,

APIARY, from *apis*, a bee; a garden or place where bees are kept. The ancient as well as modern writers on bees agree in recommending a southern aspect as the most proper for this purpose; as a general rule bee-hives should be placed in situations that are little exposed to the wind, and enjoy as much of the influence of the sun as possible: as wind always retards the bees in their work, while the sun's beams invite them to it. Thus, though it be well known, that bees will thrive well in high and windy situations, a low one is obviously always to be preferred. In the vicinity of the apiary, there should constantly be abundance of flowers, from which the bees may collect their wax and honey. Mr. Bonner, a late writer on the management of bees, observes, that were a choice allowed him where to place his bees, it should be in an easterly situation, a hollow glen by the side of a rivulet, surrounded with abundance of turnips in blossom in the spring, mustard and clover in summer, and heath in the latter end of autumn and harvest; with a variety of other garden and wild flowers in their seasons. It is not, however, to be understood from this, that bees will not thrive unless they are placed in such an advantageous situation, as the contrary can, he says, be proved; for bees have thriven amazingly well in places where they were not within reach of any of the abovementioned flowers: but although they will do well in most situations, and fly far for their food, yet they will thrive far better when situated among or near good pasture, and surrounded with plenty of food, and Mr. Keys properly remarks that the hives should be clear from the droppings of trees and the annoyance of dung-hills, long grass and weeds, as by these means insects are bred which are not only destructive to the bees, but which greatly retard them in the preparation of honey. See **BEE**, and **BEE-HOUSE**.

APIASTELLUM, in *Botany*, the name of two different species of plants with different authors; Dodonæus expressing by it the common baum; and Apuleius the black bryony.

APIASTER, in *Ornithology*, a species of **MEROPS** found in Europe and Asia. The back is ferruginous; abdomen and tail azure green, the two middle tail feathers long; chin yellow. Linn. Gmel.

This is **MEROPS GALILAEUS** of Hasselquist, **ISPIDA cauda molli** of Kramer, **guépier** of Buffon, **schaeghaghli** of Forskal, and common **BEE-EATER** of English writers. Its length is about ten inches, of which the bill is an inch and three quarters. The pervading colours are green and blue, blending into each other; it has a few whitish feathers at the base of the upper mandible, and on the forehead a space of blue green, behind this another of green, and then succeeds the chestnut colour, tinged with green, and becoming paler on the back. From the bill to the back of the head is a black stripe that surrounds the eyes. Under parts of the body blue-green, palest on the belly. Lesser wing-coverts dull green, middle one rufous, and the greater ones an intermediate colour between both green and rufous. The legs are of a reddish brown, and the claws blackish.

It takes the name of bee-eater because those insects are its usual food; but it pursues and devours other kinds, as gnats, flies, and cicadae, on the wing, like the swallows; and at times will eat various kinds of seeds. Ray supposes, from its similarity to the king's-fisher, it may possibly feed on fish. Willoughby tells us on the testimony of Belon, "that its singular elegance invites the boys in the island of Candia, which it inhabits, to hunt for it with cicadae, as they do for those greater swallows called swifts, after this manner; bending a pin like a hook, and tying it by the head to the end of a thread, they thrust it through a cicada, (as boys bait a hook with a fly), holding the other end of the thread

in their hands; the cicada, so fastened, flies nevertheless in the air, which the merops spying flies after it with all her force; and catching it swallows pin and all, wherewith she is caught." Will. Orn.

APIASTRA, or American king-fisher. See **ALCEDO leucorhyncha**.

APIASTRUM, in *Botany*, a name given by the ancients to two different plants of such contrary form and qualities, that it is unlucky they should have given occasion of confounding them together, as mistakes about them might be of fatal consequence. The one of these plants was the poisonous *water-croxyfoot*; which they called apiastrum, because of its having leaves that somewhat resembled smallage. The other apiastrum is the common garden baum, so called by these writers, from their having observed that the bees were very fond of it.

APICALIS, in *Entomology*, a species of **PHALÆNA**, in form and size resembling *phalæna purpuralis*. It is a native of South America, and its specific character is, according to Fabricius, wings deep yellow, with a brown streak, apex obscure purple, with a yellow spot and two white dots on the margin. Obs. In the Linnæan arrangement, this insect belongs to the *pyralis* section of the *Phalæna* genus: Fabricius places it with the *geometræ*.

APICE, in *Geography*, a town of Italy, in the kingdom of Naples, and Principato Citra; seven miles east-south-east of Benevento.

APICES, SUMMITS, in *Botany*, the same with **ANTHERÆ**.

APICILIA, in *Ancient Geography*, a town of Italy, at some distance east of Concordia, in Carnia.

APICIUS, in *Biography*, a name rendered infamous by the gluttony and epicurism of three persons at Rome, to whom it belonged. The most notorious of these lived under Tiberius; and he is recorded as the inventor of several new sauces and delicacies, and as having kept, as it were, a school of gluttony at Rome. Seneca and Martial inform us, that he squandered away in the gratifications of the table an hundred million of sesterces, which, computed by Mr. Raper's rule for Imperial money (see **SESTERCES**), amounts to about 853,601 l. sterling; and when he found, that, after payment of his debts, he should have but a tenth part of this sum, he poisoned himself for fear of starving. Pliny describes him, in reference to some of the dishes of his invention, as "nepotum omnium altissimus gurgis," i. e. the deepest whirlpool of all spendthrifts. Athenæus (*Deipnos*, lib. iv. p. 168.) mentions another Apicius of similar celebrity, who lived about the year of Rome 660, and was the cause of the banishment of Rutilius. The third Apicius lived under Trajan; and having a secret for preserving oysters, he sent some perfectly fresh to the emperor as far as Parthia. A work "De re culinaris," is extant under the name of Cælius or Cæcilius Apicius, which is supposed to have been written at a later period. Crevier's *Rom. Emp.* vol. ii. p. 227 Gen. Dict.

APICULUM, in *Antiquity*, a kind of thread or fillet which the flammens wore, in the heat of summer, in lieu of the **APEX**.

Festus speaks of the *apiculum* as a cover for the *apex*; but the passage seems to be corrupt.

APIDANUS, in *Entomology*, a species of **PAPILIO** found in Surinam. The wings are tailed, blue; the lower ones, beneath brown, varied with blue; a double golden-coloured spot in the anal angle. Fabricius and Gmelin. Obs. In the Fabrician system it belongs to the **HESPERIA** genus; in that of Linnæus and Gmelin, it stands in the **PAPILIO** genus. (Section *Pleb. rural.*) The wings are edged with black and have a ferruginous spot at the base on the under side.

APIANUS, APIDANO, in *Geography*, a river of Europe in Turkey, which runs into the Peneus, near Larissa.

APIFORMIS, in *Zoology*, a species of MUSCA, found in Germany. It is lary and black; thorax at the base, and felt round the abdomen, yellow; tail whitish. See mark. Cinctus. Pupæ footy, gibbous, found in decayed trees. Obs. This belongs to the section that has the hair of the antennæ naked. There is likewise another insect in the same genus called AFFORMIS by Linnæ: it inhabits Germany; is downy; thorax black with white dots and lines; abdomen yellow with black lines.

AFFORMIS, is also a species of SPHINX, in the Linnæan system, and SERIA in that of Fabricius. The wings are transparent, abounded by low white back belts; thorax black, with two yellow spots on each side. Linn. Fab. It lives in the larva state in the trunks of willow trees. This is sphinx scapigea of Scopoli; sphinx crabroniformis, Wien. Schmett. and sphinx apiformis, hornet sphinx, Donov. Brit. Inf. tom. xxv.

APILAS, in *Ancient Geography*, a river of Macedonia, in Picia.

APINA, a town of Italy, in Daunia.

APION, in *Biography*, a learned grammarian and historian, was born at Oasis in Egypt, about the beginning of the Christian æra; and probably derived his name from Apis, the Egyptian deity. The character of Apion, whatever might be his talents or learning, was that of a pedant, who took pains in investigating and ascertaining matters of trifling importance. Accordingly he took infinite pains, and had even recourse to magic, in order to discover the country and family of Homer. He valued himself on having discovered that the two first letters of the Iliad, considered numerically, amounted to 48, and he fancied that the poet had used these letters designedly to express the number of books. Hence he also concluded that the opening of the first poem was last written. His arrogance and ostentation are justly reprehended by Pliny, when he says (Præf. in Nat. Hist.); "a certain grammarian, named Apion, whom Tiberius called the cymbal of the world, but who might more properly be styled the drum of public fame, boasted that he conferred immortality on those to whom he dedicated any of his writings; an arrogant boast which time has refuted; for all the works of Apion are lost; and his name only lives in the writings of others."

Having been admitted to the citizenship of Alexandria, whence he obtained the appellation of Alexandrinus, he was sent to Caligula as chief of the embassy which carried complaints to the emperor against the Jews; and, on the other hand, Philo and several other deputies were commissioned to justify their conduct. Apion executed his charge with much partiality and rigour, and instead of confining himself to the subject in dispute, preferred charges against the Jews of a foreign nature, which merely tended to exasperate the emperor; accusing them of refusing to consecrate images to him, and to swear by his name. He also wrote a work with the express purpose of fixing reproach upon them, which Josephus refuted in a direct reply "against Apion," which he also designed as an apology for his Jewish antiquities. He wrote, moreover, a learned treatise "On the Antiquities of Egypt," in five books, one of which is cited by Tatian. In this work he also treated so largely on the pyramids of Egypt, that Pliny (Nat. Hist. lib. xxxvi. c. 12.) mentions him as a principal authority on this subject. He also wrote "On the luxury of Apicius;" "On the Roman Tongue;" "On the knowledge of metals;" and on "Universal History." Gen. Dict. Nouv. Dict. Histor.

APIOS, in *Botany*, see GLYCINE and EUPHORBIA.

APIRA, or APEIRA, in *Ancient Geography*, a town mentioned by Homer, and supposed to be that called Apera or Adapera. M. d'Anville places it in Galatia, to the west of Tavium, and south of Halys.

APIRÆ, a town of Asia Minor in Lycia, situate near the sea coast of Andriæ, and south east of Myra.

APIS, MUSCA, the bee, or fly, in *Zytronomy*, a southern constellation, containing four stars; the principal of which is marked by the abbe de la Caille, in his catalogue of stars, for 1750, with 185° 30' 44" of right ascension, and 67° 45' 15" of south declination.

APIS, in *Entomology*, a genus of the HYMENOPTERA order in the Linnæan system, and thus defined in his *Système Naturel*, by Gmelin; mouth hard, jaw and lip membranaceous at the apex; tongue inflected; palpi four, unequal, and filiform, antennæ filiform, and short; wings flat; sting of the females and neuter acute and concealed.

The species are numerous, and divided into several families: in the first are these, linguaria, glauca, longicornis, tumulorum, clavicornis, farfarisqua, curvicornis, centuncularis, punctata, cinctæ, bombyleus, muscaria, hæmorrhoidalis, cineraria, anal's hæmorrhousa, mexicana, carbonaria, retusa, rufa, lunata, bicolor, villosa, pubescens, myllæca, tunetana, bicornis, maxillofa, florea, truncorum, floriformis, flavipes, dentata, cordata, varicolor, mellicica, disjuncta, rufipes, thoracica, flavifrons, cunicularia, argillofa, lagopus, musitans, pilipes, plumipes, manicata, florentina, iricos, maculata, flicica, interrupta, varia, rotundata, erythropus, ferruginea, trispinosa, quadridentata, lanipes, cæcitiens, tridentata, fasciata, barbara, conica, sexenctæ, quadricincta, annulata, smaragdula, albipes, ferruginata, bipunctata, cariosa, dimidiata, latipes, violacea, nigrita, caffra, africana, olivacea, carolina, terrestris, cryptarum, ruderata, nemorum, forocensis, horrorum, pratorum, lapidaria, sylvarum, bryorum, agrorum, muscorum, hypnorum, sibirica, fragrans, lincorum, brasilianorum, acervorum, subterranea, maiorum, furinamentis, virginica, hispanica, antiguenfis, americanorum, aestuans, tropica, fenilis, faminuda, alpina, leucorhoufa, chalcoptera, cyanoptera, melanocephala, grisea, collina, floralis, musciformis, lætuosa, degener, vespiformis, agillissima, fuliginosa, arvensis, fulva, * bryorum, convexa, cetii, leucozonias, leucostoma, hirta, bicincta, hemispherica, fulventris, noveboracensis, albifrons, vesparia, fericea, præcox, vespoidea, sphegoidea, minuta, sanguinolenta, leucopus, leucomelas, lutea, acuminata, fusciventris, nigriventris, cinerascens, lefkii, crocata, literata, nebulosa, fulvipes, annuus, fordida, lutescens, armata, denticulata, rufescens, lutulenta, chrysofoma, ochrocephala, ursina, nigricans, cana, triangulum, rostrata, canescens. The whole of this family is distinguished by a five-cleft tongue, and very short palpi; and are with few exceptions strictly apes of the Fabrician system. (Ent. Syst.) Also, for the character of his genus APIS is, *Os lingua inflexa, quinquefida, palpi brevissimi, antennæ filiformes*; and he includes nearly all the same species as Gmelin.

A trisid tongue is the chief criterion of the second section, which is again subdivided into two families, the first corresponding with the ANDRENA genus of Fabricius, and the second with the NOMADA of the same author. The species of the two subdivisions are these: in the first helvola, bicolor, tricolor, ma'abarica, æthiops, quadrifasciata, succincta, cingulata, virefcens, bidentata, gulosa, dichroa, hirtata, ciliata, zonata, marginella, ænea, labiata, cornuta, cærulefcens, maculosa, flavicornis, fascicornis, subvillosa, rubicornis, guttata. And in the second, fœcica, hattorfiana, gibba, fabriciana, variegata, agrellis, tuscicornis, lineata, scutellans, histrio, riparia, squalida, montana, minor, ranunculi, nufuta, tranquebarorum, morio.

“The industry of these little animals (says an ingenious writer), which is as profitable, as curious in itself, will always continue to excite the admiration of the wiser part of mankind.” Swammerdam, Reaumur, Hagllrom, D’Aubenton, Geoffroy, and others, have written their history with great accuracy. Swammerdam, above all, deserves to be read with the greatest attention. To these may be added the names of several later naturalists, who have bestowed uncommon attention upon their economy and manner of life, as will be more fully noticed in the article BEE, a term by which these creatures are better known to the English reader than that of apis.

In this general term it must notwithstanding be observed many creatures are included, which, in the opinion of naturalists, do not belong to the same family, or even genus. This is obvious on the slightest inspection of a few of the species so named; but whether, on the other hand, the characters laid down, by most of those naturalists, for ascertaining the different families and genera, are not rather more capricious than just, deserves consideration. It is certain that no two writers have yet agreed upon the same characters by which they are to be divided into sections, and each seems to have had his own system for their arrangement.

Linnaeus, to whom a comparatively small number of species was known, contended himself with dividing them into two families, one including those with smooth bodies, or with only a few hairs upon them, *apes proprie dictæ*, and the other *bomblinatrices hirsutissimæ*, with bodies very hairy. These subdivisions have been since found too vague and inapplicable for a number of later discovered species, and even for those Linnaeus had described; for, as Scopoli observes, the noise they make in their flight, and the hair on their bodies, increase so gradually, as to render it uncertain where the first family should terminate, or the second commence: and therefore he divides them in a different manner, into two sections, according to the form of the antennæ, which in some were straight, and in others bent, and forming an angle from the base, *antennis rectis*, and *antennis basi inflexis*; but he then perceived the insufficiency of his own system, as it would unavoidably exclude some species with which he was well acquainted, and for that reason he afterwards divided them into three distinct genera, *viz. eucera, apis, and nomada*.

Geoffroy, after Scopoli, gives this character of his *apes*; I. Abeille, antennes brisées, dont le premier anneau est très-long. Ailes inférieures plus courtes. Bouche armée de machoires, avec une trompe membraneuse cochée en dessous. Aiguillon simple et ca pointé. Ventre attaché au corcelet par un pédicule court. Trois petits yeux lisses. Corps velu. And these are divided into two families. Famille 1^e. Abeilles proprement dites. Corpore villosa. Famille 2^e. Abeilles—bourdons. Corpore hirsutissimo. These characters differ only in one exception from the *vespa* genus of the same author, in which, instead of the body being hairy or downy, it is glabrous.

Degeer divides the *apis* into two genera, *apis* and *nomada*: the first he defines, antennæ fractæ articulo primo longiori; os dentibus et rostro flexili fracto; sursumque plicato; alæ planæ; abdomen thoraci petiolo brevi adnexam; aculeus punctorius in abdomine reconditus; oculi reticulati ovales integri. And the second, antennæ clavate vel filiformes articulis duodecim; os dentibus et rostro porrecto vaginâ cartilagineâ cylindricâ; alæ planæ; abdomen petiolatum; aculeus punctorius in abdomine reconditus; oculi reticulati ovales uniti.

The Fabrician divisions of the *apes* are these: BEMBEX,

HYLÆUS, ANDRENA; APIS, EUCERA, and NOMADA. The character of his genus APIS is, os lingua, inflexa, quinquesida; palpi brevissimi; antennæ filiformes. Ent. Syst. (Tongue inflected, five-tooth; feelers very short; antennæ filiform.)

Gmelin, we think, should rather be commended than censured for the cautious manner in which he has adapted the improvements of the latter writer, to that of his great master, Linnaeus; for had he ventured to divide the genera, and destroy the distinctions Linnaeus had laid down, instead of endeavouring to reduce the newly discovered species to his arrangement, he would have incurred more blame than he has for avoiding it. Some may perhaps think he has been cautious to a fault, and not made those alterations that are absolutely requisite; the arrangement unquestionably demands some amendment.

Rocmer, in his “Genera insectorum Linnæi et Fabricii iconibus illustrata,” gives another definition of APIS, to which it is objected, he introduces more characters than are needful; some of them belonging only to certain families, are consequently not general distinctions. APIS os maxillis dentatis, atque *proboſcide inflexa*, vaginâ duabus bivalvibus linguam includentibus. *Capite triangulare*, fronte plana, flexum. *Antennæ sæpe pedatæ*, primo articulo reliquis longiore. *Alæ planæ*, in omni sexu. *Aculeus punctorius reconditus*, retractilis, ferratus, feminis et neutris. *Tarsi quinque articulis*, primo longitudine tibiæ, compresso, ciliato, transversim sulcato. P. 28.

M. Latreille, about six years since, published a work at Paris, intitled, “Précis des caractères généraux des insectes, disposés dans un ordre naturel,” in which the characters are taken from the antennæ, labium superius, mandibulæ, lingua, maxillæ, tubus and palpi. The APIS, which, like Fabricius, this writer places between nomada and eucera, is thus briefly described; APIS, langue de trois piéces. (Organes de la nutrition plus petits dans les mâles.)

The latest treatise on *apes* is that of the Rev. Wm. Kirby, entitled “Monographia Apum Angliæ,” a book we shall advert to more fully hereafter. It is an attempt to divide into their natural genera and families such species of the Linnaean genus APIS as have been discovered in England; but the introductory and collateral remarks take a wider range. By way of illustration, these include many observations on the class *hymenoptera*, to which they belong; and a comparative view of the exotic species analogous to those he describes. Mr. Kirby first reviews the several characters of the genera into which different authors have divided *apes*, and after pointing out imperfections in each, proceeds to offer an arrangement altogether distinct from either.

His two genera are MELITTA, and APIS: the essential character of the first is, *aculeus punctorius; lingua apice brevis, porrecta, planiuscula, vaginâ subcylindricâ*; and of the second, *aculeus punctorius; lingua elongata, inflexa*. To each of these are added an artificial and a natural character. The artificial character of MELITTA is *os proboſcide subcylindricâ, porrectâ linguam brevem, planiusculam, exerente. Antennæ mediæ, aculeatis subelavate articulis 13; maribus filiformis, articulis 14. Oculi laterales, sub ovales, integri. Alæ planæ. Aculeus punctorius, reconditus*. That of APIS is *os proboſcide fractâ, inflexâ, linguam cylindricam, elongatam, exerente. Antennæ mediæ, aculeatis articulis 13; maribus articulis 14. Oculi laterales, sub ovales, integri. Alæ planæ. Aculeus punctorius reconditus*.

After stating these characters of the two genera MELITTA, and APIS, Mr. Kirby proceeds to mention the distinctions which divide them into families; in which his aim, as he observes, has not been so much to fix upon artificial characters,

acters, which often disunite those insects which nature has put together, but to discover whether the all-wise author of nature, who is a God of order, has not subdivided these genera, and impressed certain common characters upon such subdivisions, by which one who studies his works under no influence but a love of truth, and led by a single desire of finding out *his* system, might not be enabled to arrange them according to their natural affinities.

His first step was to place together all those individuals which appeared to agree in habit, adopting the sentiment of Linnæus, that habit would often lend a clue to discover nature. This led him at first to commit many mistakes; for relying solely on habit for the arrangement of species, he often placed the males in one subdivision, and the females in another; he however succeeded to arrange them very nearly according to their natural affinities, and by attending to the proboscis, and external anatomy, was enabled to detect the constant characteristics of the males in these genera, exclusive of their *genitalia*; and by further observations on those he had an opportunity of taking alive, and inspecting these parts, the mistake alluded to was in a manner rectified, and instead of confusion, lucid order now took place in the arrangement. "Thus (says the author) beginning with habit, and ending with anatomy and economy; descending from generals to particulars, and then tracing back my steps from particulars to generals; using both the synthetical and analytical modes of reasoning, as mathematicians speak, by a series of observations and experiments frequently repeated, I was enabled to trace the labyrinth of nature, and, by the assistance of this double *filum ariadneum*, to establish my system upon a sure basis."

The distinctions of these two families are as follow:
 MELITTA.—* *Lingua* obtusâ,—a. *lingua* obtusâ, apice bilobâ.—b. *lingua* obtusâ, apice truncatâ.—* *Lingua* acutâ.—a. *labio* inflexo, emarginato.—b. *labio* appendiculato, appendiculâ inflexâ.—c. *labio* obtusangulo, tuberculo munito.—APIS.—* *Proboscide* laciniis exterioribus nullis.—a. *Antennis* subclavatis in omni sexu.—b. *Antennis* filiformibus in omni sexu.—* *Proboscide* laciniis exterioribus instructâ.—a. *Palpis* exterioribus 5-articulatis. *Labio* subquadrato.—b. *Palpis* exterioribus exarticulatis. *Labio* anticè curvo.—c. *Labio* inflexo, elongato.—1. *Ventre* femineo glabro.—a. abdomine femineo conico, acutissimo.—β. femineo subeylindrico obtuso.—2. *Ventre* femineo hirsuto.—a. *Palpis* omnibus biarticulatis.—β. *Palpis* exterioribus exarticulatis.—γ. *Palpis* interioribus exarticulatis.—δ. *Palpis* exterioribus 4 articulatis.—d. *Proboscide* rectâ, apice subulato-conicâ; palpis exterioribus 6-articulatis.—1. *Laciniis* interioribus involutis, exteriorum longitudine.—2. *Laciniis* interioribus rectis, quàm exteriores brevioribus.—a. *Labio* quadrato inermi.—β. *Labio* emarginato, tuberculo munito.—c. *Proboscide* subinvolutâ, palpis exterioribus exarticulatis.—1. *Corpore* villosulo.—2. *Corpore* hirsutissimo. Each of these families Mr. Kirby illustrates with figures, in his *Tabularum Explicatio*, and refers all the species he describes to their proper situation in his synopsis specierum, in conformity with this system.

From this comparative view of the different arrangements offered by naturalists for the distribution of BEES into distinct genera, subdivisions or families, it evidently appears a task of some difficulty to point out the true and invariable characters by which they may be arranged with the greatest propriety. Mr. Kirby has done much in behalf of a new mode of arranging them; he has pursued this subject with no common assiduity and skill, and furnished us with an admirably curious treatise, the result of his useful and well-directed labours. Of his accuracy in ascertaining, and integrity in delineating the characters he has chosen, there can

be no distrust; and perhaps there can exist but one objection to his mode of arrangement, and that arises from the difficulty in some instances of perceiving them. All his descriptions were taken, as he himself says, from insects viewed under a lens; an advantage no doubt to him in defining those characters with fidelity, but which at once implies that they are minute, and the lamentable errors he points out by that means in the observations of his predecessors on those parts, prove sufficiently they are ambiguous also. Every naturalist will blame Fabricius for having taken his characters too frequently from the mouth, *Instrumenta cibaria*, and other minute and complicated parts; because, except in recent specimens, it is difficult, nay often impossible to ascertain his distinctions of genera and families, without injuring or destroying the very parts he describes, and frequently not then. Mr. Kirby has, we may believe, endeavoured to avoid this error as far as the subject would permit; and we must only regret that in such able hands, some characters less complicated and minute than those sometimes adopted by him, could not have been found for the arrangement of this curious tribe of creatures.

APIS, in *Geography*, a town of Egypt, on the banks of the lake Marcotis, not far south from Marea. It is mentioned by Herodotus; and Pliny says, it is 62 miles from Paratonium. South-east of this town, and at some distance from the sea, was a mountain of the same name.

APIS was also, according to the Scholiast of Apollonius, a small island near that of Crete.

APIS, in *Mythology*, a symbolical deity, worshipped by the Egyptians in the whole country, and particularly at Memphis. It was an ox, having certain exterior marks, in which animal the soul of the great Osiris was supposed to subsist. This animal was preferred to others, as being the symbol of agriculture, which Osiris had found out, and to the improvement of which he was zealously devoted. He was so famous, that all who visited Egypt had the curiosity to see him, and to render him respect and homage. Alexander conducted his army to Memphis, and according to Arrian, sacrificed to all the gods, and more especially to Apis. Pliny says, that when Germanicus was in the east, he consulted Apis; and the same curiosity which induced Augustus to visit Memphis, induced Titus, Adrian, and Septimius Severus, to follow his example. Apis was an object of worship, not merely on account of his divinity, but because he was consecrated in a peculiar manner to the sun and moon; that is, to Osiris and Isis. Suidas and Ammianus Marcellinus mention his consecration to the moon, and Porphyry expressly says, that this animal bore the characteristic signs of these celestial luminaries. The marks or characters, by which this sacred bull was distinguished from others of the same species, were, his black colour, a white square mark upon his forehead, the figure of an eagle on his back, a lump under his tongue resembling a beetle, and a white spot in the form of a crescent on his right side. These marks were obviously the contrivance of the priests, who secretly brought up the calf that was intended for the Apis. This sacred animal was not produced by the ordinary laws of generation. The Egyptians ascribed his birth to celestial fire; and, as Pintareh informs us, the priests pretended that the moon diffused a generative influence; and that as soon as the cow to whom it was imparted took the bull, she conceived an Apis. When a calf was produced in these circumstances, and with the appropriate marks, the priests announced to the people the birth of Apis. Accordingly, says Ælian (de Anim. lib. xi.), they built a temple to the new god, facing the east, in pursuance of the order of Mercury, and nourished

nourished the young calf with milk for four months. At the close of this period, and at the time of the new moon, the priests repaired to his habitation, and saluted him with the name of Apis. He was then placed in a vessel magnificently decorated, covered with rich tapestry and resplendent with gold, and conducted to Nilopolis, a city of the Nile, with hymns and perfumes. Here they kept him for 40 days, and suffered only women to visit and examine him. After the inauguration of the god in this city, he was conveyed to Memphis with the same retinue of priests, followed by a great number of boats sumptuously adorned. From this time he became sacred to all the world. He was superbly lodged, and the place where he lay was mystically called "the bed." The edifice in which he was kept, and which is particularly described by Strabo (lib. xvii.), was situated near the temple of Vulcan; in a court of which he was occasionally presented to gratify the curiosity of strangers; and he might be seen at all times through a window; but it was the office of the priests to produce him to public view. Once a year, say Pliny, Solinus and Ammianus, they presented a heifer to him, which they killed on the same day. This bull, to which supernatural knowledge was ascribed, is said by the priests to have predicted future events by certain signs and motions, which they interpreted according to their own fancy. Pliny says (lib. viii.), that he had two temples called "beds," which served as an augury to the people. When they came to consult him, if he entered into one of these, the omen was favourable; but if he passed into the other, unpropitious. He also gave answers to individuals, by taking food from their hands; and Ammianus says, that he refused that which was offered him by Germanicus; and that this unfortunate victim of the jealousy of Tiberius was soon after poisoned. The worship that was offered to this deity was very solemn. The people assembled to offer sacrifices to him, and oxen were selected for the victims on this occasion. In every part of Egypt feasts were consecrated in honour of him, and particularly in honour of his birth: they were called "Theophania," the apparition of God, and lasted seven days. "What festivals! (says Ælian) what sacrifices take place in Egypt at the commencement of the inundation! At this time all the people celebrate the birth of Apis. It would be tedious to describe the dances, the rejoicings, the shows, the banquets, to which the Egyptians abandon themselves on this occasion, and impossible to express the intoxication of joy which breaks forth in all the towns of the kingdom."—"During the seven days in which the priests of Memphis celebrate the birth of Apis" (says Ammianus), "the crocodiles forget their natural ferocity, become gentle, and do no injury." This sacred bull, however honoured, had a fixed term assigned to his life: at the termination of 25 years, the priests drowned him in the Nile; and as Pliny says, in the fountain of the priests. This number was the product of five by itself, and gave the number of the letters of the Egyptian alphabet, as well as the age of Apis: and this number marked a period of the sun and moon, to which luminaries the bull was consecrated. Hence it has been inferred, that Apis was the tutelary divinity of the established form given to the solar year, which was to consist invariably of 365 days, and of the cycle of 25 years, discovered at the same time. "Nor can it be doubted," says Savary (Letters, vol. ii. p. 472.), "that he had a marked relation to the swelling of the Nile, for it is testified by a great number of historians. The new moon which followed the summer solstice was the zera of this phenomenon."—The crescent on the right side of Apis indicated, according to Ælian, the commencement

of the inundation. "If Apis," continues Savary, "possessed the characteristic signs which proved his divine origin, he promised fertility and abundance of the fruits of the earth. It seems demonstrated, therefore, that this sacred bull, the guardian of the solar year of 365 days, was also regarded as the genius who presided over the overflowing of the river. The priests, by fixing the course of his life to 25 years, and by making the installation of a new Apis concur with the renewal of the period now mentioned, had probably perceived, as the result of long meteorological observations, that this revolution always brought about abundant seasons. Nothing was better calculated to procure a favourable reception of this emblematical divinity from the people, since his birth was a presage to them of a happy inundation, and of all the treasures of teeming nature." The name *Api* in the Coptic language signifies number, and seems to have referred to the number of cubits which marked the increase of the Nile, that was most advantageous for the fertility of Egypt.

When Apis died, he was embalmed and privately deposited in the subterraneous cavern destined for this purpose. If he died a natural death before the expiration of 25 years, the priests publicly proclaimed his death, and solemnly conveyed his body to the temple of Serapis, at Memphis. Strangers were forbidden to approach the temple, and the priests entered it only when Apis was interred. It was then, says Plutarch, that they opened the gates called *Lihé* and *Coeyté* (of oblivion and lamentation), which are said to have made a harsh and piercing sound. On occasion of the death of Apis, Egypt resounded with the cries and lamentations of those who bewailed it, and the whole country put on mourning. To this purpose Tibullius says, (Eleg. i. 8.)

"Te canit atque suum pubes miratur Osirim,
Barbara, Memphiten plangere docta bovem."

Lucian also represents this circumstance in his usual pleasant manner. "When Apis dies, is there any one so enamoured of his long hair as not immediately to cut it off, or to display on his bald head the symptoms of his sorrow?" This distress and mourning continued till the people had obtained another Apis. Darius Hystaspis, being at Memphis on an occasion of this kind, and observing the consternation of the town, offered 100 talents of gold to any one who discovered a new Apis. Polyænus, Strat. vii. Jablonski, in his "Pantheon Egyptiorum," and M. Huet, bishop of Avranches, and some others, have endeavoured to prove, though not with much success, that Apis was a symbolical image of the patriarch Joseph, and appointed for the commemoration of him. But the hypothesis, that Apis and his worship were symbolical of the Nile, and the circumstances attending it, seems to be more probable. The particulars that have been already recited afford a strong presumption to this purpose. The kind of animal that was selected favours this opinion; for rivers were anciently represented by bulls or oxen. Plutarch says expressly (De Iside & Osiride, Oper. tom. i. p. 66.) that the ox was in Egypt the symbol of the earth. All the mystic phenomena that attended the birth, growth, character, death, and worship of Apis, bore an obvious reference to the agriculture of Egypt, and the fertility occasioned by the inundation of the Nile.

Dr. Bryant apprehends that the name of Apis was an Egyptian term for a father, that it referred to the patriarch Noah, and that the crescent, which was usually marked on the side of the animal, was a representation of the ark. Anc. Mythol. vol. ii. p. 420.

Jablonski (*ubi supra*) fixes the zera of the consecration of the

the first Apis at the year 1171 before the vulgar era of Chool; a d, according to the same writer, it ceased at Memphis, under the reign of Thebes, together with that of Sais, at Alexandria; and he assigns a period of 1535 years for its whole duration.

Apis is represented on the Greek medals in the form of a bull, with a flower of the lotos, the water-lily of the Nile, supposed by Microbius to be a symbol of the creation. On the medals of Adrian and Antoninus Pius, struck in Egypt, and on a marble preserved in the cabinet of Odel-chalene, he is delineated with the crescent on his side.

APIS, in *Falubus History*, the son of Phoroneus, second king of Argos, who settled in Egypt, according to the fables of the Greeks, and made himself so famous, that after his death he was ranked among the gods, under the name of SERAPIS.

APIYANI, in *Ancient Geography*, a people of Arabia Felix, according to Pliny.

APITES VINUM, from *απις*, the pear tree; *περυσ*, wine of pears. See PERRY.

APIUM, (perhaps from *Apes*, bees, because these insects are found on it,) in *Botany*, a genus of plants, including parsley, smallage, and celery. Lin. Gen. 167. Schreb. 429. Juss. 219. Chas. *pentandria digynia*; natural or fewer of umbellata, gen. character, *cal. general* umbel of several rays than those of the partial; *general* involucre small, of one or more leaflets; *partial* similar; *proper perianth* obsolete; *cor. general* uniform; *stamules* almost all fertile; *petals* roundish; *inflex*, equal; *filam.* filaments simple; *anthers* roundish; *pist.* germ inferior; *styles* reflex; *stigmas* obtuse; *per.* none; *fruit* ovate, striate, splitting in two; *seeds* two, ovate, striated on one side, plane on the other. Ell. gen. char. *fruit* ovate, striated; *invol.* one-leaved; *petals* equal.—Species 1. *A. petroselinum*, common parsley, stem leaflets linear; involucre minute; the stems are round, smooth, striated. At the origin of the universal umbel there is usually one leaflet, and an involucre of six or eight short folioles, almost as fine as hairs, at the partial umbel. Flowers pale yellow, regular; petals small, long, narrow, acornate, inflex. It is a biennial plant, and generally cultivated for culinary purposes. Linnæus found it growing wild in Sardinia. The varieties of parsley are *α. A. sativum*, common garden parsley. Word. Med. B. t. lxxiii. *β. A. crispum*, curled parsley. *γ. A. latifolium*, large rooted parsley. *δ. A. graveolens* smallage, or wild celery, stem leaves wedge shaped. This is also a biennial plant, rising with a smooth, shining, deeply furrowed stem; leaves alternate, radical, pinnated, ternate; pinnae trifid, gash-ferrate, shining, smooth; umbels axillary; with about fifteen unequal rays; flowers small, white; seeds minute. It grows wild in ditches and marshes, in which state it is acid and fetid. Smith's Flor. B. 535. Miller states the varieties of this plant as follow; *β. A. dulce*, upright celery; *γ. A. rapaceum*, celeriac or turnip-rooted celery; *δ. A. hispanicum*, Portugal celery.

In regard to the medicinal properties of parsley, Doctor Woodville, in his Medical Botany, remarks, that both the roots and seeds are directed to be employed by the London College; the former of which have a sweet taste, accompanied with a slight degree of warmth, or flavour resembling that of a carrot; but that the latter are warmer in taste and more aromatic than any other part of the plant, and also manifest a considerable degree of bitterness. In distillation, three pounds were found to yield above an ounce of essential oil, a great part of which sunk in the fluid. They give out little of their qualities by infusion in watery menstrua, but readily impart all their virtue to rectified

spirit. The roots by distillation in water were ascertained to afford but a very inconsiderable portion of essential oil, not more than two or three drachms from as many hundred pounds. These roots are said to be aperient and diuretic, and have been employed in apozems, to relieve nephritic pains, and obstructions of urine. In this way they have been preferred by Dr. Cullen, without producing any diuretic effect; and this, he thinks, may in some measure be attributed to the loss of their active matter, which they sustain by boiling.

The seeds, like those of many other umbelliferous plants, possess a strong aromatic and carminative power; but as this is inconsiderable, they are now seldom employed. They are stated, it is observed, to have been advantageously made use of externally for removing cutaneous diseases in children, by Con. Mich. Vekinski, in Act. Nat. Cur. vol. 1. p. 287; and by Rosenfeld in Bur's Junkd. ed. 3. p. 533.

The bruised leaves have been successfully made use of as a discutient poultice to various kinds of tumours. We are told, Dr. Woodville says, by Large (Misc. Ver. t. Med. p. 26), that this application has succeeded in scirrhus tumours where cicuta and mercury have failed.

Although parsley is so commonly used at table, it is remarkable, says the above writer, that facts have been adduced to prove that in some constitutions it occasions epilepsy, or at least aggravates the epileptic fits in those who are subject to this disease. It has been supposed also to produce inflammation in the eyes.

APIUM *Macedonicum*. See PUBON.

APIUM *petraeum* and *montanum*. See ATHAMANTA.

APIUM, *Pyrenaicum*. See CRITIMUM.

APIUM, in *Gardening*, comprehends parsley, celery, and smallage, of which there are several species cultivated in the kitchen-garden; as the *A. petroselinum* or common parsley, which has two varieties, the common plane-leaved, and the curled-leaved; the *A. latifolium*, or broad leaved, large-rooted parsley; the *A. dulce*, sweet, or common upright celery; of which the following varieties are cultivated: the common upright, with the stalks of the leaves hollow or fistular; the common upright, with the stalks of the leaves solid, generally known by the names of hollow and solid celery, the *giant upright*, that grows very tall, with a large body of thick fleshy leaf-stalks; the *A. rapaceum*, or turnip-rooted spreading celery or celeriac; and the *A. graveolens*, or smallage; all of which are herbaceous plants, of hardy growth, and of the biennial tribe, or of two years duration, producing only leaves the first year, but attaining perfection for kitchen and other domestic uses. The second spring they however, shoot up stalks, flower, and perfect their seed; and in autumn perish both in root and branch, so that they continue useful only one year, and therefore a fresh supply must be raised annually from seed. Some of the species may, however, be deemed annual, as if sown very early, they run to seed the same year, especially in the celery kind.

Of the *A. petroselinum*, or common parsley, both the varieties are in use; but it is remarked by the authors of the Universal Gardener, that the plane-leaved sort is most commonly cultivated, though many prefer the curled kind, because its leaves are much easily distinguished from the *achusa*, or d's parsley, a sort of hemlock, and a poisonous garden-weed, which, while young, has great resemblance to the common plane-leaved parsley. Besides, the curled parsley, from its having larger and thicker leaves, and being curiously fabricated and curled, so as to show full and double, makes a better appearance in its growth, and is

more esteemed by cooks for the purpose of garnishing dishes, &c. It may, however, be necessary to remark, that this sort, as being only a variety, is liable to degenerate to the common plane sort, unless particular care be taken to save the seed always from the perfect, full curled plants. Both the varieties are propagated by seed sown annually in spring, where the plants are to remain; but the plants, as has been seen, are biennials, rising from seed sown in March, April, and May.

The proper season for sowing the different varieties, is any time from the beginning of February until the beginning of May; but they will grow at almost any time of the year; however, in order to have the plants come into use by the time the old parsley begins to run, it is necessary to sow first about the time just mentioned. The best method for which is in drills, as it will be thus not only more conveniently kept clean and more easily gathered, but have a neater appearance. Where only a sufficiency is required for the supply of a family, it may be sown in single drills along the edges of the borders, or the quarters of the kitchen-garden, the plants thus serving the double purpose of utility and edging; but for the supply of markets, gardeners generally sow it in large plats, either in broad-cast, raking it in, or in shallow drills, at eight or nine inches distance from each other, trimming the earth evenly over it, near half an inch deep, and then lightly raking the surface, to give it a degree of smoothness. Seed of this kind is extremely slow in vegetating, sometimes not appearing in less than a month or five weeks from the period of its being sown.

The chief culture the plants require while growing, is to be kept clean from weeds; and when they grow faster than wanted, which is often the case in private gardens, to be cut down close. This should be constantly practised in autumn, as about Michaelmas, or in sufficient time for the plants to recover before the winter sets in.

In order to save the seed, some rows of the one year old plants must be permitted to stand, and shoot up their stalks, which is done in May and June following, the seed being ripened in July and August.

A. latifolium, or broad-leaved parsley. The propagation of this species is also by seed sown annually in February, March, or April, where the plants are to remain. For this purpose, a spot of light rich earth, in an open exposure, is to be preferred; the seed being sown broad-cast, and raked in, the plants generally appearing in about a month after being sown, and in May or June they require to be thinned and cleared from weeds, which may be performed either by hand or hoe; but the latter is most eligible, as it will stir and loosen the surface of the earth, which may be beneficial to the plants, cutting them out to about six inches distance from each other.

In the latter end of July, the roots will mostly have attained a size proper for use; and may be drawn occasionally; but they seldom acquire their full growth till about Michaelmas.

This is sometimes called *Hamburg parsley*, probably from its being much cultivated about that place.

It is chiefly cultivated and esteemed for its large roots, which are white and carrot-shaped, being long, taper, and of downright growth, often attaining the size and appearance of the middling parsneps; they boil exceedingly tender and palatable, are very wholesome, and may be used in soup or broth, or to eat like carrots and parsneps, or as sauce to both meat.

A. dulce, or the common celery. The method of propagation in all the varieties of this sort is, by sowing the seed in the spring, and when the plants have attained six or eight inches in height, transplanting them into trenches in the

manner described below, in order to be earthed up on each side as they advance in growth, and have their stalks blanched or whitened, to render them crisp and tender.

As plants of this kind continue useful only one year, a fresh supply must be raised annually, as has been already observed.

The proper periods of sowing, if a regular succession of plants be required for eight or nine months in the year, are at two or three different times from the beginning of March till the middle of May. As, for example, if it is intended to have celery for use as early as possible in the summer, as in July, some seed must be sown the first week in March on a warm border; or to bring the plants more forward, in a slender hot bed; or if it be necessary to have it still more early, the middle of February; but as the plants of these very early sowings are apt to pipe or run for seed the same year, before they attain their perfection, a few only need be raised. But for the principal crops, to come in for autumn and winter, as in August or September, and continue in perfection till Christmas or spring, the seed may be sown about the middle or towards the latter end of March, or in the first or second week in April, in a bed of natural earth in an open exposure; and a little more in the latter end of the last named month, or in the first or second week in May, to furnish a still later crop to come in the beginning of November, and continue good until the March or April following; and to have a late crop principally for the spring, it will be necessary that a small portion be sown at the latter end of May; and by putting out some of the plants in shallow trenches about Michaelmas, and in October and November, they may be fit for use in March and April, and continue without running till the middle or latter end of the May following.

As it has been suggested, that the early crop may either be sown upon a warm border of natural earth, or upon a slight hot-bed, it may be observed, that by the latter practice, the plants may be so forwarded, as to be fit to transplant into trenches sooner by three weeks or a month, than those raised in the natural ground; a small bed of about eighteen or twenty inches deep of dung will be sufficient, which may be sheltered either with a small frame, or occasionally with mats supported on arches made with sticks; upon this five or six inches of rich light earth should be laid, the seed being then sown on the surface, and covered near a quarter of an inch deep; when the plants appear, the full air must be freely admitted in mild days, but sheltered with a glass or mats in the nights until they acquire some strength, frequent light waterings being occasionally given: when the plants of either of the sowings are two inches high, some of the finest should be pricked out into a bed of rich earth, in a sheltered situation, three inches apart; or to bring them still more forward, upon a slender hot bed, and occasionally sheltered with mats, giving them water, and occasionally shade, till they have struck root; and if rain do not fall, refreshing them as frequently with water as may be necessary.

As those that were thus first pricked out will, in May or the beginning of June, be generally five or six inches high, some of the strongest of them should be transplanted into trenches, in order to their being blanched. In regard to sowing the main and later crops at several times as have been recommended, make choice of a spot of rich light earth, in an open situation, and let it be neatly dug and divided into one or more beds; but one bed is generally sufficient for private use, which should be three feet and a half wide, the surface being made level and smooth. The seed may then either be sown on the surface, and raked in lightly, or the surface first raked nice, the seed then sown, earth being lifted over it near a quarter of an inch thick; or the bed being first raked smooth as above, the earth may be shoveled with the

back of a rake from off the surface a quarter of an inch deep into the alley; the seed then be sown, and with the rake turned the right way, the earth drawn up on the bed again with a kind of jerk, so that it may spread and cover it equally.

When the plants of these sowings are come up, they should be frequently watered in dry weather, especially while they are young. And when about three or four inches high, the seed-bed should be thinned by pricking out a quantity of the strongest into an open rich spot, properly dug and divided into beds three feet and a half wide, taking an opportunity, if possible, of moist weather, and in rows six inches asunder, and three or four inches distant in each row, water being given, and if dry weather succeeds, occasionally repeated till they strike fresh root; in this bed, they are to remain a month, or five or six weeks, to acquire due strength previous to their being transplanted into trenches, in order for blanching. The same seed-bed will frequently afford three, four, or more different drawings, to prick out in this way, by observing to thin out the largest plants regularly each time, before they draw each other weak by close standing; and by thus pricking them in beds till the ground intended for the trenches is at liberty, they will be advancing in their growth, and be considerably better prepared for setting out, than such as have remained all the time in the seed-bed.

The next business is that of transplanting them into the trenches for the purpose of blanching; the season for which is occasionally from the middle of May till the latter end of October, or even middle of November, according to the forwardness of the plants, the time they are required for use, and the period it is intended they shall continue. When the plants are from about six to ten or twelve inches high, as has been observed, they are of a proper size for transplanting into the trenches.

It is necessary always to make at least three different transplantations, allowing the distance of three or four weeks between each time of planting; but when the plants are required for use as early in summer as possible, and to be continued in spring as late as the middle or latter end of May, it is eligible to plant four, five, or even six different crops, allowing the distance of time abovementioned between the planting of each separate crop; observing that the crops intended principally for spring use be of the latest sown plants, and not planted in the trenches until September, October, and beginning of November.

In making the trenches, chuse a dry rich spot of ground, in an open quarter, and with a line and spade mark and chop out the trenches crossways of the piece of ground, each trench twelve inches, or about one spade breadth wide, and allow a space of three feet between trench and trench, that there may be sufficient scope to have a due portion of mould to earth up the plants to a proper height; the trenches being marked in this manner, proceed to dig them out in order to form the furrow for the reception of the plants, which should be done lengthways to the depth of a moderate spade, or about six or eight inches for the early crops; but the later ones do not require so much, without taking out any shovellings, laying the spits of earth alternately to the right and left in the spaces between, levelling it neatly, and beating up the edges firm and straight; then let the bottom be properly dug and levelled, or if the ground be poor, first spread therein two or three inches depth of rotten dung, and dig it in four or five inches deep.

The trenches being thus prepared, a quantity of the best plants must be drawn, the ends of their roots, and the tops of the straggling leaves trimmed off; then a row planted ex-

actly along the middle of each trench, placing the plants four or five inches distant, a good watering being immediately given out of a pot with the rose on, and which, if showers do not fall, should be repeated every other evening at least, till the plants have taken fresh root.

Only a few of the very early plants, as those sown in February, or early in March, should be planted out at a time, as they are apt to pipe almost as soon as they are blanched, or sometimes before it is fully effected.

When it happens that the plants intended to be planted in autumn, for the late crops, have, by the allotted compartment of ground for their reception not being vacant, stood so long in the seed or pricking-out beds as to have become rank, and drawn each other up weak, it may be proper to retard their running up tall, in order to obtain them of robust growth against October and November, for planting them in shallow trenches; to effect this, it will be adviseable, in August or the beginning of September, either to cut them down low to shoot out again, or transplant them into rows nine inches distant.

Another method of planting and making the trenches, but which is less in use, is with a line and spade to cut or mark out a bed, or rather trench, six feet wide, crossways the ground; then to begin at one end, and proceed to dig out a cavity the above width and length, one spade deep, laying the spits of earth to the right and left, in a ridge along each side of the cavity or trench, beating it up in front that it may not slip down; and when the trench is thus dug, to loosen and level the bottom; and where dung is necessary, to add it, digging it into the bottom four or five inches deep. When more than one of such trenches are to be made, a clear space of six feet must be allowed between trench and trench, to contain the earth dug out, and to have a sufficiency to bring up to the plants afterwards.

The trenches being thus prepared, the plants are to be trimmed as before directed, and then planted, observing that they are here to be planted in rows crossways the trench, about a foot asunder, and in other respects as in the other method.

The plants of this sort, in order to whiten or blanch the stalks, and render them crisp, tender, and of a grateful flavour, require to be earthed up as they rise in height on each side, for which purpose the earth that was dug out of the trenches is to be employed; and when that is expended, that in the spaces between them must be dug out, broken, and applied repeatedly as the plants advance in growth, in this way blanching them from ten or twelve to fifteen or eighteen inches or more in height.

The proper time to begin this work, is when the plants are about ten or twelve inches high, which should be repeated every fortnight or three weeks, as may be necessary, during their principal growth. In performing the work, regard must be had to break the earth, where lumpy, moderately small with the spade: or the first and second earthing may be performed with a large hoe, but afterwards in the principal earthings a spade is to be preferred, and care taken to trim the earth up lightly to the plants, so as not to break the stalks of the leaves, or force the mould into their hearts. The first time, they may be earthed three, four, or five inches, according to the size and height of the plants, observing the same rule at each time, till they are by degrees earthed to twelve inches, but fifteen or twenty are better. By this means, if the soil be rich, those of the main crop that have been planted out in the end of June or in July, sometimes make such progress, that by September or October they may be blanched eighteen inches, or near two feet in length. These earthings are to be continued to the later

crops occasionally, until Christmas, or as long as the plants continue to grow in height during the winter, at which season, as about November and December, it is proper to earth them up pretty near their tops previously to hard frost setting in, which often destroys such plants as are out of the ground, and which, if of considerable duration, would occasion the decay of most of the other parts that are within the earth.

But in the late crops, planted in October or November for spring use, such plants as are of small or low growth, will probably require but little or no earthing till February or March, at which time they should be earthed up moderately, according to their growth, to have them for use in April and May, when the general crops are finished.

In earthing up the plants that are planted in the latter of the above methods, it will be necessary to trim the earth in well between the rows, taking it equally from the different sides; in doing which, it is of advantage, where the plants have attained a large growth, to be furnished with a couple of thin boards, six feet long; which are to be used at the time of earthing, to slip into the spaces between the rows of plants, to keep the stalks and leaves up close just till the earth is put in, placing them close to the plants, and then trimming in the earth between them; and when one space is thus earthed, drawing out the boards, and placing them in the next.

The different earthings should always, if possible, be performed when the plants are dry, as where this circumstance is not attended to, they are apt to become spotted and cankered.

Some of the first earthed-up plants, where they have been planted in the trenches in May, or the beginning of June, will generally be fit to take up in July; for when such early plants are blanched five or six inches in length, it is time to begin to take them up, as they rarely continue long before they begin to pipe and become useless.

But the plants of the main crop will seldom be blanched any considerable length, till the middle or latter end of August, and beginning of September, and will not have acquired their full perfection until October, as observed above. However, where there is much demand for the plants, you may begin to take some up, when they are blanched six or seven inches, as, if properly followed with earthing, they will be daily increasing in length in the blanched part.

In winter, at the approach of very severe frost, it may sometimes be of advantage to cover some of the rows of the main crop with dry long litter to save the plants, and prevent the ground being frozen hard, that the plants may be readily dug up when wanted. And when a hard frost is expected, a quantity of the plants may be taken up for use, and laid in some dry earth in a shed, or other sheltered place.

A. rapaceum, or the turnip-rooted celery. This is likewise propagated by seeds, sown in an open rich spot in March or April, as directed for the common sort; and when the plants are an inch or two high, they are to be thinned to three inches; and at four, five, or six inches in height, transplanted into shallow trenches; previously to which the ground must be dug all over one spade deep, and drills three inches deep and eighteen asunder, made with a hoe, in which the plants are to be set six inches distant.

When they are advanced nine or ten inches in growth, observe the progress of the roots, and if they have acquired a tolerable size, draw earth up to each side of the row of plants, three or four inches high, which, being well watered, will be sufficient to improve the roots. They are generally fit to take up for use in a fortnight or three weeks afterwards.

A. graveolens, or smallage. This is a plant of the weed kind, and but seldom cultivated in the garden. If wanted, it may, however, be easily raised in the spring.

APIVORUS, in *Ornithology*, a species of the *FALCO* genus. The cere is black; feet half naked and yellow; head grey; tail banded with cinereous colour, and white at the tip. Linn.

This is a very variable bird in respect of its colour, and scarcely any two authors agree in describing it. The length of one specimen is twenty-three inches; weight thirty-eight ounces. The bill and cere black; irides golden yellow; head ash-coloured; neck, back, scapulars, and wing coverts deep brown; the chin nearly white streaked with narrow brown lines; fore part of the neck rufous, breast and belly barred with transverse regular bars of rufous brown and white, each feather being white with two bars across it. Tail brown, with two dusky bars, one in the middle and the other near the end. Legs short, yellow, claws black. Lath. Gen. Syn.

One described in the British Zoology about the same size had the chin white, breast and belly of the same colour, marked with dusky spots, pointing downwards; and the tail long, of a dull brown colour, marked with three broad dusky bars, between each of which were two or three of the same colour, but narrower. Another, supposed to be the female, being shot on the nest, is noticed in the supplement of the folio Zoology of Pennant; it was entirely of a deep brown, but had much the same marks on the wings and tail as the male; and the head was tinged with ash colour. Linnæus says, the tail has only one cinereous band across; the side tail feathers are banded with white, and spotted with brown, according to Brisson; and Albin's bird had no bars on the tail.

The honey-buzzard inhabits various parts of the continent of Europe, but is no where common except in the open parts of Russia and Siberia; is seen as far north as Soudonor in Norway; in England is scarcely ever met with.

It feeds on larvae of bees and wasps, and on frogs and lizards; the eggs are of a deep red brown, with ferruginous blotches. This is the *BUTEO APIVORUS* of Ray, la bondrée of Brisson and Buffon, le goiran ou bondrée of Belon, and honey-buzzard of Albin. Pennant, Brit. Zool. and Donov. Brit. Birds, t. 30.

APLANATIC, formed of *α, priv.* and *πλαναω, erro*, in *Optics*, a term applied by Dr. Blair, professor of practical astronomy in the university of Edinburgh, to that kind of refraction discovered by himself, which entirely corrects the aberration of the rays of light, and the colour depending upon it, in contradistinction to the word *achromatic*, which has been appropriated to that refraction, in which there is only a partial correction of colour. After a variety of researches and experiments, detailed at large in a paper read before the Royal Society at Edinburgh, in 1791, and published in the third volume of their Transactions, he discovered a mixture of solutions of ammoniacal and mercurial salts, and also some other substances, which produced dispersions proportional to that of glass, with respect to the different colours; and he proceeded to construct a compound lens, consisting of a semi-convex one of crown glass, with its flat side towards the object, and a meniscus of the same materials, with its convex side in the same direction, and its flatter concave next to the eye; and the interval between these lenses he filled with a solution of antimony in a certain proportion of muriatic acid. The lens, thus artificially adapted, did not manifest the slightest vestige of an extraneous colour. His discovery is undoubtedly valuable and important, and may lead to a very useful improvement in the construction of telescopes. Dr. Blair obtained a patent for his invention of a method of

improving the refracting telescopes, and other dioptrical instruments, in 1791. See ABERRATION and TELESCOPE.

APLEBECK, in *Geography*, a town of Germany, in the circle of Westphalia and county of Mark, three miles south from Dortmund.

APLOGA, a district of the kingdom of Whidah, on the Slave coast in Africa, where is held a regular market for slaves, cows, sheep, goats, birds, apes, cloth, cotton, calicoes, silk, stuffs, china, mercury, gold in dust and ingots, &c.

A-PLOMB is a very expressive French term in *music* and dancing, for exactness and precision in time, or measure. To say that a vocal or instrumental performer has an exact *à-plomb* is pronouncing him or her to be a good tunist. So a dancer who falls on his feet precisely at the beginning of a bar, or the end of a period or movement, is said to have a good *à-plomb*—the highest praise that can be given him. A leader on the violin, who in *tempo rubato* (borrows time which he never pays), drags a note beyond its due length, and arrives not at the beginning of a bar at the same instant as the rest of the band, has no *à-plomb*. It seems as if the old refinement of *tempo rubato*, and the new one of *relentando*, could only be safely practised in solos, or solo passages, as great confusion must arise in an orchestra by the *relentandos* and accelerations of an individual performer, if the rest are not apprised of the leader's intention.

APLUDA (the name of the chaff, &c. that lies off from grain), in *Botany*, a plant of the grass kind, Lin. gen. 1147. Schreb. 1571. Gertn. t. 1. 5. Juss. 33. Class, *polygamia monœcia*; natural order of *gramina*.

Generic Character. *Calyx*, involucre-common univalve; valve ovate, concave, terminated by a very short point or leaflet, two-flowered; the inferior flower sessile, short at the base, ovate, truncate, hollow down into the two opposite foot-stalks, which are glutinous, flat, vertical; on one of these is placed the superior flower, on the other a very short rudiment of a flower; inferior flower hermaphrodite, almost wholly concealed between the foot stalks; *calyx* involucre-proper univalve; valvelet lanceolate, compressed, rigid, double-toothed at the tip, smooth, embracing the flower with its margins beneath, opposite to the common involucre; glume one-flowered, two-valved; valvelets membranaceous, transparent, shorter than the involucre; the exterior navicular, gibbous on the back, keeled, contracted towards the tip, acuminate; the interior ventricose somewhat sharp, smaller; *corolla*, glume bivalve, membranaceous, very thin, transparent; valve exterior navicular, compressed, smooth, greenish, gibbous on the back, bifid, acute, awned below the tip, concealed within the exterior valve of the calyx; the interior lanceolate, flat, acute, doubled together at each margin, the exterior rather longer; nectary very small, two-leaved, truncate-rounded, greenish; *stamina*, filaments three, capillary; anthers linear, bifid on each side; *stigma*, germ oblong, small; styles two, capillary, erect; stigmas oblong, villose, protruding on each side of the flower; *perispermium* none; corolla cherishes the seed, which is ovate-oblong, compressed and smooth; flower-superior smaller; *achæna*, glume two-flowered, two-valved; valves lanceolate, broadish, flat, sharp, nervose, nearly equal; one floscule female, the other male or neuter; *corolla* of the female a bivalve glume; valves membranaceous, greenish; the exterior ventricose, conered, pointed; the interior lanceolate, narrower, shorter, obtuse; of the male, glume bivalve; valves lanceolate, membranaceous, greenish; the exterior rather ventricose, sharp; the interior narrower, shorter; nectary in both as in the inferior flower, and also the stamens of the male, and pubes of the female flowers. It has been observed, that sometimes each floscule of the superior flower is male.

Essential generic character. *Calyx*, glume common, bivalve;

female floret sessile, males peduncled; male, *calyx* none; *corolla* bivalve; *stamina* three; female *calyx* none; *corolla* bivalve; style one; seed one, covered.

Species. 1. *A. nutica*, leaves lanceolate, all the flowers awnlets; culms very long, weak, smooth, swelled at the joints; leaves long, flat, narrowed at the sheath into a petiole; panicles small, lateral: a native of India. 2. *A. ariflata*, leaves lanceolate; male flowers awnlets, except one at the end, which is awned and sessile; culms a foot long, insected; leaves rough, petiolate; racemes axillary; flowers in threes: a native of India. 3. *A. zugites*, mountain-reed-grass, leaves ovate, flowers similar to those of the *ariflata*; culms from one to two feet in height, filiform, jointed; leaves subpetioled, acute, nerved, reticulate, smooth; panicle spreading, few-flowered: a native of Jamaica, where it was found by Brown. See his Jan. 341. t. 4. f. 3. 4. *A. digitata*, spikes digitate; flowers all pointing in the same direction: a lofty East-Indian grass, discovered by Thunberg.

APLUSTRE, or AMPLUSTRE, in the *Ancient Naval Architecture*, a carved tablet, somewhat after the manner of a shield, fixed by way of decoration to the extremity of a ship's head. This ornament was in the stern, and sometimes on the prow, and from it was erected a staff or pole, with a ribbon or streamer on the top. It answered to the Greek *aplustum*.

The *rostra*, or beaks of ships, were sometimes also called *aplustria*.

But some think that the aplustre answered to what we call the flag, or ensign.

APNOEA, from α and $\nu\epsilon\omega$, *I breathe*, in *Medicine*, denotes a want of breath, or loss of respiration.

In this sense is the word used among the ancients, not as importing a total privation of breath, which would only be another name for death; but to denote the respiration very small and slow, so as to seem quite gone, as is the case in suffocation of the uterus, apoplexies, syncope, lethargies, &c.

APOBATÆ, in *Antiquity*, the name given to those athletes, who were also denominated PARABATÆ.

APOBATANA, in *Ancient Geography*, the metropolis of Media, more properly and more generally called *Ecbatana*.

APOBATERION, from $\alpha\pi\delta\epsilon\iota\chi\omega$, *I depart*, among the *Antients*, a farewell speech or poem, made by a person on his departure out of his own country, or some other place where he had been kindly received and entertained.

Such is that of *Zæus* to *Helena* and *Andromache*. Æn. lib. iii. The apobaterion stands opposed to the *EPIBATERION*.

APOBATHMOS, in *Ancient Geography*, a place of Peloponnesus, on the coast of the Argolide, well of the gulf, near *Geonium* and *Lania*; where, according to tradition, *Danaus* and his sons landed on the shore of Argos; whence the name.

APOBATHRA, a place in the Thracian Chersonesus, where the troops of *Xerxes* landed in their passage from Asia to Europe.

APOBATHRÆ, in *Antiquity*, a kind of little bridges, or stairs, joining the land to ships, or one ship to another.

APOBEE, in *Botany*, a name given by the natives of Guinea to a species of corn-marygold, called by *Petiver* *chrysanthemum acation* Guinea. *se foliis longis angustis*, from its having long and narrow leaves, and no stalk to support the flower. The people of the place use this in the small-pox, and other eruptive fevers, boiled in water, and the liquor drank warm. Phil. Trans. N^o 232.

APOBOMIOL, from $\alpha\pi\omega$, below, and $\beta\omicron\mu\omicron\varsigma$, altar, in *Antiquity*, sacrifices offered on the bare earth, without altars.

APOCALYPSE, formed of $\alpha\pi\kappa\alpha\lambda\upsilon\psi\iota\varsigma$, *I reveal*; *Revelation*: the name of the last book in the canon of Scripture.

The

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The first question that occurs in our examination of this book relates to its *authenticity*. This is a subject on which many ancient and modern writers have disagreed; and it will be sufficient to give a brief view of the evidence which testimony affords concerning it. It has been alleged, that there are evident allusions to this book in the Shepherd or Pastor of Hermas, a piece that was written towards the close of the first century; and that it was received by Papias, who flourished about the year 116. Justin Martyr, about the year 140, was well acquainted with this book, and received it as the genuine writing of the apostle John. Among the works of Melito, bishop of Sardis, one of the seven churches of Asia, about the year 177, Eusebius mentions one, intitled, "of the Revelation of St. John;" and it is probable, that he ascribed this book to the apostle of that name, and esteemed it of canonical authority. It appears to have been referred to by the Martyrs at Lyons, A. D. 177. Irenæus, bishop of Lyons, about 178, who in his youth was acquainted with Polycarp, often quotes this book as "The Revelation of John the Disciple of the Lord;" and he says concerning it, that it was seen not long ago, but almost in our age, at the end of the reign of Domitian. From the writings of Athenagoras, the Testament of the Twelve Patriarchs, and the Clementine recognitions, Dr. Lardner has produced single allusions to the Apocalypse, which prove, that the authors of these books were acquainted with it, though they do not warrant the conclusion, that they considered it as the genuine work of St. John the apostle. But it was undoubtedly received, and often cited by Theophilus, bishop of Antioch, about A. D. 181, Clement of Alexandria, who flourished about 194, and Tertullian about the year 200. Eusebius informs us, that Apollonius, who wrote against the Montanists about the year 211, quoted the Revelation. It was received by Hippolytus about the year 220, who wrote a commentary upon it; and about 230, by Origen, who has often cited it, and who seems to have had no doubts about its genuineness. Dionysius, a disciple of Origen, and bishop of Alexandria, about the year 247, or somewhat later, wrote a book against the Millenarians, in which he allows the Revelation to have been written by John, a holy and divinely inspired man, who was, as he supposes, not John the apostle, but an elder who also lived at Ephesus. About the year 240, and before, it was received by Nepos, an Egyptian bishop, and by many others in that country, and held in great reputation.

After the age of Dionysius, the number of ecclesiastical writers who quote the Apocalypse, as a divine work, begins to increase.

According to Lardner, it was received and frequently quoted by Cyprian, bishop of Carthage, about 248, and by the church of Rome in his time, by Novatus, A. D. 251, and his followers; by Commodian, A. D. 270; by Victorinus, who wrote a commentary upon it, and by Methodius, A. D. 290; probably by the Manichæans, though this is disputed by Beaufobre; by Arnobius, and Lactantius, A. D. 306; by the Donatists, and by the Arians, in the fourth century. In the time of Eusebius, about the year 315, it was not received by all, and therefore he reckons it among contradicted books, observing that it was rejected by some, but by others referred to the class of books universally received. He seems to have hesitated about it; for he neither pronounced it to a forgery, nor ascribed it to St. John the apostle. He says, however, that the Revelation was seen by John the elder, if not by John the apostle. Dr. Lardner observes, that the critical argument of Dionysius of Alexandria had great weight with him, and with others of that time. The Revelation was received by Athanasius, bi-

shop of Alexandria, A. D. 326; by Epiphanius, bishop of Cyprus, A. D. 368; by Gregory Nazianzen, A. D. 370, as some have inferred from his citing it, but others have disputed his acknowledgment of it; by Jerom, A. D. 392, who admitted it after a more cautious examination than was instituted by most of his predecessors, and who appealed in support of its authenticity to ancient testimonies; by Rufinus, A. D. 397; and by Augustine, A. D. 395. The authority of this father was so great, not only in the African church, but in the Latin church in general, that his reception of the Apocalypse contributed very much to its almost universal admission both in Africa and in the west of Europe. During his time, in the year 397, was held the third council of Carthage; and this was the first council in which this book was pronounced canonical. Innocent I. elected pope in 402, declared likewise, that this book, from which his successors were to be proved the Antichrist, was canonical. It is in the catalogue of Dionysius the Areopagite, and in Greek manuscripts, such as the Codex Reuchlini, Alexandrinus, and Seidelianus. It was received by Sulpicius Severus about 401, and declared to be a genuine and divine work, in the fourth council of Toledo, A. D. 633, for this curious reason, because it had been pronounced such by several councils and several popes, and the decree of this council annuls all doubts of its authenticity in the Latin church. Andrew bishop of Cæsarea in Cappadocia, at the end of the fifth century, and Arethas bishop of the same place in the sixth century, wrote commentaries upon it. In the Syrian church, which comprehended not only all the Christians who resided in Syria, Assyria, and Mesopotamia, but likewise all those who were dispersed in Arabia, Persia, Tartary, and China, as well as in the Greek and Latin churches, the book of Revelation was acknowledged as a divine work. To this purpose Ephrem the Syrian, about A. D. 370, not only quoted it, but received it as a divine book; for he says concerning it, "John saw in revelation a great and wonderful book which God had written, and which was sealed with seven seals." In the seventh century, a new and very literal translation was made of the Apocalypse, and taken into the Philoxenian version, which was chiefly used by the Monophysites, so that they did not reject it. In the latter end of the same century, and the beginning of the next, lived Jacob the Monophysite, bishop of Edessa, who has quoted the Apocalypse in his commentary on Gen. xlix. 17. That the Syrians of the Nestorian party likewise received this book in the eighth century, appears from an ancient monument which was dug up at Sanxuen, in the Chinese province of Xensi, in the year 1625. On this monument, which appears to have been erected A. D. 781, at which period, as well as during some centuries later, there was a very numerous colony of Nestorian Syrians, in China, mention is made of the New Testament as containing 27 books, so that the Apocalypse must have been included; but it is needless to pursue the evidence to a wider extent, or to a later period.

Having cited a great number of very respectable authorities in favour of the genuineness of the Apocalypse, it may not be improper, for assisting the judgment of the reader, to present some of the testimonies that have been urged against it.

The most ancient evidence on this side of the question, is that of Ignatius, A. D. 107, who wrote epistles to the churches of Ephesus, Smyrna, and Philadelphia; three of those that are mentioned in the book of Revelation; and who reminds the Ephesians of the praises bestowed upon them by St. Paul, and yet takes no notice of the praises which, according to Rev. ii. 1—7. 8—11. iii. 7—12. their bishops had received from Christ himself. Hence it has been in-

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ferred, either that the Apocalypse was unknown to Ignatius, or if known, not believed by him to be genuine; and if it was a genuine work of St. John the apostle, it could not have remained unknown to him. The old German translator, who lived in the first century, did not translate the Apocalypse; and hence it is presumed, that he either knew nothing of it, or did not believe it to be genuine. The testimony of Papias in its favour is doubtful; for it is urged, that as he was the founder of the system of the Millennium, he would naturally have recurred to the 20th chapter of this book, if he had been acquainted with it, in support of his opinion. In the second century it was acknowledged and cited by many eminent persons; nevertheless in this century there existed a sect, called the Alogians, who were acquainted with the Apocalypse, and yet denied it to be genuine. One of their principal and most plausible objections against the authority of this book is founded on the circumstance recorded in ch. ii. 18—20, in which the fourth epistle is directed to be addressed to the angel of the church at Thyatira; whereas, they affirm, that there existed no church at Thyatira. This objection of the Alogi Epiphanius has delivered in the following words, “*καὶ ἐπεὶ ἐν οὐκ ἔστιν ἐκκλησία χριστιανῶν;*” but these words are ambiguous, for they may denote either that there was no Christian community at Thyatira in the time of St. John, or there was no such community there when the Alogi made their objections. In the latter sense the argument is of no importance; for though there might be no Christian society at Thyatira in the middle of the second century, there might have been one in the reign of Claudius, to which period Epiphanius refers the Apocalypse. But the fact was not true, as there existed a community of Alogi, who certainly considered themselves as Christians, and another sect who were opposed to the Alogi, and who were called Phrygians. It is, therefore, not necessary to recur with Epiphanius to the prophetic spirit of St. John, who foresaw there would be a church at Thyatira in course of time. Besides the Alogi, there were other adversaries of the Apocalypse, who lived partly at the same time with them, and partly in the beginning of the third century; and who rejected the Apocalypse, not so much as the Alogi did, from their antipathy to the term *λογος*, but principally from their dislike of the doctrine of the Millennium. Among these we may reckon the Roman presbyter Caius, who lived about the year 210. Some, however, have supposed that Caius refers to a different Apocalypse from ours. Dionysius of Alexandria, though he did not reject it as a forgery, did not ascribe it to St. John the apostle, and probably did not believe it to be a divine work: but his reasons for not ascribing it to St. John are not historical but critical; and, therefore, their importance depends not on the antiquity of the writer who assigned them, but merely on their own internal strength. It is well observed by Michaelis, who himself hesitates in allowing the genuineness of this book, but who has fairly stated the evidence on both sides, that if it were not written by St. John, we have reason to wonder, that neither Dionysius nor his predecessors, neither the Alogi nor Caius, should have alleged against a work, supposed to have been first ushered into the world about the year 120, any arguments like the following: “It is not preserved in the archives of the seven churches; the oldest persons in these cities have no knowledge of its having been sent thither; no one ever saw it during the life of John; it was introduced in such and such a year, but was contradicted as soon as it appeared.” Arguments like these would have at once determined the question in dispute; but since we meet with no such arguments in the writings of the ancient adversaries of the Apocalypse, its very adversaries have given it an advantage, which,

if not decisive, merits peculiar consideration. Eusebius, who was in possession of almost all the information that was to be collected before his time, had not been able to discover any thing decisive in respect to the Apocalypse, and consequently remained in doubt. He, therefore, neither pronounced it a forgery, nor ascribed it to St. John the apostle. Michaelis closes his examination of the evidence prior to the time of Eusebius, with the following remarks: “How is it possible that this book, if really written by St. John the apostle, should have either been wholly unknown, or considered as a work of doubtful authority in the very earliest ages of Christianity? The other apostolical epistles are addressed only to single communities or churches; but the Apocalypse, according to its own contents, was expressly ordered by Christ himself, in a command to St. John the apostle, to be sent to seven churches; and not only were these seven churches in that part of Asia Minor where Christianity was in the most flourishing situation, but one of them was at Ephesus, where St. John spent the latter part of his life, and consequently where every work of St. John must have been perfectly well known. If St. John then had actually sent the Apocalypse to these seven churches, and that too not as a private epistle, but as a revelation made to him by Jesus Christ, one should suppose that its authenticity could not have been doubted, especially at a time when there were the best means of obtaining information. We cannot say that the book was kept secret, or was concealed in the archives, lest the prophecies against Rome should draw a persecution on the Christians; for secrecy is contrary to the tenor of the book; and the author of it enjoins (ch. i. 3.) that it should be both read and heard. “Under these circumstances,” adds the author, “the authenticity of the Apocalypse appears to me very doubtful; and I cannot avoid entertaining a suspicion, that it is a spurious production, introduced probably into the world after the death of St. John.”

Since the time of Eusebius, and some centuries later, the doubts that had prevailed concerning the authenticity of the Apocalypse considerably abated, especially among the members of the Latin church, who at last received it almost unanimously. Among the Greek writers, however, there were several who rejected it. It was not received by all in the time of Epiphanius; it was omitted in the catalogue of the council of Laodicea, held A. D. 363; but professor Spittler, says Michaelis, has clearly shewn, that the whole of the sixteenth canon, which contains this catalogue, is a forgery; and if this be true, no evidence can be deduced from it in future against the Apocalypse. It was not acknowledged by Cyril, who was bishop of Jerusalem from the year 350 to the year 386; nor was it admitted into the catalogue of canonical books by Gregory Nazianzen; and by Gregory of Nyssa it was placed among the Apocryphal writings. In fact, says Michaelis, it was almost universally considered as spurious by the members of the Greek church at the end of the fourth century; and Dr. Lardner acknowledges, not only that the two celebrated Greek commentators, Chrysostom in the fourth, and Theophylact in the eleventh century, have not quoted it in a single instance; but that Nicephorus, patriarch of Constantinople, about the year 806, expressly rejected it; and on his testimony, it was placed among the Apocryphal books.

Although the Apocalypse made no part of the old Syriac version, which is the vulgate of the Syrian church in general, it was translated in an early age into that language. Nevertheless, it was not received by Severian, bishop of Gabala in Syria, A. D. 403; nor by Theodoret, bishop of Cyrus, in Syria, A. D. 423; nor by Abulpharagius, who was primate of all the Monophysites of the east in the thirteenth century,

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century, and was by far the most learned of all the Syrian writers; and it was entirely omitted in the catalogue of sacred books formed by Ebedjesu, metropolitan of Armenia, who died in the year 1318. It does not appear to have been received, or at least to have been publicly read at Alexandria in the fifth century, but it was received in general by the Egyptian Christians.

In more modern times, although the opinion of learned men has been very generally and decidedly in favour of the authenticity of the Apocalypse, yet there have been some who have entertained doubts about it, and others who have denied it. Among the latter we may mention Luther, who, in the preface to his edition of 1523, positively rejected it; but in the later editions, he has expressed himself in terms less decisive, and left it to others, who, he says, were better qualified than himself to determine whether it merited a place in the sacred canon or not. Michaelis also, after an elaborate examination of the authenticity of this book, concludes with leaving the decision of this important question to every man's private judgment.

The arguments for or against its divinity, deduced from the completion or non-completion of the prophecies contained in it, have been particularly considered by Michaelis (*ubi infra*), and to this learned writer the reader is referred. Sir Isaac Newton closes his brief account of the ancient testimonies in favour of the genuineness of the Apocalypse with this observation: "I do not, indeed, find any other book of the New Testament so strongly attested, or commented upon so early as this."

As to the *author* of this book, there has been a considerable difference of opinion among both ancient and modern writers. Some have ascribed it to John, a presbyter of Ephesus. Of this number seems to have been Eusebius, who, after having shewn from the writings of Papias, that beside St. John the apostle, there lived at Ephesus a presbyter of the same name: he adds, "This latter John was probably the person who saw the Revelation, unless it be insisted on, that it was the former." Others attributed the Apocalypse to Cerinthus, who is supposed to have lived in the time of St. John: and to this class we may refer the Alogi, and, probably, the Roman presbyter Caius, and other persons in Egypt, of whom Eusebius has given an account. *Eccl. Hist. b. vii. c. 25.* Against this opinion it has been justly alleged, that if the inscription be not false, Cerinthus could not have been the author, unless he also was called John; besides, the Revelation contradicts many of Cerinthus's sentiments, and therefore could not be his work. According to Irenæus, Cerinthus denied that God made the world; whereas, the writer of the Revelation often teaches the contrary. See *Rev. c. iv. 11.* He also maintained, that Christ did not suffer, but Jesus only. But the author of the Revelation calls Jesus, Christ, not Jesus alone, the first begotten of the dead; and adds, that the same Jesus Christ washed us from our sins in his own blood (*Rev. i. 5.*); and, *v. 7.* he says of Jesus Christ, that he was pierced. It is, therefore, improbable to the highest degree, that Cerinthus should have written the Revelation under the name of John; for if he had meditated such a fraud in favour of his Millennium, he would have so contrived it, as not to hurt his other equally favourite opinions. It has been also said, that the Revelation does not establish Cerinthus's notions of the Millennium, but directly contradicts and overthrows them; for the author of the Apocalypse describes his Jerusalem as inhabited by numbers of pure and holy persons (*Rev. xxi. 27. xxii. 14, 15.*); whilst Cerinthus's Jerusalem was to be the residence of the earthly and sensual. His citizens were to serve their passions and their pleasures; whilst the men of John's Jerusalem were to serve God and the Lamb (*Rev.*

xxii. 3.). His millenary state was not the life of saints, as the Apocalypse represents it, but the life of libertines.

The more generally received opinion concerning the author of the Apocalypse is, that it was written by St. John the apostle and evangelist, who was the writer of the Gospel and the Epistles. To this purpose it has been argued, that in *ch. i. v. 1.* John styles himself the "Servant of Christ," in a sense not common to all believers, but peculiar to those who are especially employed by him; and, in *v. 2.* the writer is supposed to refer to the written gospel of St. John, and to say, that he had already borne testimony concerning the word of God and of Jesus Christ. On this particular, Dr. Lardner lays no great stress; and he thinks, that if St. John had intended to manifest himself in this introduction, he would have more plainly characterized himself in several parts of this book than he has done. But the evidence of antiquity, in favour of its having been written by St. John the apostle, is of much greater moment; besides, it has been alleged in proof of its genuineness, and of St. John's being the author of it, that there are many instances of conformity, both of sentiment and expression, between this and the uncontroverted writings of St. John. For such coincidences, learned men have referred to *Rev. xix. 13.* *John, i. 1. 1. Rev. v. 6. 12. John, i. 29. 36.; Rev. iii. 7. xix. 11. John, i. 14. xiv. 6.; 1 John, v. 20. Rev. ii. 17. John, vi. 32.; Rev. i. 7. John, xix. 37.; Rev. iii. 20. John, xiv. 23.; Rev. i. 5. 1 John, i. 7; Rev. iii. 21. John, xvi. 33. 1 John, ii. 13. 14. iv. 4. 5.* These coincidences tend to invalidate the objection of Dionysius of Alexandria, who says that there is no affinity or resemblance between them. This learned writer has also observed, that the Gospel and first epistle of John are written correctly, and not only according to the propriety of the Greek tongue, but with elegance of phrase, argument, and composition; quite free from barbarism and solecism, and even idiotism of language; but the writer of the Revelation discovers no accurate skill in the Greek tongue; on the contrary, he has barbarisms and some solecisms. The Apocalypse, it is observed, abounds with harsh constructions, in which a nominative is placed where another case ought to have been used. Bengelius, in his "Apparatus Criticus," has alleged instances from *ch. i. 5.; ii. 20.; iii. 12.; viii. 9.; ix. 14.; xv. 12.; xviii. 11. 12.; xxi. 10. 12.; xiv. 5.; xvii. 4.*: others might be added. Although constructions of this kind were probably not unusual among the Greek Jews, yet we find no such examples in the gospel and epistles of St. John. Some of these unusual constructions, it has been pleaded, are not found in all manuscripts, and only in a very few printed editions; but they occur too frequently in the Apocalypse to be imputed wholly to transcribers: and they existed in this book long before our most ancient manuscripts were written, as in the third century, when they were noticed by Dionysius. Besides, the Apocalypse abounds with Hebraisms much more than the other writings of St. John; and this circumstance has induced some commentators to suppose, that it was originally written in Hebrew, and that our Greek text is only a translation; but this is wholly unsupported by historical evidence. Moreover, though the figurative language of the Apocalypse, when compared with the simple style of St. John's Gospel, cannot be fairly alleged as an argument that the two books were written by different authors; since the same author, when animated by a spirit of prophecy, will write in a different manner from that in which he had written as an historian; yet there is a certain character, it has been said, in the language of the Apocalypse, which is hardly to be reconciled with the manner that is visible in St. John's Gospel. In the latter, there is a soft and gentle character,

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rafter, fo peculiar to itfelf, as to exhibit no trace of imitation; whereas, in the former, we find the author an imitator of the ancient prophets, from whom he borrows his images, and renders them more beautiful than they were in the originals. And the imagery, which is taken from the theology of the rabbins, acquires in the Apocalypfe a taile and eloquence, of which the rabbinical writings themfelves are wholly deftitute. The beauties of St. John's gofpel are of a different kind; for while the author of the Apocalypfe hurries us away to enchanted ground, and refembles a torrent which carries every thing before it, St. John the evangelift is plainnefs and gentlenefs, and is like a clear rivulet, which flows without rapidity and violence. Is it poffible, therefore, fubjoins Michaelis, that St. John the apoftle, and the author of the Apocalypfe, called St. John the divine, were one and the fame perfon? It is, indeed, an undeniable fact, that the ftyle of the Apocalypfe is very different from that of St. John's gofpel. Mr. Blackwall denies this; but it is allowed by Joachim Camerarius, Beza, Mill, &c. "This, I fuppofe," fays the impartial and candid Lardner, "to be the more general opinion of learned men, that there is a confiderable difference of fentiments and words, and manner, in the Revelation, and the acknowledged pieces of the apoftle John: whatever this difference is owing to, whether it be that thefe writings are not all the compositions of one and the fame author, or that it is entirely owing to the diverfity of fubject and defign, or to fome other caufe. I fhall, however, mention another thing to be confidered: if there were any reafon to think, that there was fome confiderable diftance of time between the compofing of any of thefe books, that might be one good way of accounting for differences of ftyle; for it is not unlikely, that one and the fame perfon, writing upon different arguments, and at a great diftance of time, efpecially if he be one who does not frequently exercife his ftyle, or write in the intermediate fpace, fhould have a very different manner in his feveral performances."

Dionyfius has further remarked, that St. John the apoftle has not mentioned his own name in his gofpel, or in any of his epiftles; but, when he has occafion to fpeak of himfelf, he makes ufe of a circumlocution. On the other hand, St. John the divine mentions his own name, not only in places where it was requifite, as in the addrefs to the feven churches (ch. i. 4.) but likewife in places where the fingle pronoun "I," or the expreffion, "he who faw this," would have been full as proper as the term "I John." The one appears to have an exceffive modefty, and to avoid even the fhadow of egotifm; the other avoids it fo little, that he is lavish in the ufe of his name. And what renders this difference the more remarkable is, that the circumlocution by which St. John the apoftle denotes himfelf, *viz.* "the difciple whom Jefus loved," is not once ufed by St. John the divine. This objection admits of various replies. Although St. John has not exprefsly named himfelf in his gofpel, he has fo defcribed himfelf (John xxi. 24. and other places), that it is impoffible not to know him; the other apoftles have forborne to mention their names as well as John; nor is there any name prefixed to the epiftle to the Hebrews; and the character of the prophet being different from that of an evangelift, required the introduction of his name in conformity to the ancient prophets, who had inferted their names at the beginning, and in other parts of their prophecies. Dr. Lardner does not allow this laft obfervation to be fully fatisfactory, as the apoftle has not fpecified the time of his prophecies and vifions, and other particular, which was done by the ancient prophets, and by Daniel in particular. As for the want of any defcription annexed to the name of John, we may infer from this circumftance, that he was the princi-

pal perfon of that name then living, that is, John the evangelift; and as this was the cafe, his name needed no additions. Befides, he is actually defcribed (ch. i. 2.) under characters which were appropriate to John the apoftle. Upon the whole we may obferve, that he calls himfelf John; that he is defcribed as one who bore record of the word of God; that he had been in the ifle of Patmos for the testimony of Jefus; and we have no account of any John who had been an exile in this ifland about that time, except John the apoftle; and, moreover, he writes to the feven churches of Afia, where the apoftle and evangelift is fuppofed to have prefided; and it is not likely that the fpirit of God fhould admonifh and reprove thefe churches by John the elder, allowing there was fuch a perfon, whilft John the apoftle was living, and prefided in thofe parts. Upon the whole, there feems to be fufficient reafon for concluding, that St. John the apoftle was the author of the Apocalypfe.

Another fubject of inquiry, concerning which the learned have differed, is the *time* in which this book was written. On this point fix different opinions have been advanced. 1. It has been afferted, that the Apocalypfe was written in the reign of the emperor Claudius. Epiphanius is the only evidence in favour of this opinion, and he lived 300 years later than St. John. Although Grotius recommends this opinion by having adopted it, and fuppofes that the vifions of the book were feen at feveral times, and afterwards joined together in one book, two very material objections have been urged againft it: the firft is, that there was no perfecution of the Chriftians in the reign of Claudius, and therefore the banifhment of St. John to the ifle of Patmos cannot be referred to this period. This emperor did indeed iffue an edict for banifhing the Jews from Rome, but it did not affect the Jews in the provinces, much lefs the Chriftians; and the governors had no authority to banifh Jews or Chriftians out of their governments, without an order from the emperor; and moreover, St. John was not in Ephesus during the reign of Claudius. The fecond objection to this date is founded on the circumftance, that the feven churches in Afia, to which the Apocalypfe is addreffed, did not exift at fo early a period as the reign of Claudius; for this fact cannot be reconciled with the hiftory given in the Acts of the Apoftles, of the firft planting of Chriftianity in Afia Minor. 2. It has been maintained that St. John was banifhed to Patmos, and wrote the Apocalypfe there, in the reign of the emperor Nero, before the deftruction of Jerufalem. This opinion has one evidence in its favour, but it is anonymous, and without date; and that is, the fubfcription to the Syriac verfion of the Apocalypfe; but thus feebly fupported, it has been fannetioned by the adoption and arguments of fir Ifaac Newton. Dr. Lardner has examined the arguments of Newton, and does not allow them much weight. 3. According to another opinion, the Apocalypfe was written before the time of Domitian, and before the Jewish war, but it does not determine whether it was in the reign of Claudius or in that of Nero. 4. The moft probable, and the generally received opinion is, that St. John was banifhed into Patmos in the reign of Domitian, and by virtue of his edicts for perfecuting the Chriftians, in the latter part of his reign, and that he had the Revelations contained in the Apocalypfe on that occafion; but the book itfelf could not have been publifhed till after St. John's releafe and return to Ephesus. All antiquity, fays Mr. Lampe, is agreed that St. John's banifhment was by order of Domitian. Irenæus, Origen, Eufebius, and various other ancients, refer the banifhment of St. John to the latter part of the reign of Domitian; and they concur in faying, that he there faw the Revelation. As Domitian died A.D. 96, and his perfecution did not commence till near the end of his reign, the

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Revelation seems to be fitly dated in the year 95 or 96, in the last of which years Mill, Bafnage, and Le Clerc place it. Mr. Lowman fuppofes, that he had his visions in the ifle of Patmos, in the year 95; Dr. Lardner refers the visions recorded in this book, and the publication of them, to the years of Chrift 95 and 96, or 97. There are two other opinions, which fhall be merely mentioned, becaufe they are not fupported by any fufficient authority, that refer the banifhment of St. John to Patmos, the one to the reign of Trajan, and the other to that of Adrian. Mr. Wetflein (N. T. t. ii. p. 746.) favours the opinion of thofe who have agreed that the Revelation was written before the Jewish war; and in this cafe, he fays, it is likely that the events of that time fhould be foretold in it. But upon this fuppofition, Dr. Lardner is of opinion, that it was not neceffary the deftruction of Jerufalem, and the calamities attending it, fhould be foretold in this book; becaufe our bleffed Lord's plain predictions, and fymbolical prefigurations of thefe events, had been recorded by no lefs than three hiftorians and evangelifts before the war in Judæa broke out. "If we confider the Apocalypfe as a divine work," fays Michaelis, "I think we muft confine our choice to thofe dates which precede the commencement of the Jewish war; for thus only fhall we be enabled to fhew, that its firft prophecies were fulfilled in a fhort time. And I grant, that if it is referred to the reign of Claudius, the explanation of it is ftill eafier than when it is referred to the reign of Nero; for the fcarcity predicted (ch. vi. 6.) is defcriptive of that which took place in the time of Claudius. If it be confidered as a mere human invention, it may be either afcribed to Cerinthus, or attributed to fome unknown writer, who lived between the time of Papias and that of Julin Martyr; in the latter cafe, it might have been written in the reign of Hadrian. But if it be really a forgery, if it contain prophecies of the Jewish war, made after the events themfelves had taken place, we have reafon to wonder, that the author did not prophesy more circumftantially, and that he appears fo little acquainted with the events of that war."

The book of the Revelation, notwithstanding the pains which have been taken by men of ability and learning to explain it, feems yet to the generality of Chriftians very obfcure; and many look upon it as a fealed book ftill, never to be explained to any certainty or fatisfaction. A great critic, Scaliger, faid, that Calvin was wife becaufe he did not write upon the Revelation. And another (Dr. Whitby), who has written with great reputation on the other books of the New Teftament, confeffes he did not do it for want of wildom; becaufe, fays he, "I have neither fufficient reading nor judgment to difcern the intendment of the prophecies contained in that book." Michaelis has arranged the expositions of the Apocalypfe, confidered as a divine work, under the following claffes. To the firft clafs may be referred all thofe commentaries which are fafhionable among Proteftants, and according to which, the Apocalypfe contains prophecies againft the pope and the church of Rome; and in the commentaries belonging to this clafs, the prophecies in the Apocalypfe are confidered as ftill fulfilling. To this clafs of commentators we may refer Mede, fir Ifaac Newton, Lowman, bifhop Newton, Hurd, &c. &c. and many other Proteftant writers. To the fecond clafs belong thofe commentaries, which confine the prophecies of the Apocalypfe to the three firft centuries, at leaft fuch as relate to perfecution and punifhment: for the happy Millennium may, according to thefe commentaries, be made to commence with the converfion of Conftantine the Great. Commentators of the third clafs find in the Apocalypfe nothing but the deftruction of Jerufalem, and the

flight of the Chriftians from that city to Pella before the commencement of the fiege. The book of Revelation, according to the interpretation of the beft commentators, comprehends a much longer period than has been affigned to it by thofe who fuppofe that the expreffions "which muft fhortly come to pafs," and "the time is at hand," and the like, point out a very fhort period; fo that the whole prophecy fhould be accomplished in a few years after the vifion. Thefe expreffions will, indeed, fhew that the accomplifhment of the things foretold in this prophecy was foon to begin, but determines nothing concerning the time of their termination, the duration of which is much longer, and reaches from the time of the vifion to the day of judgment. The book itfelf feems alfo to fhew farther very plainly the order of the feveral prophecies, according to their feveral periods, as well as the whole duration, from the time of the origin to the finishing of the whole myftery of God's providence towards the church. The Revelation begins, according to Mr. Lowman, by opening the fealed book, which defcribes the future ftate of the church in feven fucceffive periods.

The *firft* period fhews the ftate of the church under the Heathen Roman emperors, from about the year 95 to about the year 323, and comprehends the opening of feven feals. The firft feal represents a white horfe and the rider with a crown, fignifying the Chriftian religion prevailing againft the oppofition of Jews and Heathens. The fecond feal represents a red horfe with its rider, having power to take peace from the earth, denoting the firft memorable judgment on the perfecutors of Chriftianity, in the deftruction of the Jews under Trajan and Hadrian, from 100 to 138. The third feal represents a black horfe, the rider of which has a balance to meafure corn, denoting great fcarcity, approaching to famine, in the time of the Antonines, from 138 to 193. The fourth feal represents a pale horfe with its rider, called Death, fignifying a great mortality and peftilence, in the reigns of Maximin and Valerian, from 193 to 270. The fifth feal represents the fouls of the martyrs under the altar, denoting the fevere perfecution in the reign of Diocleſian, with an encouragement to conftancy; The fixth represents earthquakes, &c. fignifying great commotions in the empire, from Maximian to Conftantine the Great, who put a period to the perfecution of Heathen Rome. The interval between the firft and fecond periods represents an angel fealing 144,000 with the feal of the living God; fignifying great numbers forfaking the idolatrous worfhip of the Heathen Roman empire, and embracing the profefſion of Chriftianity.

The *fecond* period reveals the ftate of the church and providence in the times following the reign of Conftantine, during the invafion of the empire by the northern nations and the rife and firft progrefs of the Mahometan impoſture, till the ſtop put to it in the weſtern empire; extending from the year 337 to 750, and denoted by feven trumpets. The firft trumpet represents hail and fire mingled with blood, fignifying great ſtorms of war falling upon the empire, and the blood that was ſhed in the reigns of the Conftantine family and their ſucceffors, till things were fettled under Theodoſius, from 337 to 379. The fecond trumpet represents a mountain burning with fire, caſt into the ſea, whereby it became blood; denoting the invafion of Italy by the northern nations, and taking the city of Rome by Alaric, from 379 to 412. The third trumpet represents a burning ſtar falling upon the rivers, which became bitter; fignifying the ravages in Italy, putting an end to the Roman empire, and founding a kingdom of Goths in Italy itfelf, from 412 to 493. The fourth represents a third part of the ſea

and

and moon darkened, signifying the wars in Italy between Julliman's generals and the Goths, whereby the exarchate of Ravenna was erected, and the remaining power and authority of Rome quite suppressed, from 493 to 568. The fifth represents the bottomless pit opened, and evils coming out of it, signifying the rise of the Mahometan religion and empire, and the great progress of both till a stop was put to them by a contest for the succession, from 568 to 675. The sixth trumpet represents four angels loosed, which were bound in the Euphrates, signifying the re-union of the divided Saracen powers in the invasion of Europe by them, and threatening the conquest of it, till defeated by Charles Martel, from 635 to 771.

The *third* period reveals the state of the church and providence, in the times of the last head of Roman government, represented by the beast, for 1260 years to its final overthrow, from about the year 750 to about the year 2010. The sealed book opened by the lamb, and given to St. John to eat, denotes a further revelation of what was to follow, in order of time, to the end of the world. There are three general descriptions of this period in the sixth, seventh, and eighth chapters. The first signifies the corrupt state of the church, and the constancy of some faithful witnesses to the truth, though under severe persecutions, during the whole of this period. The second represents a woman forced to fly into the wilderness for safety, and protected there 1260 days, signifying the persecution and preservation of the church during the same period. The third description represents a monstrous wild beast rising out of the sea, with seven heads, ten horns, as many crowns and titles of blasphemy, who was to continue 42 months, signifying that new Roman power, which should use its authority to promote idolatrous worship, and to persecute all who would not submit to it, and should be supported by another power like to its own form and constitution during the same period. In the sixth chapter, the chorus of the heavenly church celebrates in an hymn the happiness of those who remain faithful and constant; and a nuntius or angel is represented as coming down from heaven to declare the certain and severe punishment of the enemies of truth and pure religion in this period. In the seventh chapter, seven angels are represented as receiving seven cups full of the wrath of God; signifying that the enemies of truth and pure religion in this period shall be severely punished in the course of it, and be utterly destroyed in the end. The seven angels pour out their vials or cups: the first vial poured on the earth, and on the worshippers of the beast, denotes great commotions through the whole empire, under the family of Charles the Great, by which that family becomes extinct, and the empire and crown of France are transferred to other families, from 830 to 988. The second vial poured on the sea, signifies the great bloodshed of the holy war, to recover Jerusalem from the Saracens, from 1040 to 1150. The third vial poured on the rivers and fountains, signifies the bloody civil wars between the Guelfs and Gibellines, the papal and imperial factions, when the popes were driven out of Italy into France, from 1200 to 1371. The fourth vial poured on the sun, denotes the long wars in Italy, Germany, France and Spain, occasioned by a long schism in the papacy; the Turks taking Constantinople, and putting an end to the eastern empire; and pestilential diseases occasioned by intemperate heat, from 1378 to 1530. The fifth vial poured on the seat or throne of the beast, signifies the reformation, and the establishment of it by the principal states of Europe, in opposition to the papal authority, from 1560 to 1650. The sixth vial poured on the river Euphrates, makes way for the kings of the east; this, in

the order of the prophecies, seems to be yet future; but may probably mean some invasion of the pope's dominion from its eastern boundary on the Adriatic, from 1670 to 1850. The seventh vial poured on the air, the seat of Satan's empire, describes the utter ruin of this persecuting, idolatrous government, or mystical Babylon, at the end of this period, from 1850 to 2216.

The *fourth* period is described in the xxth chapter; an angel being sent from heaven to shut up Satan in the bottomless pit, as in a secure prison, for 1000 years, during which time there will be a very happy state of the church in purity, peace, and prosperity.

The *fifth* period terminates the 1000 years of the church's prosperity, when Satan will be loosed again for a little season, and a new attempt will be made to revive the corruptions of the church, and a spirit of persecution, which shall end in the final destruction of Satan's power, and of all the enemies of peace and true religion.

The *sixth* period comprehends the general resurrection and final judgment, and the everlasting destruction of the wicked.

The *seventh* period concludes the whole prophecy, with the vision of new heavens and a new earth, representing in strong images, the extent, security, riches, and grandeur of the heavenly Jerusalem; signifying the consummate happiness of the heavenly state; and the sure reward of all who shall be found faithful and constant in the true religion of Jesus Christ. Such is a specimen of the interpretation of the prophecies of the Apocalypse, given by Mr. Lowman, a judicious and approved writer on this subject; but the meaning ascribed to particular parts and prophecies of this book by different commentators, is very various. On this article the reader may consult Newton's Observations on the Apocalypse of St. John, apud oper. by Horsley, tom. v. p. 439—491. Mede's Works. Lowman's Paraphrase and Notes on the Revelation of St. John, preface passim. Lardner's Works. Michaelis's Introduction to the New Testament, by Marsh, vol. iv. p. 457—544.

There have been several other works published under the title of Apocalypses. Sozomen mentions a book used in the churches of Palestine, called the Apocalypse, or Revelation of St. Peter. He also mentions an Apocalypse of St. Paul, which the Coptæ retain to this day. Eusebius also speaks of both these Apocalypses. St. Epiphanius mentions an Apocalypse of Adam; Nicephorus, an Apocalypse of Efdras; Gratian and Cedrenus, an Apocalypse of Moses, another of St. Thomas, and another of St. Stephen; St. Jerom, an Apocalypse of Elias.

Porphyry, in his life of Plotin, makes mention of the Apocalypses or Revelations of Zoroaster, Zoltriar, Nicothæus, Aliogenes, &c.

APOCARITES, from ἀποκείρω, *I cut off*, in *Ecclesiastical History*, denote those who asserted that the human soul is part of, or derived from the substance of God.

The Apocaritæ are ranked as a branch of the Manichæans.

APOCARPASUM, in *Natural History*, a name given by the ancient Greeks to a poisonous drug, called also sometimes simply *carpasum*; it was the exudation of a tree growing in the country of the Abyssines, and was so like the finest myrrh, that it was often mixed with it, and many lives were lost by administering it as myrrh. The wood of the tree which produced it was also poisonous, though in a less degree, and was called by the same writers *apocarpasum*, as the wood of the balm of Gilead tree is *opobalsamum*.

APOCATASTASIS, from ἀποκαθίστημι, *I restore*, denotes the entire restitution, or reintegration of things.

In this sense, we read of the *apocatastasis* of the world, or of all things.

APOCATASTASIS, among *Astronomers*, denotes the period of a planet, or the time wherein it returns to the same point of the zodiac from which it set out.

APOCATASTASIS is also used in *Medicine*, to denote the subsiding or sinking of a thing.

In this sense, we read of the *apocatastasis* of urine, the *apocatastasis* of tumours, and other diseases.

APOCATHARSIS, in a general sense, denotes the same with *catharsis*, or expurgation.

In this sense, we read of *apocatharses* of bile, a symptom mentioned by Thucydides in the plague of Athens.

Quincy defines *apocatharses*, a purging upwards and downwards, but without sufficient authority. Hence also *apocathartica*, a denomination sometimes given to what we otherwise call simply *CATHARTICS*.

APOCENOSES, in *Medicine*, the fourth order of the fourth class, or *locales*, in the arrangement of diseases, by Dr. Cullen; comprehending those which have a flux of blood or some other humour more abundant than usual, without pyrexia, or an increased impulse of fluids. This order includes the following genera, viz. profusio, or a flux of blood; ephidrosis, or a preternatural evacuation of sweat; epiphora, or a flux of the lacrymal humour; pyalismus, or a flux of saliva; anuresis, or an involuntary flux of urine without pain; and gonorrhœa. See the several articles.

APOCHA, from *απο* and *εχω*, *I have*, in *Civil Law*, denotes an acquittance or receipt given by the creditor to his debtor for money paid: in which sense the word stands contradistinguished from *antapocha*, which is given by the debtor to the creditor. Reusner and Zieglerus have dissertations de *apochis*.

APOCHULISMA, from *απο* and *χυλιζω*, *I extract the juice*, in *Pharmacy*, denotes an inspissated vegetable juice; answering to what is called in the shops a *ROB*.

APOCOPE, compounded of the preposition *απο*, and the verb *κοπω*, *I cut*, a figure in *Grammar*, wherein part of the end of a word is cut off; as in *dic* for *dice*, *fac* for *face*, *nihil* for *nihil*, *hypo* or *hypo* for *hypochondriacal*.

A like retrenchment at the beginning of a word is called *apharefsis*.

When the *apocopation* is marked with a superior comma (called an *apostrophus*), the word is said to be *apostrophated*; as *thro'* for *through*.

APOCOPE, from *αποκοπέω*, *alscindo*, in *Surgery*, is synonymous with *Extirpatio*.

APOCRISIARIUS, formed from *αποκρισις*, *responsum*, *answer*, in *Antiquity*, an officer appointed to carry or deliver the messages, orders, and answers, of a prince or emperor. Hence he is usually called *responsalis*, q. d. *answerer*.

The apocriarius afterwards became the emperor's chancellor, and kept the seal. In the barbarous Latin we sometimes meet with *secretaria*, *secretary*, for apocriarius. Zosimus defines apocriarius, secretary for foreign affairs; being the same with what Vopiscus, in the life of Aurelian, calls *notarius secretorum*.

The title of apocriarius became at length appropriated as it were to the pope's deputy, or agent, who resided at Constantinople to receive the pope's orders, and the emperor's answer.

St. Gregory was apocriarius of pope Pelagius, at the time when he composed his morals on Job. The apocriarius did the office of the modern *NUNCIO*. Sometimes, however, he held the rank and quality of the pope's *LEGATE*.

The institution of apocriarii seems to have been in the time of Constantine, or not long after, when, the emperors

being become Christians, foreign churches had more occasion to promote their suits at court than formerly; at least we find the office established by law in the time of Justinian. In one of the novels, it is ordered, that as no bishop was to be long absent from his church without special command from the emperor, if any one had occasion to negotiate any ecclesiastical cause at court, he should prefer his petition, either by the apocriarius of his church appointed for such purpose, or by the oeconomus, or some of his clergy sent express. In imitation of the apocriarii of churches, almost every monastery had their apocriarii likewise, whose business was not to reside in the royal city, as the former did, but to act as proctors for their monastery or any member of it, when they had occasion to enter any appearance at law before the bishop under whose jurisdiction they were. This appears from another of Justinian's novels, which requires the ascetics in such cases to answer by their apocriarii or responsales. Du-Cange. Bingham. Orig. Eccles. lib. iii. cap. 13. sect. 6.

The heresy of the Monothelites, and afterwards that of the Iconoclasts, broke off the custom of having a papal apocriarius at Constantinople.

APOCRISIS, *αποκρισις*, literally denotes an *answer*. Under this denomination were anciently included, not only the rescripts of the emperors to the petitions of parties, but all kinds of decrees and mandates.

We have several books extant under the title of Apocriphes, and some in opposition to these under the title of Antapocriphes.

APOCRUSTICS, derived from *αποκρουω*, *pulso*, *pello*, *I drive*, in *Medicine*, remedies endued with a repelling and allringent power, whereby they prevent the too great afflux of humours to a part diseased. See *REPELLENTS*.

APOCRYPHAL, something dubious; or that comes from an uncertain author, on which much credit cannot be reposed. We say, an *apocryphal* book, passage, history, &c. meaning such as are of suspected authority.

Vossius observes, that, with regard to the sacred books, none are to be accounted apocryphal, except such as have been admitted neither into the synagogue, nor the church, so as to be added to the canon, and read in public.

For this reason also the books of Sibyls were anciently called apocryphal, as being committed to the trust of the *decemviri* alone; and for the like reason the annals of the Egyptians and Tyrians were called by the same name.

In the original meaning of the word, all the writings deposited in the temple were called apocryphal: because they were kept secret from the people.

When the Jews published their sacred books, they only gave the appellation of *canonical* and *divine* to such as they thus made public; and such as were still retained in their archives they called apocryphal, for no other reason but because they were not public; so that they might be really sacred and divine, though not promulgated as such.

Thus in respect of the Bible, all works were called apocryphal, which were not inserted in the Jewish canon of Scripture; and it is in this sense that St. Epiphanius is to be understood, when he says, that the apocryphal books are not put in the ark among the other inspired writings. By the ark he is supposed to have meant not the ark of the covenant, but the common archives; for, according to Josephus, there was no ark in the second temple. Nevertheless, the sacred writings were locked up in the temple; and the apocryphal books were without doubt deposited in a distinct archive from that in which the canonical books were kept. To this purpose Tertullian, speaking of the book of Enoch, says, that some did not own it, "quia nec in Judaicum ar-

morium admittitur;" and St. Austin (de Civ. Dei, l. 15.) says, that the canonical books of the Old Testament were preserved in the Jewish temple by the carefulness of the priests, who succeeded one another. Hence it is probable that the holy books were lodged in the temple in one archive, and the apocryphal in another place.

The word is derived from ἀποκρύπτω, to hide; because the origin of such books was unknown, or because they contain some mysteries not fit to be known.

The notion expressed by the word Apocrypha is taken, as we have just shewn, from the Jews, and though the word itself is of Greek original, it cannot be explained by a Greek etymology, according to which it would convey a much higher idea, and signify writings preserved in the sacred recesses of the temple. It is merely a translation of the Rabbinical word סתרים, which signifies "laid aside," so as not to be read in the synagogue: e. g. if a copy of the bible had two mistakes in one and the same page, it was allowable to correct them; but if there were three mistakes, the book must be laid aside (שליש סתרים), and they used the same expression for books, which were not supposed to be of divine authority. However the terms סתרים, and ἀποκρυφος, though similar in their original meaning, are very different in their use and application. The word סתרים was applied to books divinely inspired, but we apply the term ἀποκρυφος, apocryphal, to those, whose divine inspiration is denied. It is true that the ancient Jews made a distinction, which varied at various periods, between books that were to be read, and books that were not to be read in the synagogue, which latter the Rabbins called סתרים, but these were included in the sacred canon, whereas we apply the term *apocryphal* to those that are excluded from it; and this term, as applied by modern writers to such books as have relation to the New Testament, signifies in general "spurious or supposititious," and in this sense differs in a still higher degree from סתרים as applied to the books of the Old Testament. Fabricius in his "Codex apocryphus N. T." includes such writings as are supposed to be "a forgery;" whereas those of a similar description, which have relation to the Old Testament, are contained in his "Codex Pseudepigraphus." This term is applied by Jerom to books which by their title or otherwise make some claim to be a part of sacred scripture, but are destitute of a right to be so esteemed; and generally, or oftentimes, they are spurious. It is necessary, however, to distinguish between the terms apocryphal and spurious: a spurious work is that which is ascribed to an author who did not compose it; and apocryphal, whether written by the author to whom it is ascribed or not, is used in much the same sense with uncanonical. Michaelis uses the term apocryphal for authentic, as distinguished from inspired, and merely in opposition to canonical; and he cautions against considering it as a term of contempt, or as depreciating a book to which it is applied. The exclusion, he says, of books called on this account apocryphal, from the canon, by no means derogates from their real worth; and although there are many under this title, which are manifestly spurious, there are others again which are highly deserving our esteem. Apocryphal books, according to the definition of St. Augustine (Contr. Faust. l. xi. c. 2. and De Civ. Dei, l. 15. c. 23. n. 4.), are not such as are of authority (or received by the church,) and are kept secret; but they are books whose original is obscure, and which are destitute of proper testimonials; their authors being unknown, or their character either heretical or suspected. The term apocryphal, which is variously used, is sometimes applied to those books that are not in the canon, (see CANON:) and of these there are two classes, viz. that of useful books,

which may be read for the edification of the faithful, though doubtful and opposed, and that of the spurious pieces which are heretical and full of errors. Origen calls all the books which are out of the canon, apocryphal. Eusebius seems to use it for those wicked books that were composed by heretics, and which he distinguishes from those which are cited by ecclesiastical writers. Gregory Nazianzen, Athanasius, Epiphanius in the 8th Heresy, Rufinus, and most of the modern Greeks, give the name apocryphal to such books only, as are apparently spurious and wicked; and usually denominate those which are good and useful, ecclesiastical, though they were not received by all the churches as canonical. On the other hand, Cyril, Epiphanius in his Treatise of weights and measures, Jerom, the African Fathers, most of the Latins, and Antiochus among the Greeks, attribute the term apocryphal in general to all the books which are not in the canon. St. Austin distinguishes two sorts of canonical books; those which are received by all the churches, and those which are only received by some. Sixtus of Siena likewise distinguishes them into two classes; the proto-canonical, which have been always received and were never questioned; and the deutero-canonical, which were formerly doubted, but have been since admitted into the canon. All the rest, according to this author, are apocryphal, though this term had been sometimes applied only to heretical books. Mr. Jones lays down the following criteria or tests, by which we may determine whether any books are apocryphal or spurious, or not. That book is apocryphal, in which are found any contradictions,—which either contains any histories, or proposes any doctrines contrary to those which are certainly known to be true:—which contains things ludicrous or trifling, fabulous or silly relations;—which mentions facts that were later than the time in which the author, whose name it bears, lived:—the style of which is different from, or contrary to, the style of the author whose name it bears, in his known and undoubted writings:—the idiom or dialect of which are different from the known idiom or dialect of the author whose name it bears, or the country where he lived:—which manifests a disposition in its author, different from the known temper of the author whose name it bears:—and which for the most part is transcribed or stolen out of another.

As the number of books in the Jewish canon was equal to the number of Hebrew letters, it amounted to 22; and that this number might not be exceeded, the book of Ruth was joined to that of Judges, and the Lamentations to the prophecy of Jeremiah. The books, therefore, that were not contained in this number, were excluded from the canon, and deemed apocryphal. The ancient catalogues of the canonical books of the Old Testament, which are to be met with in Christian writers, whether Greeks or Latins, are conformable to the canon of the Jews, and contain no other books: such are those of Melito bishop of Sardis, of Origen, of the council of Laodicea, of Jerom, &c. &c. The first catalogue in which the books of Wisdom, Ecclesiasticus, Tobit, Judith, and the two Maccabees were admitted as canonical, and as having the same authority, is that of the 3d council of Carthage, A. D. 397, which confirms the decree of the council of Hippo, A. D. 303, in which these books were received into the canon. St. Augustine, according to the authority of the African church, reckons all these books as canonical. Pope Innocent I. on behalf of the church of Rome, places the same books in the canon of the Old Testament, as did also pope Gelasius in the council held A. D. 494; and moreover the decree of pope Eugenius, and the canon of the council of Trent, agree with the canon of the council of Carthage, and with the decree

of pope Innocent, and rank the above mentioned books among those of the Old Testament. See ECCLESIASTICUS, JUDITH, &c.

Among the books which have been wholly thrown out of the canon of holy scripture, we may mention a part of the book of Daniel, which the Jews rejected, containing the prayer of Azarias, and the song of the three children in the fiery furnace, which begin at the 24th verse of the 3d chapter, and end at the 91st: the history of Susanna, related in the 13th chapter; and of Bel and the Dragon, in the 14th and 15th. These subjects are not in the Hebrew or Chaldee text, nor in the Greek version of the Septuagint, but are taken out of the Greek version of Theodotion, which was then used by the church, in Daniel's prophecy, as St. Jerom has observed. Africanus, Eusebius, and Apollinarius, have rejected these narrations, not only as being uncanonical, but also as fabulous; and St. Jerom seems to be of the same opinion. Theodoret, in his exposition of Daniel, mentions neither the history of Susanna, nor that of Bel and the Dragon. However that which is related in these two chapters is cited under Daniel's name, and as part of his prophecy, by Irenæus, Clement of Alexandria, Tertullian, Origen, Cyprian, Didymus, Hilary, Basil, Gregory Nazianzen, Ambrose, Augustine, the author of a homily erroneously attributed to Chryostom, Fulgentius, Avitus, and Bede. Sulpitius Severus, and the author of the Synopsis of Athanasius, mention these histories as part of the sacred text; though the latter owns, that the history of Susanna is one of the dubious books. Ambrose quotes the words of Daniel, related in the third chapter, as being certainly of divine inspiration; and Rufinus upbraids Jerom for having cut off from Daniel the song of the three children, the history of Susanna, and that of Bel and the Dragon. The council of Trent, sess. 4. declared the following six books to be canonical, viz. Tobit, Judith, Wisdom, Ecclesiasticus, and the first and second of Maccabees; but joined Baruch with Jeremiah, so that the whole number amounts to seven. The apocryphal books enumerated in the 6th article of the church of England, are the 3d and 4th of Esdras, the book of Tobias, that of Judith, the rest of the book of Esther, that of Wisdom, that of Jesus the son of Sirach, Baruch the prophet, the Song of the three children, the story of Susanna, of Bel and the Dragon, the prayer of Manasses, and the first and second books of Maccabees. These books, by the same article, the church doth read for example of life and instruction of manners, but doth not apply them to establish any doctrine. Accordingly in the table prefixed to the Common Prayer, and appointing the lessons, they are directed to be read in the months of September, October and November. It appears, however, that in the Common Prayer of Edward VI. there was for Nov. 22d and 23d, no Bel and Dragon, nor history of Susanna; but the order proceeded from Baruch to Jeremiah. The apocryphal books are prohibited in the other reformed churches. The Puritans, in the reign of queen Elizabeth, disliked and objected to the reading of these books in the church.

The spurious and apocryphal books, composed in the early days of Christianity, published under the names of our Saviour, his apostles, their companions, &c. and mentioned by the writers of the first four centuries, under the titles of gospels, epistles, acts, revelations, &c. are numerous. Most of them have been long lost, and some few are still extant, to which class belong our Saviour's letter to Abgarus; his letter, which fell down from heaven at Jerusalem, directed to a priest named Leopas, in the city Eris; the constitutions of the apostles; the creed of the apostles; the apostolical epistles of Barnabas, Clemens, Ignatius, and Polycarp; the shepherd

of Hermas; the gospel of the infancy of our Saviour; the gospel of the birth of Mary; the prot-evangelion of St. James; the gospel of Nicodemus; the martyrdom of Thecla or acts of Paul; Abdias's history of the twelve apostles, or the acts of Pilate; St. Paul's epistle to the Laodiceans, and St. Paul's six letters to Seneca, &c.; the others, that are not extant, are enumerated by Mr. Jones, *ubi infra*. These books were not much used by the primitive Christians. There are no quotations of them in the apostolical fathers, i. e. Barnabas, Clement of Rome, Hermas, Ignatius, and Polycarp, whose writings reach from about the year of our Lord 70, to the year 108. Some of them are mentioned, but not cited, by Irenæus and Tertullian. Several of them are mentioned and quoted by Clement of Alexandria and Origen, but never as having authority, and sometimes with expressions of disapprobation. Eusebius mentions some of them, and says, that they were of little or no value, and that they were never received by the founder part of Christians. Athanasius, without naming any of them, passes a severe censure upon them in general; and Jerom speaks of them with dislike and censure. We may observe further, that these books, so far from militating against the evangelical history, confirm it; for they are written in the names of such, as our authentic scriptures say, were apostles, and companions of apostles; and they all suppose the dignity of our Lord's person, and a power of working miracles, together with a high degree of authority, to be conveyed by him to his apostles. It ought also to be considered, that few, if any, of these books were composed before the beginning of the second century. As they were not composed before that time, they might well refer to the commonly received books of the New Testament, as most of them certainly do; and therefore, instead of invalidating the credit of our books, they really bear testimony to them. All these books are not properly spurious, that is, ascribed to authors who did not compose them; but as they were not composed by apostles, nor at first ascribed to them, they may be fitly called apocryphal; for they have in their titles the names of apostles, and they make a specious pretence of delivering a true history of their doctrine, discourses, miracles, and travels, though that history is not true and authentic, and was not written by any apostle or apostolical man. Moreover, we may account for the publication of these apocryphal or pseudepigraphal books, as they were unquestionably owing to the fame of Christ and his apostles, and the great success of their ministry. And in this respect the case of the apostles of Christ is not singular: many men of distinguished characters have had discourses made for them which they themselves knew nothing of, and actions imputed to them which they never performed; and eminent writers have often had works ascribed to them, of which they were not the authors. Christians of former ages exercised a laudable caution and circumspection with regard to books of doubtful authority. For a good while, the epistle to the Hebrews, some of the Catholic epistles, and the revelation, were doubted of by many, when other books of the New Testament were universally acknowledged. Upon the whole, the books, now and for a long time called apocryphal, afford no valid argument against either the genuineness or the authority of the books of the New Testament, generally received as written by apostles and evangelists; but they sanction the truth of their genuine writings, and the reputation of their character; they confirm the general account given us in the canonical scriptures, and thus they indirectly establish the truth and divine original of the gospel.

The writing of books under spurious names, and obtruding them for the works of inspired authors, though once reputed laudable, and consecrated under the name of pious

fraud, was condemned very early by an apostolical canon, in the instance of a priest who was deposed for forging the acts of Paul and Thecla. Bing. Orig. Eccl. lib. xvii. cap. 5.

Fabricius has published the fragments and remains of the apocryphal books both of the Old and New Testament. Fabric. Codex Pseudepigraphus Veteris Testamenti, Hamb. 1722 & 1723, 8vo. 2 vol. Codex Apocryphus Novi Testamenti, 2 vol. Hamb. 1719, &c. 8vo.

Wolffius has given the literary history of the apocryphal books, their various editions, translations, commentaries, &c. See also Jones's Canon, vol. i. and vol. ii. Dupin's complete history of the Canon, &c. ch. i. Lardner's works, in various places. Michaelis's Introd. vol. i. p. 170. p. 376.

APOCYMA, from *απο*, and *κυμα*, wave, in the *Materia Medica* of the Ancients, a name given by the Greek authors to a sort of cement, used to daub over the bottoms of their ships, to preserve them from injuries by the water; they called this also by the name of *zopissa*; and Avicenna and Scapian call it *ketran*, *kiran*, or *alkitran*. It was a mixture of bees-wax and pitch melted together, and after it had been soaked some time in the sea-water, it was supposed to have peculiar virtues, and was used in many compositions.

APOCYNUM, (*ἀπό κυνος*, because it is supposed to kill dogs), in *Botany*, Dog's-bane. Lin. gen. 305. Schreb. 426. Juss. 146. Class, *pentandria digynia*; nat. order, *contortie*; *apocinea*. Juss. Gen. Char.; cal. perianth, one-leaved, five-parted, acute, short, permanent; cor. monopetalous, bell-shaped, semiquinquefid; divisions revolute; nectary, five glandular oval corpuscles surrounding the germ; *stam.* filaments very short; anthers oblong, erect, acute, converging, bifid at the base; *piſt.* germs two, ovate; styles, short; stigma, roundish, bifid at the tip, mucicate, glued to the anthers; *per.* follicles two, long, acuminate, one-valved, one-celled; *seeds* very small, numerous, crowned with a long down; receptacle subulate, very long, rough, free.

Essen. gen. char. cor. bell shaped; nectaries five, alternate with the stamens.

Species. 1. *A. androsamifolium*, *tuslan-leaved dog's-bane*; stem straightish, herbaceous, leaves ovate, smooth on both sides; cymes terminating; its stems are erect about three feet high; leaves opposite; flowers white, with purplish nectaries. If flies alight on this plant they are frequently entangled by the glutinous matter and destroyed. Hence this plant has been called *Herbe à la puce*. It is a native of Virginia and Canada, flowering from July till September: a perennial, cultivated by Miller, in 1731. 2. *A. cannabinum*, *hemp dog's-bane*; stem straightish, herbaceous; leaves oblong; cymes lateral, longer than the leaf; stems about two feet high; leaves in pairs, smooth, and like the former abounding with a milky juice; flowers small, of an herbaceous white colour, and not having an handsome appearance. The plant is only cultivated for the sake of variety. It flowers about the same time, and is a native of the same countries as the former species. The Indians of North America use this species for the same purpose as we do hemp. It was cultivated by the duchess of Beaufort, in 1699. 3. *A. hypericifolium*, *St. John's-wort-leaved dog's-bane*; stem straightish, herbaceous; leaves oblong-cordate, smooth; cymes shorter than the leaf. Martyn's Miller's Dict. *A. sibericum*, Lin. syst. Jacq. hort. 3. 37. t. 66. an annual, a foot and a half high, with opposite, sharpish, subsessile leaves, and small inodorous flowers. A native of North America, cultivated in 1756, by Miller. 4. *A. venetum*, *spear-leaved dog's-bane*; stem straightish, herbaceous; leaves ovate-lanceolate: a perennial, about two feet high: leaves opposite, smooth; flowers

in small umbels, purple or white, appearing in July and August. It grows in the islands of the Adriatic. Cultivated here in 1690. 5. *A. minutum*, *pretty dog's-bane*; stems prostrate; leaves hastate; stems filiform, about seven inches long; leaves opposite; peduncles alternate, umbelled with about six flowers. Found at the Cape by Montin. 6. *A. filiforme*, *thread-leaved dog's-bane*; stem prostrate, herbaceous; leaves filiform, flowers umbelled. Found at the Cape by Thunberg. 7. *A. frutescens*, *shrubby dog's-bane*; stem erect, shrubby; leaves lanceolate-oval; corolla acute, villose at the throat; flowers salver-shaped, on axillary peduncles, in loose bunches, and of a purple colour. A native of the East Indies, Ceylon, and the coast of Guinea. 8. *A. reticulatum*, *net-leaved dog's-bane*; stem twining, perennial; leaves ovate veined. This species climbs to a considerable height; its dark green leaves are beautifully reticulated with milky veins. A native of the East Indies and Cochin-China, cultivated by Miller. 9. *A. linear*, *linear-leaved dog's-bane*; stem twining, herbaceous; leaves linear, flat; umbels axillary, compound. Discovered at the Cape of Good Hope by Thunberg. 10. *A. triflorum*, *three flowered dog's-bane*; stem twining, herbaceous; leaves lanceolate; umbels axillary, two or three-flowered. Found at the Cape by Thunberg. 11. *A. juvenas*, *renovating dog's-bane*; stem twining, shrubby, leaves ovate, hairy; racemes dichotomous; the stem is hairy, red, usually procumbent; flowers greenish yellow, small, cut into lanceolate segments, which are three times the length of those of the calyx. A native of Cochin-China. This plant is esteemed by the Chinese for possessing similar properties to those of the ginseng. Lour. Coch. 12. *A. alterniflorum*, *alternate flowered dog's-bane*; stem climbing, shrubby, leaves ovate, acuminate, smooth; axils alternate, umbelliferous; flowers pale, inodorous; nectary composed of ten lobes. It grows in the islands near Canton. 13. *A. africanum*, *african dog's-bane*; stem suberect, shrubby; leaves ovate-oblong; peduncles two or three flowered. Loureiro Coch. A native of the coast of Zangubar in Africa. Mr. Miller enumerates six other species. 14. *A. scandens*, *climbing dog's-bane*; leaves oblong-cordate, stiff; flowers lateral; stem shrubby, twining. It was discovered by Plumier in some of the French islands in America, and by him described to be citron-leaved with maculated pods. Since that time it has been found near Carthagea in New Spain, from whence seeds have been transmitted here, which have succeeded in several gardens. Miller. 15. *A. nervosum*, *nerved-leaved dog's-bane*; leaves ovate, nerved; cymes lateral; flowers yellow, large, with a long tube; stem shrubby, climbing. A native of New Spain, near Carthagea. Miller. 16. *A. cordatum*, *heart-leaved dog's-bane*; leaves oblong-cordate, pointed, sessile; flowers lateral; stem climbing. 17. *A. villosum*, *villose-flowered dog's-bane*; leaves cordate, smooth; flowers villose, lateral, on long peduncles; stem climbing. Both the two last species were discovered at La Vera Cruz, in 1729, by Dr. Houffoun, who sent their seeds to England, where they have risen in stoves to the height of twenty feet, but the last, though more luxuriant than the other, never had any appearance of flowers. The pods of these plants afford a cottony down which is in great esteem in France for stuffing chairs, making quilts, &c. The French call it *Delawad*; and in the southern parts of France there are several plantations of some of these species for the sake of the down.

Propagation and culture. The first, second, and third sorts are propagated by parting their roots in March, before they put out new stems. They are hardy enough to thrive in the open ground; but the soil should be light and dry, other-

wife the roots are apt to rot in winter. The fourth sort will also live in the open air, provided it be planted in a warm situation and dry soil. The spring, before the stems shoot out, is the best time to remove it. The other species are tender, and must be constantly kept in a hot-house, plunged in the tan-bed. They may be propagated by cuttings, during the summer months; but should be laid dry in the stove three or four days before they are planted. When the seeds are obtained from their native places, they should be sown in pots filled with light sandy earth, and plunged into a tan-pit: in a month or five weeks they will appear, and should then be watered sparingly. As they advance, they will require larger pots; and the second year the plants will generally flower, and some of them make a fine appearance. Martyn Miller's Dict.

APOCYNUM. See ASCLEPIAS, CEROEGIA, CYNANCHUM, and ECHITES.

APODA, in *Ornithology*, a species of PARADISEA, called the greater bird of paradise. The side feathers are longer than the body; the two middle tail feathers long and fetaceous. Gmelin. This is called Manucodiata, by Brisson and Marcgrave; Paradisea Avis, by Seba, &c.; Oiseau de Paradis, by Buffon; bird of Paradise, by Willughby; and Greater Bird of Paradise, by Albin and Edwards.

This bird appears from the plumage to be as large as a pigeon, but the body scarcely exceeds in size that of the thrush. The length is twelve inches, the bill greenish yellow, and an inch and an half in length; its eyes are small; head and neck covered with short thick feathers, of which those on the head and hind part of the neck are of a pale gold colour. The base of the bill is surrounded with black; front of the neck green; lower part of the neck, back, wings, and tail are chestnut, deepest on the breast, where it assumes a tint of purple. From under the wings spring a great quantity of feathers, which are loosely webbed, and appear like the herring-bone; some of these are eighteen inches in length, and of different colours; but the prevailing tint is yellowish white. The legs are stout and of a brown colour.

The female is said to be like the male, except that the webs of the two wire-like feathers in the tail are shortest. They inhabit the Molucca islands, and those surrounding New Guinea, and particularly that of Aroo. It is supposed they breed in New Guinea, from whence they emigrate in the westerly or dry monsoon, and return when the easterly or wet monsoon commences. They are seen at these times in flights of thirty or forty, with a leader at their head, which is constantly seen flying higher than the rest. During their flights, it is observed they take the advantage of going against the wind, and have a cry like the starlings; but should the wind shift, they are in great distress, and croak like ravens, for their long scapular feathers then become ruffled, their flight is impeded, and they fall to the ground, from which they cannot rise until they gain an eminence, or into the water, from which they cannot extricate themselves. The natives, who make a trade of their skins with the Dutch, watch this opportunity, and take them in large numbers: the value of each to the people of Aroo is a *spike-nail*; but at Banda they fetch half a rix-dollar apiece, and perhaps of late more, since it is the plume of this species which has become a fashionable ornament to the head-dresses of the ladies in England. The food of these birds is not certain; some say they feed on berries; others, on butterflies; and others again, on small birds; the latter of which is probable, as they are very courageous, and are furnished with claws and beak of strength sufficient for that purpose. They were formerly brought to Europe without legs, and many were persuaded they never had any; but

the truth is, the legs being useless for the purpose of ornament, the only motive for which they are taken, are torn off on the spot, and thrown aside. They were worn in the East Indies by people of distinction; the grandees of Persia and Surat use them as aigrettes, and even adorn their horses with them.

In Forrest's Voyage to New Guinea, &c. a smaller bird of this kind is described as a native of Papua; Gmelin makes it a variety only (β) of this species.

APODACRYTICA, from $\alpha\pi\sigma\sigma$ and $\delta\alpha\kappa\upsilon$, a *tear*, in *Pharmacy*, medicines proper to excite tears. Some also use the term apodacrytica, for remedies proper to suppress tears.

APODECTÆ, from $\alpha\pi\sigma\delta\epsilon\chi\omicron\mu\alpha\iota$, *I receive*, in *Antiquity*, a denomination given to ten general receivers, appointed by the Athenians, to receive the public revenues, taxes, debts, and the like.

The apodectæ had also a power to decide controversies arising in relation to money and taxes, all but those of the most difficult nature and highest concern, which were reserved to the courts of judicature.

APODECTÆI, in the Athenian government, officers appointed to see that the measures of corn were just.

The *apodectai* were nearly related to the *agoranomi*.

APODEMICA, from $\alpha\pi\sigma\delta\eta\mu\epsilon\upsilon$, *I travel*, the doctrine or science of travelling, whether for knowledge or devotion's sake.

Jo. Meraker has published an apodemica. Ranzovius, a *methodus apodemica*.

APODES, in a general sense, from α and $\pi\omicron\upsilon\varsigma$, denotes things without feet. Zoologists apply the name to a fabulous sort of birds said to be found in some of the islands of the New World, which being entirely without feet, support themselves on the branches of trees by their crooked bills.

The Germans and Dutch have also their apodes, a sort of birds somewhat like swallows, whose legs and feet are so very small, that they seem rather formed for creeping than running.

APODES, is one of the four orders of fishes in the Linnean distribution of animals. Their character is that they have no belly fins.

APODICTICAL *argument*, or SYLLOGISM, signifies a clear convincing proof, or demonstration of a thing. The word is formed of $\alpha\pi\sigma\delta\epsilon\mu\omicron\nu\mu\alpha\iota$, *I demonstrate*.

APODICTICAL *method*, is used by some writers, to denote the systematical or scientific method of teaching or writing.

APODIOXIS, from $\alpha\pi\sigma\delta\iota\omicron\chi\iota\varsigma$, *I exclude*, in *Rhetoric*, a figure whereby we either pass over a thing slightly, or refer treating of it to some other time or place.

This is also called by Latin writers, *rejection*, e. g. "Quid ego senatum defendam, judices? Equidem debeo," &c. Again, "Quid ego senatum hoc loco defendam, judices? Fiat id rectius, tum quum," &c.

APODIOXIS, in *Logic*, the rejection of such things as do not necessarily belong to the question to be considered.

APODIPNE, or APODEIPNE, songs which the Greeks sung after supper; either to thank the Gods, or congratulate themselves for their good fare.

APODIXIS, from $\alpha\pi\sigma\delta\epsilon\mu\omicron\nu\mu\alpha\iota$, in *Rhetoric*, denotes an evident proof, or demonstration of a point.

We have several books extant under the names of apodixes; and some by way of answer to these, under that of antapodixes.

APODIXIS, in *Middle-Age Writers*, denotes a receipt for money paid. In which sense it amounts to the same with *apocba*.

APODIXIS is also sometimes used for a specimen or proof of a thing.

APODOSIS, from $\alpha\pi\sigma\delta\omicron\delta\omicron\varsigma\iota\varsigma$, *I apply*, in *Rhetoric*, makes

the third part of a complete exordium, being properly the application, or restriction of the preface.

The apolysis is the same with what is otherwise called *anthesis*, and stands opposed to *prothesis*, *c. p. p. p. p.* "all branches of history are necessary for a complete history; but that without them, it can never make any considerable figure;" *ap. l. f. s.* "but history is of a more special use, which recommends it." *ib. s. p.*

Apodosis is also used in the law of homicide, for that part which makes the acquittal of the murderer.

Apodosis is also used, in a rhetorical period, for the consequent to a preface, or antecedent preface.

Apodosis is also used for a return to something antecedent, or that went before.

This is otherwise called *anthesis*.

APODYTERIUM, *form. d. or. = δωα, to undress, in Antiquity*, a dressing room, or apartment at the entrance of baths, or in the palestra, wherein persons dressed and undressed, either for bathing, or for the gymnastic exercises.

This was otherwise denominated *corricum, gymnasium, and spoliarium*.

Some will have the apodyterium to have been the same with the *coniferium*; but Vossius shows they were two different places.

APOGEE, formed of *απο, from*, and *γη, earth*, in *Astronomy*, that point in the orbit of the sun, or a planet, which is farthest distant from the earth.

The apogee is a point in the heavens at the extreme of the line of the apsides; in which the sun, or a planet, is at the greatest distance that it can be at, from the earth, in its whole revolution, and the opposite point to this is called the **PERIGEE**.

The ancient astronomers, regarding the earth as the centre of the system, chiefly considered the apogee and perigee; the moderns, making the sun the centre, change the apogee and perigee for **APHELION** and **PERIHELION**.

The apogee of the sun is, therefore, the same with the aphelion of the earth, and the perihelion of the sun the same with the perigee of the earth. The manner of determining the place of the apogee of a planet is exactly the same with that for determining the place of the aphelion for the sun and superior planets. See **APHELION** and **PLANETS**. The place of the apogee of the sun, at the beginning of the year 1750, was, according to the tables of La Caille, $3^{\circ} 8' 58'' 4''$.

The quantity of the motion of the apogee may be found by comparing two observations thereof made at a great distance of time; converting the difference into minutes, and dividing it by the number of years elapsed between the two observations: the quotient gives the annual motion of the apogee. Thus, from an observation made by Hipparchus in the year before Christ 140, whereby the sun's apogee was found $5^{\circ} 32'$ of Π ; and another made by Ricciolus, in the year of Christ 1646, wherein it was found $7^{\circ} 26'$ of Θ ; the annual motion of the apogee is found to be $1' 2''$. See **APHELION**.

Its secular motion, with respect to the equinoxes, is, according to the tables of La Caille, $1^{\circ} 49' 10''$. The cause of this motion is the attraction of the planets, particularly of Venus and Jupiter, as M. Euler has shewn in his tract "On the inequalities of the earth," which obtained the prize of the Academy of Sciences, in 1756.

The apogee of the moon, in 1750, was in $5^{\circ} 21' 2' 32''$, and its annual motion is about $1' 10' 39' 50''$; and the resolution of the apogee, according to the tables of Mayer, in relation to the fixed stars, is performed in 8 years, 311 days, or 3231 days, $8^h 34' 57\frac{1}{2}''$.

Besides the progressive motion of the apogee of the moon, astronomers have also considered the orbit of the moon as subject to an equilibrium of its apogee, joined to a variation in its eccentricity. Horrox was the first author of this ingenious hypothesis, which Newton adopted in his "Principia," and upon which are founded Halley's tables of the moon, and those of Flamsteed, which were published by M. le Monnier, in his "Astronomical Institutions." M. Euler was the first who substituted to this hypothesis an equation more convenient, and called *evanescence*, the quantity of which is $1' 26' 34''$. In order to explain the hypothesis of Horrox agreeably to the principles of attraction, it ought to be considered that the motion of the apogee of the moon depends upon the diminution of the central force of the moon towards the earth; so that the motion ought to be the greatest when the line of the syzygies coincides with the line of the apsides, or when the place of the sun corresponds to the apogee or perigee of the moon. When it is in the quadratures, the motion of the apogee is the slowest, because the total diminution of the central force is then the least; when the sun is at 45° from the apsides, the true motion of the apogee is equal to the mean motion; but his true place differs then the most from the mean place, and the equation is the greatest, because it results from all the degrees of velocity which the apogee has acquired to this point. This equation, in the tables of Halley, amounts to $12^{\circ} 18'$. There is also an inequality in the place of the apogee, which proceeds from the distances of the sun with respect to the earth, and which is $23' 12''$ additive, when the sun is at 3 signs of anomaly: this is an annual equation. See **MOON**.

APOGRAPH, a copy or transcript of some book or writing. The word is formed of *απο, ab, from*, and *γραφω, I write*. In this sense apograph stands opposed to *autograph*, as a *copy* to an *original*.

APOGRAPHE, in the *Ancient Law*, was, when a person being sued for money supposed due to the public, pleaded that the charge was unjust, and withal produced all the money he was possessed of, and declared by what means it came to his hands.

Suidas adds, that it is sometimes taken for an action against such as neither paid the fines laid upon them before the ninth *prytanea* following their sentence, nor were able to give sufficient security to the city. Potter, *Arch. Græc.* lib. i. cap. 23.

APOGRAPHE, in the Roman *Law*, denotes a catalogue or inventory of goods.

APOKERA, in *Geography*. See **CAPE BECUR**.

APOKOPA, in *Ancient Geography*, a name given to the **CAPE BAXOS** of the Portuguese, situate upon the coast of Zanguebar.

APOLDA, in *Geography*, a town of Germany, in the circle of Upper Saxony, and principality of Weimar, eight miles N. W. from Weimar, and 40 S. W. from Leipzig. N. lat. $50^{\circ} 56'$. E. long. $11^{\circ} 22'$.

APOLEPSIS, from *απολεπω, I leave*, in the Athenian *Law*, an action of divorce; brought when a woman had fled from her husband.

APOLEPSIS, from *απολαμβάνω, I retain*, in the *Ancient Physic*, denotes a retention of the urine, or any other matter which ought to be evacuated.

APOLEPSIS is also understood of an interception of the blood or spirits, or an extinction of the native heat of the veins.

APOLEPSIS is also a denomination of a species of apoplexy, wherein the speech, sense, motion, &c. suddenly fail.

This seems to coincide with what is otherwise called a *CATALEPSIS*.

APOLIDES, from α and $\pi\omega\lambda\iota\varsigma$, *city*, in *Antiquity*, those condemned for life to the public works, or exiled into some island, and thus divested of the privileges of Roman citizens.

APOLLINARIANS, *APOLLINARISTS*, called also by Epiphanius, *Dimertite*, in *Ecclesiastical History*, ancient heretics, who denied the proper humanity of Christ, and maintained that the body which he assumed was endowed with a sensitive, and not a rational soul, but that the Divine Nature supplied the place of the intellectual principle in man.

This sect derived its name from Apollinaris, bishop of Laodicea in the fourth century.

The *Apollinarians* have been charged with other opinions, such as the *Millenarian* and *Sabellian*, the pre-existence of the body of Christ, and the passion of his Deity; but ecclesiastical writers are not agreed with respect to these and other particulars. Their doctrine was first condemned by a council of Alexandria, in the year 362, and afterwards in a more formal manner by a council at Rome in 375; and by another council in 378, which deposed Apollinaris from his bishopric. Notwithstanding these censures, his doctrine spread through most of the churches of the East; and his followers were subdivided into various sects. The sentence against Apollinaris and his followers was confirmed by a council held at Alexandria in 378, by an oecumenical council, assembled at Constantinople in 381, as well as by the council of Antioch in 379. In 388, the emperor Theodosius enacted a law, forbidding them to hold assemblies, to have any ecclesiastics or bishops, or to dwell in cities. The rigorous execution of this law, in concurrence with the decrees of different councils, reduced them to a very small number, and their doctrine had no long duration. Dupin. Mosheim. Lardner. Bower's *Lives of the Popes*. Gen. Dict.

The doctrine of Apollinaris, viz. that the Logos, a divine person, which descended from heaven, supplied the place of a soul in Christ, says a learned and acute writer, (*Mordecai's Letters*, p. 53.) is plain and intelligible; and answers much better than any other to the texts, which assert that "Christ took on him the seed of Abraham—was made in the likeness of man—God was manifest in the flesh—came in the flesh, in the likeness of sinful flesh—in him dwelleth the fulness of the Godhead; the Word was made flesh—was incarnate." "All these texts of scripture," says Dr. Sykes (*External Peace of the Church*, p. 29, 30.), "are, upon the Apollinarian scheme, natural, plain, and easy; it teaches a most proper unity of person; as making the God-man, Jesus Christ, to be strictly one intelligent agent." It makes the very same person suffer and die, that came down from heaven; which is the fundamental article of the Christian religion. Mr. Whiston also says (see *Account of the Convocation's proceeding against him*, p. 87.), "the scripture and earliest antiquity never affirm that Christ took a human rational soul; they never say he took a whole human nature; never say, he was in that sense a true and perfect man; but that he was made flesh, had a body prepared for him; was the Word, or a God incarnate; was made in the likeness of man; was found in fashion as a man, while he was God the Word. Nay, Ignatius directly affirms, that it was the Word, and not a human soul, which inhabited in that body; and almost all the ancients agree in the same doctrine; even Athanasius himself, before the council of Nice." Notwithstanding the pains that were

taken to discourage this opinion, it appeared again in different forms, in the Christian church, in the doctrine of the Monothelites, who held, that Christ had only one will, which, without doubt, is sufficient for one person.

APOLLINARIAN GAMES, *Apollinares ludi*, in *Antiquity*, games at Rome, instituted A. U. C. 541, celebrated yearly in honour of Apollo, on the fifth day of July, under the direction of the prætor, in the Circus maximus.

The occasion was a kind of oracle delivered by the prætor Marcus, after the fatal battle at Cannæ, declaring that, to expel the enemy, and cure the people of an infectious disease which then prevailed, sacred games were to be annually performed in honour of Apollo. And that the prætor was to have the direction of them; and the *decemviri* were to offer sacrifices after the Grecian rite.

The senate ordered that this oracle should be observed, because another of the same Marcus, wherein he had foretold the overthrow at Cannæ, had been verified; for this reason they gave the prætor twelve thousand *asses* out of the public cash to defray the solemnity. There were sacrificed an ox to Apollo, as also two white goats and a cow to Latona; all with their horns gilt. Apollo had also a collection made for him, besides what the people, who were spectators, gave voluntarily. The first prætor by whom they were held was P. Cornelius Sylla. For some time they were moveable and indictive, but at length were fixed, under the prætorship of P. Licinius Varus, to the fifth of July, and made perpetual. Livy, xxvii. c. 25. tom. iv. p. 75. Ed. Drakenb.

The men who were spectators at these games, wore garlands on their heads; the women performed their devotions in the temples at the same time; and at last they caroused together in the vestibules of their houses, the doors standing open.

The tradition reports, that at the first celebration hereof, the people were suddenly invaded by the enemy, and obliged to take to their arms: upon which occasion a cloud of darts and arrows falling upon their enemies, the Romans soon returned victors to their sports.

The Apollinarian games were only scenical; and at first only observed with singing, piping, and other sorts of music; but afterwards there were also introduced all kinds of mountebank tricks, dances, and the like, yet so as that they still remained scenical, no chariot races, wrestlings, or the like laborious exercises of the body, being ever practised at them. Danet, and others, confound the *ludi Apollinares* with the *Actiæ* or *ACTIAN GAMES*.

APOLLINARES LUDI was also a general name given to all *SCENICAL GAMES*.

These were also called *ludi liberales*, and *scenici*.

They differed from the *ludi theatrales*, in that the former were celebrated with all sorts of plays, farces, poems, recitations, &c. the latter only by dancing and music.

This kind of *Apollinarians* had their share in almost all the solemn games.

APOLLINARIS, *CLAUDIUS SULPITIUS*, in *Biography*, a celebrated grammarian, was born at Carthage, and flourished in the second century under the Antonines. He was succeeded in his profession by his scholar Helvius Pertinax, who afterwards became emperor: to him are ascribed the verses prefixed to the comedies of Terence, and the following epigram written upon the orders which Virgil gave to burn his *Æneid*:

"Infelix alio cecidit prope Pergamon igne,
Et pene est alio Troja cremata rogo."

Julius Cæſar (l. viii. c. 10.) ſpeaks of him in terms of very high commendation; repreſenting him as “the moſt famous man of the age,” and as altogether deſtitute of pedantic arrogance. Gen. Dict.

APOLLINARIUS, SIDONIUS C. SOLLITUS, an eminent biſhop of France, was born at Lyon, of a noble family, in the year 431, and educated under maſters by whoſe iſtruction he profited ſo as to make a great proficiency in the arts and ſciences, and particularly in poetry and polite literature. His firſt profeſſion was military, in the exerciſe of which he was captured by Majorianus, by whom his father-in-law, Avitus, was deprived of the empire; but having been kindly treated by the new emperor, he compoſed in honour of him a panegyric, for which he had a ſtatue erected to him at Rome, and was honoured with the title of Count. In 467, the emperor Anthemius raiſed him to ſeveral poſts of dignity, and erected a ſtatue to him for a ſimilar ſervice. But quitting military and civil employments, he was preferred to the biſhopric of Clermont, the duties of which he is ſaid to have diſcharged with great integrity. Having occupied this ſee 15 years, he died, according to Dupin, in 487; but according to Cave and Olearius, in 482. He has been eſteemed the moſt elegant writer of the age in which he lived, both in proſe and verſe. Beſides his panegyrics on the emperors, there are extant poems addreſſed to his friends upon particular ſubjects, and letters collected in ſix books, containing a variety of particulars relating to polite literature and proſaic hiſtory. His works were printed at Baſil in 1543, 8vo.; at Lyons, in 8vo. in 1552; and at Paris, in 4to. in 1590; and in 8vo. in 1614. They are publiſhed in the ſixth volume of the “*Bibliotheca Patrum.*” Cave, Hiſt. Lit. vol. i. p. 453. Gen. Dict.

APOLLINARIUS, OF APOLLINARIUS, CLAUDIUS, was biſhop of Hierapolis in Phrygia, A. D. 176, and flouriſhed in the time of M. Antoninus, to whom he preſented an apology for the Chriſtian faith. Eusebius and Photius mention other works, none of which are now extant. Eusebius informs us, that Apollinaris had mentioned the extraordinary deliverance and victory obtained by Antoninus in the year 174, when the thundering legion became ſo famous. Theodoret, in mentioning his writings againſt the Montaniſts, ſays, that he was worthy of praife, and that he had added to the knowledge of religion, the ſtudy of polite literature; and Photius commends his ſtyle. Lardner’s works, vol. ii. p. 294.

APOLLINARIUS, or APOLLINARIS, the elder, was a native of Alexandria, and flouriſhed about the middle of the fourth century, or according to Cave, A. D. 362. He was diſtinguiſhed, both as a grammarian and a divine. After having been a teacher of grammar at Berytus in Phœnicia, he became preſbyter at Laodicea in Syria. Under the reign of Julian, when the Chriſtians were forbidden the uſe of the Greek and Roman classics in their ſchools, he compoſed a grammar in a Chriſtian form, and wrote many books in imitation of the ancients. He translated the books of Moſes into Greek heroic verſe, and wrote in the ſame manner the whole hiſtory of the Hebrews to the time of Saul, which he divided, like Homer’s Iliad, into twenty-four parts, to which he prefixed, in regular ſeries, the letters of the alphabet. The remaining hiſtorical books of the Old Teſtament he exhibited partly in hexameters, and partly in a dramatic or lyric form, imitating the tragedies of Euripides, the comedies of Menander, and the odes of Pindar. Sozomen (Eccleſ. Hiſt. l. vi. c. 15.) ſpeaks highly of his talents and performances, and leads us to lament, in proportion to our confidence in his judgment,

“works equal in number and merit to the ancient Greek mod 13.” Suidas. Cave, Hiſt. Lit. vol. i. p. 225.

APOLLINARIUS, or APOLLINARIS, the younger, the ſon of the former, was the diſciple of Epiphanius the loſophiſt, and taught grammar at Laodicea, of which city he was at length ordained biſhop. At the time, viz. A. D. 362, when Julian iſſued the decree mentioned in the preceding article; he concurred with his father in rendering ſervice to the Chriſtians; and he is ſaid to have put the goſpels and the apoſtolic doctrine into dialogues after the manner of Plato. He alſo wrote commentaries on the book of Pſalms, the Eccleſiaſtes, the prophecy of Iſaiah, that of Daniel, (rejeſting the ſtories of Sulanna, and Bel and the Dragon, as not extant in Hebrew.) and that of Hoſea, and likewiſe on ſeveral books of the New Teſtament. His apology for the Chriſtian religion againſt Porphyry, in thirty books, is mentioned with commendation by Jerom and others. Some learned men have been of opinion, that he publiſhed a new Greek tranſlation of the books of the Old Teſtament, compiled from the Greek verſions that had been made before; but this does not ſeem to have been a fact, though Fabricius enumerates this as one of his works. Sozomen (Eccleſ. Hiſt. l. v. c. 18. p. 624.) mentions a valuable work of this author, addreſſed to the emperor himſelf and the Greek philoſophers, intitled, “Of the truth;” in which he ſhewed, by reaſon alone, without alleging the divine ſcriptures, that they did not think rightly of the deity. It is ſaid, that Julian writing to ſome Chriſtian biſhops concerning this book, made this remark; “I have read, underſtood and condemned;” to which he received this answer, “You have read, but you did not underſtand; if you had underſtood, you would not have condemned.” Beſides all theſe, Apollinaris wrote divers books againſt thoſe called heretics; and he employed his poetical talents in compoſing ſhort pſalms and hymns fitted for feſtivals and for all ſeaſons, on a variety of ſubjects; ſome of which were uſed in their religious aſſemblies, and others were ſung by the men at their works and entertainments, and by the women at their ſpindle. For an account of the doctrine of Apollinaris, and of the ſect of which he is ſaid to have been the founder, ſee APOLLINARIANS.

The character of Apollinaris has been very differently appreciated by modern writers. Lord Chancellor King, the reputed author of “The Apoſtle’s Creed,” &c. calls him the great Apollinaris, the ornament and ſplendor of the church of that age, the moſt ſignalized champion for the faith, and an illuſtrious example of piety and virtue; by all eſteemed the greateſt man of his age both for learning and piety; a moſt accurate and nervous defender of the faith againſt all its enemies, whether heathens or heretics. Dupin ſays, he was beloved and eſteemed by St. Athanaſius, St. Baſil, St. Epiphanius, and all the great men of his age, for learning and knowledge. St. Jerom ſays, that he had often ſeen him at Antioch, that he honoured him, and that he learned many things of him. Philoſtorgius, the Arian hiſtoriographer, ſays, that he and Baſil, and Gregory Nazianzen, defended the divinity of Chriſt better than any either before or after them; in compariſon of whom, the great Athanaſius was eſteemed to be but a child; and the moſt conſidered and eſteemed of theſe three was this Apollinaris; and that theſe three were wanting in nothing neceſſary for underſtanding and reading the ſcriptures; and eſpecially this Apollinaris, who underſtood the Hebrew language. He wrote againſt the Arians and other heretics, &c. in many volumes, overthrew heretiſes, and confuted errors oppoſite to the faith; and in thirty large and noble books, moſt convincingly baffled

And the calumnies of Porphyry: and his moral character was as conspicuous as either Gregory's or Basil's. His writings surpassed in beauty and strength every thing that had been written by Eusebius, or any of the ancients. Nevertheless he was excommunicated by George bishop of Laodicea, for taking the part of Athanasius against him. To these testimonies in favour of Apollinarius, we shall subjoin a very different kind of judgment formed concerning him by M. Tillemont. "He maintained to the end his impiety, and died in his heresy: so that we cannot admit the hope of any other lot for him, but the condemnation of hell." Dupin having mentioned Apollinarius's paraphrase of the psalms, adds, "All the other works of this author are lost, except some fragments. His error in all probability occasioned this loss: the catholics had such a dread of the books of heretics, that they have not preserved so much as those which had no relation to their heresy, and which might have been useful to the church."—"If that be so (says the candid and impartial Dr. Lardner), we must acknowledge that the catholics were to blame; it is like rooting up tares and good corn altogether. And we may hence receive this instruction, to be upon our guard that we admit not too great an aversion for men on account of difference of sentiment in things of a speculative nature; lest by violence in opposing error, we should obstruct the progress of knowledge, and the cause of truth which we are desirous to serve." Apollinarius died, according to Jerom, in the reign of Theodosius, and probably not long after the beginning of it, in 382, or soon after; for Epiphanius, in 376 or 377, calls him a venerable old man. Lardner's works, vol. iv. p. 380—397. Mosheim's Eccl. Hist. vol. i. p. 223. &c. Cave, Hist. Lit. vol. i. p. 250, &c.

APOLLINIS URBS, or APOLLINOPOLIS MAGNA according to Ptolemy, or APOLLONOS according to the Itinerary of Antonine, or APOLLONIAS according to Hierocles, in *Ancient Geography*, the capital of the fifty-second nome of the same name in the southern part of Upper Egypt, about twenty-five leagues nearly north of the great cataracts. M. d'Anville, Savary, and Denon, agree in assigning to it the situation of the present village of *Edfou* or *Esfu*, governed by an Arabian sheik.

The site of this ancient city is singularly advantageous, as it commands the river and the whole valley of Egypt: and its magnificent temple, seated on a rising ground, towers over the rest like a large citadel which keeps the adjacent country in awe; and, indeed, it is known to the natives merely by the name of "the fortrefs." The extent, majesty, magnificence, and high preservation of this edifice, says M. Denon, surpassed every thing he had before seen in Egypt, or elsewhere. The building itself is a long suite of pyramidal gates, of courts decorated with galleries, of porticoes, and of covered naves, constructed, not with common stones, but entire rocks. The excellent preservation of this ancient edifice forms a wonderful contrast with the grey ruins of modern habitations built within its vast inclosure; a part of the population of this village being contained in huts built in the courts, and around the fragments of the temple. This temple is the most beautiful in Egypt, and, next to those of Thebes, the largest. As it was built at a period when the arts and sciences had acquired all their splendour, the workmanship of every part is equally beautiful, the hieroglyphics are admirably executed, the figures more varied, and the architecture of a higher order than in the Theban edifices, the building of which must be referred to an earlier age. At the foot of this greater temple, and on a much lower level, is a smaller one, at present almost buried; but in a hollow surrounded with rub-

bish may be seen a little portico of two columns, and as many pilasters, a peristyle, and the sanctuary of the temple inclosed within a pilastered gallery. A single column with its capital rising from the ruins to the height of forty feet above the portico, and the angle of a wall forty feet beyond, shew that there formerly existed a court in front of the temple. The gates, it is observed, are not exactly in the middle of the sides. It seems to have been dedicated to the evil genius; for the figure of Typhon is seen in relief on the four sides of the plinth which surrounds each of the capitals: the whole friezes and all the paintings within appear descriptive of Isis defending herself against the attacks of this monster. M. Denon has illustrated his description of these temples by appropriate drawings. See Denon's *Travels into Upper and Lower Egypt*, &c. vol. ii. p. 107. 277.

APOLLINIS URBS, or *Apollinopolis Parva* or *Minor*, another city of Egypt, called also *Vicus Apollinis* in the Itinerary. According to Ptolemy, it belonged to the forty-eighth nome of Coptos; and was situated between Coptos to the north, and Thebes to the south-west, on the right of the Nile. M. d'Anville refers this to the present situation of *Kous*. Denon found in the middle of the square the summit of a large and well-proportioned gate, sunk into the ground to the cornice. This single fragment, which must have belonged to a great edifice, and which appears larger than all the rest of the city, proves, says this traveller, that *Kous* was built on the site of *Apollinopolis Parva*. The other parts of the edifice are, without doubt, buried under the mountain of rubbish that is occupied by the present town. The inscription, engraved on the listel of the gate, was posterior to the monument, and affords a curious example of ingenious flattery in a prefect of Upper Egypt, at the time of the Ptolemies; who, on account of some repairs twenty or thirty centuries after the building of the temple, ventured to dedicate it to his masters, to inscribe the gate with their names, and thus to transmit them to posterity. Denon's *Travels*, vol. ii. p. 236. 297.

APOLLINIS FANUM, or *Temple of Apollo*, a town of Lydia, according to the periplus of Scylax, which became a bishop's see. This is also the name of a place of Africa propria, according to Ptolemy, situate probably north-east of Tabraca.

APOLLINIS INFULA, an island of Africa, according to Steph. Byz.

APOLLINIS LUCUS, a grove consecrated to Apollo in that part of Cisalpine Gaul called *Transpadana*, among the *Libici*, to the north-west of *Vercelle*.

APOLLINIS OPPIDUM, a small town of Ethiopia, in the country of the *Megabores*, according to Pliny.

APOLLINIS PHESSII PORTUS, a port of Greece, attributed by Pliny to the *Ozole Locrians*.

APOLLINIS PROMONTORIUM, *Ras-Zebib*, was situated to the east of *Utica*, and to the north of *Carthage*. Another promontory of the same name is placed by M. d'Anville after Ptolemy, in *Mauritania Cæsariensis*, north-west of *Cæsarea*.

APOLLINIS REGIO, a name given to the country of Ethiopia.

APOLLINIS TEMPLUM, or *Temple of Apollo*, was situated in *Thrace*, and called *Zerinthium*. Another of this name was situated in *Lycia*, upon the gulf of *Myra*. Another was in *Thessaly*, upon the *Pelægic gulf*, near *Pagasa*.

APOLLINIS URBS, or *city of Apollo*, was a name given to *Delos*, called also *Astena*, in the *isle of Delos*.

APOLLO, in *Entomology*, a species of PAPILO, in the section

fection Parnassus. The wings are white spotted with black : on the upper side of the posterior wings are four eye-shaped spots, and on the under-side six. It inhabits Europe and Siberia : and is the *PAPILIO RHEA* of Poda. Gmelin.

APOLLO, in *Mythology*, a pagan deity worshipped by the Greeks and Romans. Cicero (*De Nat. Deor.* l. iii. c. 23. *Oper.* t. ii. p. 635. ed. Olivet.) distinguishes four deities of this name: the first and the most ancient was the son of Vulcan, and the guardian of Athens; the second was the son of a Corybant, and born in Crete; the third was the son of Jupiter and Latona, who was born in the island of Delos at the same time with his sister Diana, and who was, according to Eusebius, the most ancient of the three, and, in many respects, the most celebrated; the fourth was born in Arcadia, and called by the Arcades, Nomius, or the legislator, because he enacted laws for them. Of these four, the three last were Greeks, and the first an Egyptian, who, according to Herodotus, was the son of Osiris and Isis, and called *Orus* or *Horus*. Pausanias agrees with Herodotus, and ranks Apollo among the Egyptian divinities. Diodorus Siculus also, after saying that Isis had invented the practice of medicine, adds, that she taught this art to her son *Orus*, named Apollo, who was the last of the gods that reigned in Egypt. Indeed, all the Grecian fables and mythologies may be easily traced to Egypt. To this purpose, it is observed, that if the Apollo of the Greeks was said to be the son of Jupiter, it was because Horus, the Apollo of the Egyptians, had for his father Osiris, whom the Greeks confounded with Jupiter. If the Greek Apollo was reckoned the god of eloquence, music, medicine, and poetry, the reason was, that Osiris, the symbol of the sun among the Egyptians, as well as his son Horus, had there taught those liberal arts. If the Greek Apollo was the god and conductor of the muses, it was because Osiris carried with him, in his expedition to India, singing women and musicians. The parallel might be pursued, and sufficient evidence is thus obtained, that the true Apollo was that of Egypt. Cicero says (*De Nat. Deor.* l. ii. c. 27. *Oper.* t. ii. p. 578.), that Apollo is a Greek name, and that he represents the sun; and that the sun is so called, because this luminary is alone so great compared with the other stars, or because this alone appears when it is risen, all the others being obscured. Accordingly the etymology may be deduced from α priv. and $\pi\omicron\lambda\lambda\omicron\varsigma$, many; as the Latins derive *sol* from *solus*, alone. Vossius thinks (*De Idol.* vol. i. l. ii. c. 17. p. 391.), that the Apollo of Greece and Rome was the same as the Abelson of the east; and Abelson was, in the etymological system of Bryant (*Mythol.* vol. i. p. 17), a combination of the terms Ab-El-Eon, denoting "Pater summus Sol", or "Pater Deus Sol." The sun was also worshipped, adds this writer, under the title of Abaddon; which, as we are informed by the Evangelist, was the same as Apollo, or as he terms him (*Rev.* c. ix. v. 11), Απολλων .

Apollo has been peculiarly distinguished by the poets, in preference to the other deities; and many extraordinary discoveries and performances have been ascribed to him. He has been esteemed the inventor of all the fine arts, such as poetry, music, and eloquence, and regarded as the protector of the poets, musicians, and orators. No one has performed like him on the lyre; and he has been thought to possess an intimate acquaintance with all the secret powers of medicine. The muses were under his protection, and he presided on Mount Parnassus at all their concerts. None of the gods was endowed to the same degree with himself, with the knowledge of futurity; and therefore he was the god of divination, and had a greater number of oracles than any other deity. Of these the Delphian claimed the

first rank on account of its antiquity, truth, and the perspicuity of its answers, as well as the magnificence of its structures, the variety and value of its *Anthemata* or presents, and the multitudes that resorted thither. There were others at Cirrha, Delos, among the Milesians, at Abæ, at Claros, at Larissa, in Bœotia at Eutresis, Tegyrae, and Ptoos, at Oropo in Eubœa, at Corycæ in Thessaly, at Hybla, at Ichor in Macedonia, &c. He had also temples through all Greece and Italy; and he was honoured and worshipped, as the representative of the sun, among the Gauls and Britons. It has indeed been doubted whether Apollo was a real personage, or merely a symbolical deity representing the sun. Vossius (*ubi supra*) adopts the latter opinion, and maintains that there was never any other Apollo besides the sun: thus he was styled the son of Jupiter, because that god was reckoned by the ancients, the maker of the world. His mother was called Latona, signifying "hidden," because all things were enveloped in the obscurity of Chaos, before the creation of the sun. He is represented as a beardless youth, because the sun never grows old and decays; and his bow and arrows denote his piercing beams. Besides, according to this writer, all the ceremonies that were performed to his honour bore an obvious relation to the great source of light which he represented. It is in vain then, he concludes, to seek for any other divinity than the sun, which was adored under the name of Apollo. There is reason, however, to imagine, that there might have existed some illustrious personage named Apollo, who after his apotheosis was made the emblem or symbol of the sun; as we know to have been the case with respect to the Egyptian deities, Horus and Osiris.

To the distinguishing qualities above enumerated and ascribed to Apollo, the poets have joined beauty, gracefulness, eternal youth, and the art of charming the ear by the sweetness of his eloquence, and the melodious sounds of his lyre, and of thus captivating both gods and men. Accordingly he is principally distinguished in ancient statues by the beauty of his face, and the gracefulness of his figure: and hence Virgil (*Æn.* iii. v. 119.) calls him "the beautiful;" and Tibullus (*l. ii. el. 3. v. 11.*), "the well-shaped god." We need not wonder then at the amours and love-conquests that have been attributed to him. His musical contests, and some of his other feats, will be related in their proper places, in the course of this work. See *MARSYAS*, *MIDAS*, *PAN*, *PYTHON*, and *THAMYRIS*.

Apollo is usually represented as a beautiful, beardless youth, with long hair (hence called "intonfus and crinitus;" Ovid. *Trist.* iii. 1. 60.), holding a bow and arrows in his right hand, and in his left hand a lyre or harp. He is crowned with laurel, which was sacred to him, and from this circumstance his favourite poets wore the same crown. In the character of the sun, his head is surrounded with rays. He is often represented on the coins of the Syrian princes. The animals consecrated to him were the wolf and hawk, as symbols of his piercing eyes; the crow and raven, from their supposed faculty of predicting the future; the cock, from his announcing the dawn of morning and rising of the sun; the grasshopper, on account of his tuneful powers, recorded and celebrated by Anacreon (*od.* 43); and the swan, partly from his prediction of futurity, and partly from his extraordinary vocal powers. The various appellations which were appropriated to Apollo, were derived either from some of his chief attributes, or from the places where he was worshipped. It would be endless to enumerate them all: we shall therefore content ourselves with some of the principal, and refer for their more particular explanation to the articles under which they occur. He was called *Asian*, in reference

to Actium; *Ἀκτιόκομος*, in his hymn, attributed to Homer; and "Intonus," by Propertius, Ovid, &c. on account of his long hair; *Alexicæcus*, from his power of healing; *Arctæonens* and *Argyrolæoxus*, from his bow and arrows made of silver; *Comæus*, from *κομῶν*, on account of his fine hair, under which appellation he was worshipped at Selencia; *Conseruator*, on a golden medal of Aurelian; *Corybæus*, from *Corybæ*, where he had an oracle; *Cynthius*, from a mountain of this name in Delos; *Delian*, from *Delos*; *Delphian*, from *Delphi*; *Didymæus*; *Ἐκβολῶς*, or *longe ejaculator*, in allusion to his arrows and the rays of the sun; *Latæus* and *Latonian*, from his mother Latona; *Medicus*, from his being the inventor of medicine; *Nauisilis*, from Augustus's having ascribed his victory at Actium to him; *Νομῶς*, or *Nomius*, either from his superintending herds and pasturage, or from the fertility which the earth derives from the influence of the sun; *Pæan*, formed of *παῖν* to strike, because he wounded with his arrows; *Patareus*, from Patara in Lycia, where he had a temple and oracles; *Phæbus*, from Phœbe the mother of Latona, or from his splendour; *Pythian*, from his victory over the serpent Python; *Smintheus*, from *σμινθῶν*, rats, a name given by the Cretes, who, having neglected his worship, were punished by the devastations of these, and rescued by his interposition; *Sortilegus*, from his presiding over lots; *Thuræus*, from *θύρα*, a gate, because he presided at the gates, among the Greeks, who adorned them with his statues; *Thymbreus* (Virgil *Æn.* iii. 85.), from Thymbra, where he had a grove and temple, &c.

APOLLO BELVIDERE, in *Sculpture*, a very celebrated antique statue, esteemed by the majority of artists the most excellent and sublime of all the ancient productions. It was found towards the end of the fifteenth century, at Capo d'Anzo, upon the sea coast, about twelve leagues from Rome, in the ruins of ancient Antium. It was purchased by pope Julius II. when only cardinal, and placed in his palace near the church of Santi Apostoli; but soon after, being made pope, he removed it to the Belvidere of the Vatican; from whence it takes its name, and where it was for three hundred years the admiration of the world; until Rome was taken and plundered by the French, who have transported this divine statue to the museum at Paris.

The marble out of which this statue was worked, is of so peculiar a kind, as to occasion much doubt about the quarry it was taken from. The sculptors of Rome are all of opinion that the marble is Grecian; with the exception of one or two, who call it marble of Luni or Carrara. However positive these opinions may be, it came most probably from a quarry totally unknown at this day.

Some accounts have stated, that this statue was the work of Agathias the Ephesian; but the French artists, who were sent to Rome at the time of the incursion of the French into Italy, to explore the different works of art and their history, state that the author is certainly unknown.

This statue is a standing figure, almost naked, and more than seven feet in height: it has a freedom, grace, and majesty in the whole attitude, and especially in the turn of the head, that surpasses any other antique known. The god is here represented with his quiver hanging behind his right shoulder, and his pallium over his left arm, which is extended, and has in the hand the remains of a bow, out of which he is supposed to have just discharged an arrow at the serpent Python. On this account the statue is called Apollo Pythius. The mind of the god is here so nobly exhibited, that without saying too much, he evidently appears watching the event of his aim; but with such confidence and majesty, as proceed from a certainty of success in the attempt; forming a sublime contrast to the tremulous anxiety of Discobolus, who, in another statue, is represented as having

just thrown the discus. On the stump of a tree, introduced in order to strengthen the figure, is executed a serpent, the symbol of physic, of which Apollo was god. To describe this figure in few words; it is a complete composition of sublimity, elegance, activity, and youthful beauty. The right fore-arm and the left hand, which were wanting, have been restored by Giovanni Angelo da Montorfoli, pupil of Michael Angelo.

In the eighth year of the French Republic, Bonaparte, accompanied by the third consul Lebrun, was present at the inauguration of this statue; and on the occasion, a bronze tablet was presented, in the name of the artists, by Citizen Vien, and placed on the pedestal of the statue, on which was engraved the following inscription:

La statue d'Apollon, qui s'éleva sur ce piédestal trouvée à Antium sur la fin du XV^e siècle, placée au Vatican par Jules II. au commencement du XVI^e, conquise l'an V. de la République par l'armée d'Italie, sous les ordres du général Bonaparte, a été fixée ici le 21 Germinal, an VIII. première année de son consulat.

On the opposite side of the pedestal is engraved:

Bonaparte, I^{er} Consul.
Cambacérés, II^e Consul.
Lebrun, III^e Consul.

Lucien Bonaparte, Ministre de l'intérieur.

Besides the above, there are many other statues of Apollo; some of which possess great merit. In the Villa Mediceis were the following.

One smaller than life, grouped with a figure of the God Pan, who is teaching him to play on the syrinx. (One, the fame as this, was in possession of the Earl of Besborough at Roehampton.)

Another Apollo, leaning his left elbow on the stump of a tree; his right arm rests upon his head. A very elegant and beautiful statue. The left arm and the feet are modern. This is called the Apollo de Medicis.

Another, leaning on the stump of a tree; with his legs crossed. This was originally playing on a lyre; though the lyre is now wanting. Over the tree hangs the pallium of Apollo, and at the bottom is a swan. The air of the head, and the sweep of the body of this figure, are very elegant.

Two others, of the same design; except that their heads are more elevated. These are not quite equal in merit to the first.

Another, is also leaning on the stump of a tree, with his lyre: very fine.

In the palace Farnese, was an Apollo of black marble, leaning on his lyre, with his right hand over his head.

Another in the palace Giustiniani, where he holds the skin of Marsyas: very fine.

A group of Apollo and Marsyas was in the palace Chigi, in which Apollo has one hand on the shoulder of Marsyas, with a knife in the other. They regard each other, in this group, with an expression that is surprizingly well told. The air of Apollo's head is divine.

There are some small beautiful statues of Apollo at Wilton house: several at Paris, and very many in different parts of Europe, besides a great many celebrated bustos and basso-relievos.

APOLLO was also the name of a kind of pantomime dance, which exhibited some actions of this god:

APOLLODORUS, in *Biography*, a grammarian of Athens, was the son of Asclepiades, and a disciple of Aristarchus the grammarian, and of the two stoic philosophers Panætius and Diogenes the Babylonian. He flourished about

the 15th olympiad, or 148 years before Christ, under Ptolemy Philometor. None of his works are extant but three books of his "Bibliotheca," which contain the fabulous history of the Grecian divinities and heroes, from Iachus, who is believed to have founded the kingdom of the Argivi in the time of Abraham, to the time of Theseus, prince of Athens. This history was written in the reign of Pectalus king of Pergamus, who died in the 3d year of the 19th olympiad, or 138 years before Christ. Heinger pronounces this to be a very ingenious and elegant performance, from which we may derive some acquaintance with ancient history, as the fables are founded on historical truth, and as the persons whom it records actually existed, though their actions are exaggerated or disguised. He adds, that we may extract from Apollodorus a more certain and better founded chronology, than from the rhapsodies of Herodotus: and Vossius is of opinion, that by separating the fabulous stories from real events, we may form from his writings a true history. The first edition of this work was published by Spolatinus at Rome, in 1575, 8vo.; but the best edition is that of Gal, among "the five ancient Greek writers of fabulous history;" to which he has annexed notes, and a genealogical table, in 1655. Fabr. *Bibl. Græc.* l. iii. c. 27. t. ii. p. 660, &c.

APOLLODORUS, a famous Athenian painter, flourished about the year before Christ 408. He is said to have possessed the resources, in which his predecessor Polygnotus failed, and to have diversified the tone of his colours, and to have produced a happy mixture of light and shade. Heicybius says, that he was so sensible of his superiority in the exercise of his art, that he wore a sort of regal tiara, as the prince of his profession. Zeuxis improved upon his discovery, and Apollodorus, in a poem written on the occasion, records and exalts that of his rival. "I had discovered," says he, "for the distribution of shades, secrets unknown till our days; they have been wrested from me; the art is in the hands of Zeuxis." Pliny, *Hist. Nat.* l. xxxv. c. 9. Anacharhis's *Travels*, vol. i. p. 448.

APOLLODORUS, a famous architect, was born at Damascus, and flourished under Trajan and Adrian. In the year of Christ 104, he built the stone bridge over the Danube, which was one of the most considerable works of Trajan; and he also constructed the edifices round the Forum Trajanum in Rome, among which were a triumphal arch, and the sculptured column of Trajan, now existing. His offensive reply to Adrian, who seems to have envied his talents and fame, was rewarded with a severity which must be universally condemned. Whilst Apollodorus was conversing with Trajan on some plans of architecture, Adrian interfered, and gave an opinion, which the artist treated with contempt: "Go," says he, "and paint gourds," (an amusement which Adrian was fond of.) "for you are very ignorant of the subject on which we are conversing." When Adrian became emperor, the affront was remembered, and it prevented Apollodorus from being employed: nor was the opinion, which Apollodorus gave with respect to the plans of a sumptuous temple of Venus, which the emperor was building, at all conciliatory. Adrian, meanly jealous, and inexcusably revengeful, banished the architect; and having caused him to be accused of various crimes, put him to death. *Crevier's Rom. Empr.* vol. vii. p. 171. *Gen. Dict.*

APOLLODORUS, born at Lemnos, was physician to Ptolemy Soter, to whom he is said by Pliny to have dedicated a book on the qualities and use of wine. There were two other physicians of that name, both mentioned by Pliny; one of them is supposed to have invented an antidote against the bite of a viper, described by Galen. Haller, *Bibl. Med. Pract.*

APOLLONIA, in *Antiquity*, casts sacred to Apollo at Egalea. It is said, that Apollo, after the defeat of Pytho, having retired to Egalea with his sister Dana, was driven thence by the inhabitants, and obliged to seek a retreat in the island of Crete. In a little while, a plague made great ravages in this place, and upon consulting the oracle, information was received, that seven young women, and as many young men, should be sent to Apollo and Diana to request their return to Egalea. As soon as these deities arrived, the plague ceased; and in commemoration of this event, they annually departed the same number of young women to go, as it were, in search of Apollo and Diana.

APOLLONIA, in *Biography*, a female Christian Martyr of Alexandria, was of an advanced age at the beginning of the Decian persecution, in 248, and yet fell a sacrifice to her profession. Her persecutors struck her upon the cheeks, and beat out all her teeth; then lighting a fire without the city, they threatened to burn her alive, unless the world join with them in pronouncing certain profane words; but she legging a short respite, and being released, threw herself into the fire, and was consumed to ashes. *Euseb. Eccl. Hist. lib. vi. c. 41. p. 257. Gardner's Works.* vol. viii. p. 147.

APOLLONIA, in *Ancient Geography*, the name of several ancient cities; viz. a town of Assyria, situate, according to Steph. Byz. between Babylon and Suza. M. d'Anville places it upon the river Delas, to the north-east of Artemita.—A town of Palestine, between Cæsarea and Joppa, called Apollonias by M. d'Anville, and placed to the north-west of Antipatris. It was re-established by Galinius, president of Syria, after having suffered much in wars of this province.—A town which some authors place in Phisidia, but which M. d'Anville places in Carna, near the Mæander, at some distance to the west of Antiochia Mæandri.—A town of Mysia, according to Steph. Byz.—A town of Asia Minor, in Bithynia, on the north bank of a lake of the same name, and near the Rhynchachus, now Aboullona: this was once a city of great note, and maintained its lustre till the reign of the emperor Alexis Comnenus, when it was taken and pillaged by the Turks. Apollo is represented on the reverse of several medals of this city. There are many Imperial Greek medals that have been struck in this city, in honour of M. Aurelius Verus, Septimius Severus, Caracalla, Gordian, Plautilla, and Getz.—A town of Pontus, according to Pliny.—A town of the small island of Syphnos, one of the Cyclades. A town of Thrace, now Sizeboli, situate on the south side of a small gulf of the Euxine sea: this town was ruined by Lucullus, when he was governor of Macedonia.—A town of Macedonia in Chalcidica, situate upon the Chabrus to the north of Chalcis. Another town in Macedonia, in Mygdonia, south-east of Thessalonica, and south-west of Amphipolis. A town dependent on Macedonia, when it extended to the west as far as the Adriatic sea. It was situate at a small distance north of the Aous, and was an episcopal see.—A town of the Phocide, on mount Parnassus, and formerly called *Erannus*, and also *Cyparissus*.—A town in an island near Acarnania.—A town of Sicily, near the promontory of *Paclinum*, where was a temple of Apollo. The medals of bronze struck in this city, had the legend "Tauromenitan."—A town of Crete, near Gnossus, according to Steph. Byz.—Another town of Crete, formerly called *Eleuthera*. It was, says Steph. Byz. the country of Linus, and of Diogenes the physician.—An island in the vicinity of Lycia, Steph. Byz.—A town of Lybia.—A town of the Cyrenaica, towards the north west, and near the sea. Under the lower empire it took the name of Sozusa, and its modern name is *Marxa-Susa*.—A town of Illyria, on the Ionian sea, near Epidamnus,

Epidamnus, and not far from the port of Oricum, according to Herodotus.

APOLLONIA, *Cape*, in *Geography*, a promontory on the Ivory coast of Africa, in N. lat. $4^{\circ} 50'$, and in the midway between Rio Snero da Costa, and Cape Threepoints, from which it is distant W. by N. 15 leagues. It is remarkable for its height, and the lofty trees with which it is covered. The surf at the Cape is so violent that no boats can land there; and though it has a fort, it is of little or no importance.

APOLLONIAN *Hyperbola* and *Parabola*, in *Mathematics*. See HYPERBOLA, PARABOLA, and CONIC SECTIONS.

APOLLONIATIS, in *Ancient Geography*, a country of Assyria, so called from its metropolis Apollonia, lay east of Adiabene, and is placed by Ptolemy between the rivers Gorgus and Silla.

APOLLONIUS PERGÆUS, in *Biography*, an eminent mathematician of Perga in Phamphyliia, flourished under the reign of Ptolemy Energetes, about 240 years before Christ. He studied under the disciples of Euclid at Alexandria, and there laid the foundation of that celebrity which entitled him to the distinguishing appellation of the "Great Geometrician." Of the various mathematical works which he is said to have composed, the only one now extant is his Treatise on the Conic Sections; and even this has been transmitted to us in an imperfect state. It appears by the author's dedicatory epistle to Eudemus, to have originally consisted of eight books, but of these seven only remain. Heraclius, in a life of Archimedes, charges Apollonius with having appropriated to himself the discoveries and writings of that eminent mathematician; but Eutocius repels the charge, and vindicates him from any dishonest plagiarism. Whilst it might naturally be imagined that he would avail himself of the works of his predecessors, it nevertheless sufficiently appears, that he has made several valuable improvements on Euclid and Archimedes. Eutocius informs us, that before the time of Apollonius, it was usual for mathematicians to deduce the properties of the conic sections from three different sorts of cones; those of the parabola from a right-angled cone; those of the ellipse from an acute cone; and those of the hyperbola from an obtuse cone; because they admitted only one mode of cutting the cone, which was by a plane perpendicular to the side: but Apollonius, by varying the position or inclination of the cutting plane, derived all these sections from any single cone. This valuable improvement, now universally adopted, had been for a considerable time ascribed by Eutocius, Pappus, and others, to Apollonius. Guido Ubalduus, however, in his Commentary on the 2d book of Archimedes's "Equiponderantes," published at Pisa, in 1588, has shewn, that he was acquainted with this method of obtaining the several sections of the cone. Archimedes is said to have appropriated the name of parabola to one of these sections; and the appellations of ellipse and hyperbola are said to have been introduced by Apollonius, in imitation, probably, of the former. However this be, it is universally allowed, that the conic sections of Apollonius rank among the most valuable remains of antiquity. The first four books have been preserved in the original Greek; and the 5th, 6th, and 7th, have been transmitted to us in an Arabic translation. The translation of Apollonius's conics was begun under the caliph Almamon, in the year 830; and Thebit Ben Corah took pains to revise and augment it with that of the three last books, in the course of the same century. Abalpiat made a new translation, under the caliph Abucalighiar, in 924; and this version fortunately fell into the hands of Borelli, in the manner recited in the sequel of this

article. This celebrated work of Apollonius, in its imperfect state of four books, was first known among the western Christians towards the middle of the 15th century, when Regiomontanus projected an edition of it, which he was prevented from completing by his death. In 1537, a Latin translation was made by Memmius, a noble Venetian, and published after his death by his son. This seems to have been the first edition, and its being the first was the only merit that belonged to it. A better translation of the first four books by Commandinus, with the Commentary of Eutocius, and the Lemmas of Pappus, was published at Bologna, in 1566; they were also printed in 12mo. by H. Stephens, at Paris, in 1626; in folio, at Antwerp, in 1655; and in 4to. at London, by Dr. Barrow, in 1675. The loss of the other three books of Apollonius was much regretted by the Europeans; and attempts were made to recover them. Maurolycus, a Sicilian geometrician of the 16th century, sketched out the theory of the 5th and 6th books, and it was published by Borelli, as a Supplement to Apollonius, in 1654. Father Richard, the Jesuit, promised a work of the same nature, but it never appeared; however, his prolix Commentary on the first four books was printed at Antwerp, in 1655, in folio. Whilst Viviani was collecting materials for the restoration of the lost books, Golius returned from the east with a great number of Arabian MSS. among which were the seven first books of Apollonius's Conics. This discovery was speedily announced; and in 1644, it was noticed by Mercennus. Golius delayed the translation that was expected; and in 1658, Borelli, visiting Florence, found in the library of the Medicis, an Arabian MS. the Italian title of which announced the eight books of Apollonius. Ferdinand II. duke of Tuscany, generously entrusted him with this MS. which he carried to Rome; and with the assistance of Abraham Ecchellenfis, an oriental linguist, it was translated into Latin, and published with notes, and a preface, maintaining that these books are not supposititious, in 1661. The 8th book was still wanting; and Golius affirmed, that it was not contained in the Greek copies from which the other books were translated by the Arabians. However, the learned Mercennus, who published Apollonius's Conics, in his "Synopsis of the Mathematics," found an Arabian work of Aben Neden, written about the year 1020, in which the 8th book is mentioned; and it is asserted that all the books were extant in Arabic. A splendid edition of all the eight books has been published at Oxford, in folio, by Dr. Halley, in 1710; together with the Lemmas of Pappus, and the Commentaries of Eutocius; the first four books in Greek and Latin; the rest in Latin only; and the last restored by the editor. An 8vo. edition was also published at Oxford by Dr. Halley.

This excellent work was begun by Dr. Gregory, whose death prevented his proceeding farther than the 44th page; and completed by Dr. Halley, with the assistance derived from an Arabic version in the Bodleian library, made by Thebit Ben Corah; and another Arabic MS. in the same library, made by Abdolmelech Schirazita, a Persian, about 600 years ago, and brought out of the East by Christianus Ravius, and principally the MS. of Golius, purchased of his heirs by Dr. Marsh, archbishop of Armagh, and communicated to him for the public benefit. This MS. contains the first seven books of Apollonius's Conics; was translated by Thebit Ben Corah; and after several amendments, completed, in 1303, at Maraga, a city on the confines of Media and Assyria.

With respect to the conic sections, we shall merely observe, that their properties are derived in the most scientific and

and satisfactory manner from the cone; and this has been done by several moderns, and among others, with peculiar advantage, by Dr. Hamilton. Others have, in a manner more operose, deduced their properties from descriptions of the several curves on a plane; and a late very ingenious attempt, which, in the construction and demonstration, is almost wholly original, has been made to deduce all the properties of the three conic sections, from the 24th proposition of sir Isaac Newton's Universal Arithmetic, in Mr. Walker's Treatise "on the Conic Sections," the first book of which was published in London, in 1794.

The other writings of Apollonius, mentioned by Pappus, are the following: "The Section of a Ratio, or proportional Sections;" "The Section of a Space;" "Determinate Section;" "The Tangencies;" "The Inclinations;" "The Plane Loci;" each of these comprehended in two books. Pappus delivers many Lemmas relating to them; and attempts have been made for restoring them by modern mathematicians. Montucla. Hist. des Math. tom. i. p. 243—253. Voff de Scient. Math. Fabric. Bib. Græc. lib. in. c. 22. § 17. tom. ii. p. 556. Gen. Dict. Halley's Preface.

APOLLONIUS, surnamed *Difcolus*, or the *lean*, on account of the poverty of his condition, a celebrated grammarian of Alexandria, lived in the reigns of Adrian, and Antoninus Pius. Such was his indigence, that having no money to buy paper, he was obliged to write on oyster shells. Priscian prefers Apollonius and his son Herodian to all preceding grammarians, and professes to follow Apollonius as his guide. His treatise "on Syntax," written in Greek, is highly commended by Priscian. A correct edition of this work, with a Latin translation and notes, was published in 4to. at Frankfort, by Sylburgius, in 1590. Another treatise ascribed to this writer, intitled, "Ἱστορίαι θαυμαστίαι, or Wonderful Histories," was published, with other pieces, by Antonius Liberalis, Phlegon and Antigonus, and the works of M. Antoninus, in 8vo. at Basil, in 1568; and a better edition in 4to. at Leyden, in 1620, by Meursius. Suidas. Fabr. Bibl. Græc. lib. v. c. 7.

APOLLONIUS *Rhodus*, so called from his long residence at Rhodes, was a native of Alexandria, and flourished in the 3d century before Christ, under Ptolemy Euergetes. Callimachus was his preceptor, by whom he was severely satirized for his ingratitude; and he succeeded Eratosthenes in the care of the Alexandrian library. Of his works, the most distinguished is a poem, in four books, on the Argonautic expedition. The author, mortified by the censures passed upon it at its first publication, removed to Rhodes, and opened a school of rhetoric; but having afterwards corrected and improved it, the Rhodians applauded it, and conferred on him the freedom of the city. This poem has been differently appreciated both by ancient and modern critics. Quintilian and Longinus give it only the praise of mediocrity, and represent it as having no claim to real genius, and as displaying the rhetorician rather than the poet. By others it has been commended as exhibiting beauties of a sentimental and descriptive kind; and Virgil has borne testimony to its value, by copying several incidents from the relation of the loves of Medea and Jason, into his beautiful story of Dido and Æneas. Rapin, in his "Reflections upon Poetry," (Part ii. Refl. 15.) declares, that his style has no manner of elevation or sublimity, and that the structure of the fable is very injudicious; that the catalogue of the Argonauts is destitute of variety; and that the poem becomes extremely languid from the first book: besides, Apollonius has egregiously erred in making this expedition to continue but four months.

The best editions of the "Argonautics," are Apoll. Rhod.

impress. in literis majusculis, ed. princeps; 4to. Florent. 1406. Apoll. Rhod. Gr. ed. 2d. 8vo. apud Ald. 1513. Apoll. Rhod. Gr. with the Scholia. 4to. H. Stephan. 1574. Apoll. Rhod. Gr. & Lat. by Hoelzlin, Leyden. 8vo. 1641. Gen. Dict.

APOLLONIUS, a famous Rhodian sculptor. The same who, with his contemporary Tauriscus, executed the celebrated groups of Niobe in the Villa Medicis; and of Zethus and Amphion, in the Farnese palace.

APOLLONIUS, a Roman senator and Christian martyr, lived in the time of Commodus, and suffered death at Rome, probably in the year 186 or 187. Being accused before Perennis, præfect of the prætorium, he pronounced an eloquent apology for the faith before the senate; and was then sentenced by their decree, to have his legs broke, and then to be beheaded: according to an ancient law, which enacted, that if any Christian were in a court of justice, he should be punished, unless he denied himself to be a Christian. Eusebius says, that he was celebrated for learning and philosophy; and Jerom mentions him among some of the most eminent Christian writers. Euseb. Eccl. Hist. l. v. c. 21. p. 189. Lardner's works, vol. ii. p. 303. v. viii. p. 339.

APOLLONIUS, a sophist and grammarian, was the preceptor of Apion, and lived in the time of Julius and Augustus Cæsar. He was the author of a Greek lexicon to the Iliad and Odyssey of Homer, which was published for the first time with a Latin translation, after remaining long unknown, in 2 volumes 4to. by J. Baptill de Villouin, at Paris, in 1773, under the title of "Apollonii Sophistæ Lexicon Græcum Iliadis & Odysseæ." Nouv. Dict. Hist.

APOLLONIUS, a stoic philosopher, was a native of Chalcis in Syria, and a preceptor of Marcus Aurelius. When this stoic came to Rome, at the request of Titus Antoninus, instead of hastening to take the charge of his princely scholar, he replied to a message sent to him by the emperor desiring his attendance; "It is not fit for the master to go to his scholar, but for the scholar to come to his master." Antoninus, upon receiving this arrogant and rude reply, mildly and jocosely said, "Apollonius could come from Syria to Rome, but cannot come from his house to the palace." Crevier's Rom. Emp. vol. iii. p. 241.

APOLLONIUS *Tyanaus*, a Pythagorean philosopher and notorious impollor, was born about the commencement of the Christian æra, at Tyana, a city of Cappadocia. At 14 years of age he was sent by his father to Tarsus, to be instructed by Euthydemus a rhetorician; but dissatisfied with the luxury and indolence of the inhabitants, he removed with his preceptor to Ægæ, in which there was a temple of Æsculapius. Here he acquainted himself with the doctrines of the Platonists, Stoics, Peripatetics, and Epicureans: but the Pythagorean tenets and discipline being more consonant to his own views and temper, attached his chief regard; and he made choice of Euxenus for his preceptor in philosophy, and determined to conform in the strictest manner to the Pythagorean discipline. Accordingly he abstained from animal food, and lived wholly upon fruits and herbs; he made no use of the skins of animals for his clothing; he went bare-footed, and suffered his hair to grow to its full length; and he spent the greatest part of his time in the temple of Æsculapius with the priests, by whom he was much admired, and who, without doubt, initiated him by their adulation and inlluertion into the mysteries of impollure. During his abode at Ægæ, he does not seem to have attempted any thing miraculous, but availed himself of the authority of the god, in whose temple he resided, to enforce moral lessons. To an Allyrian youth, who repaired to Æsculapius for the cure of a dropy occasioned by intemperance, he recommended abstinence, and thus cured his disease. A wealthy citizen, who was profuse

in his sacrifices and oblations in the temple, that he might obtain the restoration of an eye that had been lost in punishment of conjugal infidelity, Apollonius dismissed as unworthy of admission into the temple: and he also instructed the people who resorted thither, that when they entered into the temples of the wife, jult, and all-knowing gods, they should pray for obtaining what it is fit for them to receive; and that the wicked, however lavish they might be in the disposal of their wealth, would be rejected; because they made their offerings not to honour the deity, but to purchase exemption from deserved punishment. Upon the death of his father, he attended his funeral at Tyana, and having given the greatest part of his wealth to his brother, and admonished him to reform his vicious conduct, he returned to *Ægæ*, where he erected a temple, and established a school of philosophy. In order to qualify himself for the office of preceptor in the Pythagorean philosophy, he determined to pass through the noviciate of five years' silence, which the Pythagorean system required; and during this period he chiefly resided in Pamphylia and Cilicia, conveying instruction and admonition by his looks and gestures. At *Aspenda* he is said to have quelled a tumult occasioned by famine, and to have relieved the distressed people, by writing on a tablet the following reproof to the covetous engrossers of the grain; "The earth, the common mother of all, is just; but ye, being unjust, would make her a bountiful mother to you alone: desist from your iniquitous proceedings, or ye shall no longer be suffered to live." The terrified corn-merchants opened the granaries, the people were supplied, and the tumult was suppressed. When his term of silence was expired, he visited *Antioch*, *Ephesus*, and other cities, and associated chiefly with the priests. At sun-rising he performed certain religious rites, which he disclosed only to those who had passed through the discipline of silence, the rest of the day was spent in the instruction of his disciples, and in communicating counsel and reproof to the people. His style was neither too florid nor too refined, but truly *Attic*. Avoiding verbose declamation, and ironical railery, he delivered his doctrine with conciseness, and with the authority of a legislator. Being asked why he did not pursue his inquiries, instead of dogmatically asserting his tenets, he replied; "I sought for truth when I was young, it is now my duty to teach what I have found; a wise man ought to speak as a law-giver, and make the doctrines which he embraces, injunctions to the people." Apollonius now resolved to travel through distant nations; and having proposed his design to some of his disciples, they declined accompanying him. He therefore entered upon his expedition attended only by two servants. At *Ninus*, however, he engaged *Damis* as his associate; and to him he boasted, that he was acquainted with all languages, though he had never learned them; and that he even understood the language of beasts and birds: the *Assyrian* youth believed him, honoured him as a god, and accompanied him in his journey. At *Babylon*, Apollonius conversed with the magi; and in an interview with the king, whom he visited in his illness, he discoursed so excellently concerning the soul, that the sick monarch acknowledged to his attendants, that this Greek had taught him not only to despise a kingdom, but even death itself. At the expiration of the term which he had fixed in his prediction, he took his leave of *Babylon*; and furnished with camels and provisions for his journey over *Caucasia*, he pursued his route to *Taxella*, the residence of *Phraotis* the *Indian* king. With *Phraotis* he had many philosophical conferences; and being dismissed with presents, he was recommended to *Jarchas*, the chief of the *Indian* philosophers or *gymnosophists* residing between the *Hyphasis*

and the *Ganges*. After a residence of four months with these *Indian* sages, Apollonius returned to *Babylon*; and from thence passed into *Ionian*, where he visited *Ephesus* and several other places, every where reprovng the people for their misconduct, and enforcing the Pythagorean doctrine and discipline. In his visit to *Pergamus* and the ancient seat of *Troy*, he passed a night by himself near the tomb of *Achilles*; and he afterwards informed his companions, that by the power of an incantation which he had learned in *India*, he raised that hero from his tomb, and held a conversation with him. In the island of *Lesbos* he conversed with the priests of *Lesbos*, and from thence proceeded to *Athens*. He arrived there at the time when they were performing their sacred mysteries, and presented himself for initiation, but was refused because he was an enchanter; at a future period, however, he was admitted. After passing through some other *Grecian* cities, where he pretended to perform miracles and to predict future events, he pursued his course through the island of *Crete* to *Rome*. Just before his arrival, *Nero* had issued an edict, that all those who practised magic should be banished from the city. His friends were alarmed on his account, and though twenty-six out of the thirty-four persons who were his stated associates, deserted him, he persevered in his purpose, and under the protection of the sacred habit obtained admission into the city, and also leave from the consul *Telesinus* to visit the temples and converse with the priests. From *Rome*, Apollonius travelled to *Spain*; and after the death of *Nero*, he returned to *Italy* in his way to *Greece*, whence he proceeded to *Egypt*, where *Vespasian* was trying every expedient to establish his power. This prince engaged the philosopher in his favour; and he in return adapted his measures to the views of the new emperor, and used all his influence among the people in support of *Vespasian's* authority. Whilst he was in *Egypt*, he visited *Æthiopia*; and on his return he was favourably received by *Titus* the successor of *Vespasian*, to whom he wrote the following laconic epistle, on his refusing a crown of victory upon his taking *Jerusalem*: "Apollonius to *Titus* emperor of the Romans sendeth greeting: since you refuse to be applauded for bloodshed and victory in war, I send you the crown of moderation; you know for what kind of merit crowns are due." Upon the accession of *Domitian*, he was concerned in exciting a sedition in *Egypt* against that tyrant, and in favour of *Nerva*. An order was issued for seizing him and bringing him to *Rome*; but as soon as he heard of the order, he repaired thither of his own accord; and was brought to trial before the prætor *Eliau*, who acquitted him. Apollonius now passed over into *Greece*, and visited the temple of *Jupiter* at *Olympia*, the cave of *Trophonius* in *Arcadia*, and other celebrated seats of religion; and wherever he went the number of his followers increased. At length he settled at *Ephesus*, and there established a Pythagorean school, and had many disciples. Of his fate, after he settled at *Ephesus*, nothing certain is related. The time, the place, and the manner of his death, are unknown. It is probable that he lived to an extreme old age, and died in the reign of *Nerva*. After his death, *Damis* became his first memorialist. His memoirs were communicated by a friend, to the empress *Julia*, the wife of *Severus*, and by her to *Philotratus*, with a request that he would transcribe and embellish the narrative. *Philotratus* undertook the task, and so loaded his account of the life of this extraordinary man with marvellous tales, that it is very difficult to ascertain the credit due to his narrative. He relates, for example, that while the mother of Apollonius was pregnant, the *Egyptian* divinity, *Proteus*, appeared

peared to her, and told her that the child she should bring forth was a god; that his birth was attended with a celestial light; that in the Æsculapean temple at Ægæ he predicted future events; that at the tomb of Achilles, he had a conference with the ghost of that hero; and that whilst he was publicly discoursing at Ephesus, he suddenly paused, as if struck with a panic, and then cried out, "Slay the tyrant;" at the very instant when Domitian was cut off at Rome. If to these tales we add the accounts which Philostratus gives of the efficacy of the mere presence of Apollonius, without the utterance of a single word, in quelling popular tumults; of the chains of Prometheus which he saw upon mount Caucasus; of speaking trees, of pignies, plumes, satyrs, and dragons, which he met with in his eastern tour; and of other things equally wonderful; it will be impossible to hesitate in ascribing the marvellous parts at least of Philostratus's narrative to his ingenuity, or his credulity. Nevertheless, the narrative of Philostratus, with all its inconsistencies, was, about a century after its appearance, referred to in preference to other accounts of Apollonius then extant, by Hierocles, who first endeavoured to form a comparison between Christ and this philosopher; and Eusebius, in refuting this attack upon Christianity, admits, in general, the accounts of Philostratus, and shews that, according to his account, Apollonius does not deserve to be compared with Christ.

Dr. Lardner indeed has fully shewn that Philostratus did not write the life of Apollonius with any reference to the life of Christ: and that his design was to exhibit this philosopher as a counterpart to Pythagoras. The narrative of Philostratus may be admitted, in concurrence with other collateral evidence, as a sufficient testimony to the existence of such a man as Apollonius, and to his having been an eminent philosopher of the Pythagorean sect, who travelled through almost every part of the civilized world, exhibiting an example of strict and rigid morality, teaching lessons of moral wisdom, and doctrines of speculative philosophy, and attracting popular attention and reverence by pretending to supernatural powers. After all, very different opinions have been entertained concerning his character. Some have even supposed that the whole series of extraordinary events related concerning him has been the mere invention of Philostratus and others, for the purpose of obstructing the progress of Christianity, and providing a temporary support for the falling edifice of paganism; and it must be acknowledged that several writers on the side of infidelity have availed themselves of his history to cast a shade over the character of Christ, and to perplex and weaken the evidence afforded by his miracles, of his divine origin and mission. Some, allowing that such a person as Apollonius existed, of which there is no sufficient reason to doubt, have apprehended that he was intimately acquainted with nature, and deeply skilled in magical arts; and that he applied his knowledge and skill to the purposes of imposture, that he might thus delude a credulous multitude, and induce them to believe that he was something more than human; whilst others imagine, that he accomplished his fraudulent designs by means of a real intercourse with evil spirits. Perhaps the truth of the case is, that Apollonius was one of those impostors who professed to practise magical arts and perform other wonders for the sake of acquiring fame, influence, and profit among the vulgar. In this light he was regarded by his contemporaries: Lucian, who lived in the time of Trajan, and Apuleius, who flourished under Antoninus Pius, rank him among the most celebrated magicians.

How successfully Apollonius practised the arts of imposture, sufficiently appears from the events which followed.

The dominion over the minds of men which he found means to establish during his life, remained and increased after his death, so that he long continued to be ranked among the divinities. The inhabitants of Tyana dedicated a temple to his name. The Ephesians consecrated a statue to him, in commemoration of his having delivered them from the plague. The emperor Adrian collected his writings, and preserved them in his library. Caracalla dedicated a temple to him, as to a divinity among men. Alexander Severus kept, in his domestic temple, the image of Apollonius with those of Abraham, Orpheus, and Christ. Aurelian shewed the Tyaneans particular favour, from respect to his memory. Eusebius cites Hierocles, as ascribing to Apollonius a divine and hidden wisdom, by which, and not by magical art, he had performed great wonders; and it is added, that in his time there were persons who pretended to perform magical incantations by invoking the name of Apollonius. Ammianus Marcellinus (l. xxi. c. 14.), ranks this philosopher among those eminent men who have been assisted by the supernatural aid of a demon or genius, as Socrates and Numa: and Eusebius, who was indeed a credulous and fantastical Platonist, speaks of him as something between a god and man, and adds, that Philostratus ought to have intitled his history, "The Descent of a God upon Earth." The common people ranked him in the number of deified men, and made use of his name in incantations; and even among the philosophers of the Eclectic sect, he was regarded as a being of a superior order, who partook of a middle nature between gods and men.

Of the writings ascribed to Apollonius, none remain except his "Apology to Domitian," and his "Epistles." The first, in its substance, is genuine, but strongly marked with the sophistical manner of Philostratus: the latter abound with philosophical ideas and sentiments, and are written in a laconic style, which affords a presumption in favour of their authenticity. From these epistles it appears, that Apollonius blended with the Pythagorean system concerning the nature and origin of things, according to which God and nature are primary, independent principles, the notion of the Heraclitean school, viz. that the primary essence of all things is one, endowed with certain properties by which it assumes various forms; and that all the varieties of nature are modifications of the universal essence which is the first cause of all things, or God. Hence Apollonius taught, that all things arise in nature according to one necessary or immutable law; and that a wise man, being acquainted with the order of nature, can predict future events. Thus Apollonius connected superstition with impiety, and made both subservient to imposture. The epistles of Apollonius were edited by Commelin, in 8vo. in 1603; and by Stephens, in 1577. Philostrat. Vit. Apoll. Brucker's Hist. Philos. by Enfield, vol. ii. p. 42—49. Gen. Dict. Lardner's works, vol. viii. p. 256—292.

APOLLOS, a native Jew of Alexandria, and a Christian convert, was celebrated in the time of the apostles for his eloquence and his knowledge of the scriptures; Acts, xvii. 24. In the year 54, he went to Ephesus; and, during the absence of the apostle Paul, preached the gospel in the synagogue, and demonstrated from the scriptures that Jesus was the Christ. Having been more fully instructed by Aquila and Priscilla, he went to Corinth, and preached with such acceptance and success, that he made many converts; and such was his popularity, that they considered him as their leader, in opposition to Peter and Paul; 1 Cor. iii. 7. But this division did not alienate the affections of Paul and Apollos from each other. St. Jerom says, Apollos was so dissatisfied with the division which had happened on his account

at Corinth, that he retired into Crete with Zeno, a doctor of the law; but when the disturbance was appeased by the letter of St. Paul to the Corinthians, Apollos returned to this city, and became bishop there.

APOLLYON, in *Scripture History*, a Greek appellation corresponding to the Hebrew ABADDON, which see; see also APOLLO.

APOLOGETIC, APOLOGETICAL, something said or written by way of excuse or apology for any action or person.

The Apologetic, or Apology of Tertullian, is a work full of strength and spirit. He there vindicates the Christians from all that had been objected to them; particularly from the abominable crimes said to be perpetrated at their meetings, and their want of love and fidelity to their country. The ground of this last accusation was, their refusing to take the accustomed oaths, and swear by the tutelary gods of the empire. Tertullian addresses his Apologetic, written at Carthage about the year 200, to the magistrates of Rome, the emperor Severus being then absent, or rather to the governors of provinces, or perhaps to the proconsul of Africa; and the chief magistrates residing at Carthage. His Apologetic addressed to Scapula, proconsul of Africa, on account of his severe treatment of the Christians, is supposed by Cave (*Hist. Lit. t. i. p. 93.*), to have been written in the year 217.

APOLOGOS, in *Ancient Geography*, *Oboleb*, a town of Asia, upon the bank of the Pafitigris.

APOLOGUE, APOLOGUS, a moral fable, or a feigned relation intended to inform and amend the manners. Jul. Scaliger derives the name *απολογία*, inasmuch as the apologue means something more than what at first sight it expresses. Such are the fables of *Æsop*: whence, moral fables are usually denominated *Æsopic Fables*.

F. de Colonia makes it essential to the apologue, that it contain what passes among brutes; and distinguishes it from the parable by this, that the latter, though feigned, consists of possible circumstances, which the former does not, since brutes cannot speak. There is this farther difference between them, that the latter is a similitude drawn from natural, moral, or any other branches of knowledge; the former only from moral topics. See PARABLE.

Apologue, according to some, differs from fable, as the former is used in speeches and harangues, to persuade; the latter in tragedies, comedies, and other pieces of poetry, to instruct, and correct the manners. See FABLE. Apologue also differs from *enus*, as the latter is only calculated for the use of men, and carries a graver and weightier admonition; whereas apologues are proposed to children. We find many things in authors concerning the origin of apologues, the distinguishing characters of apologues, the use and advantage of the way of teaching by apologues. See Bayle, *Dict. Crit. in voc. & Shaftesb. Charact. tom. iii.*

APOLOGY, formed of *απολογία*, to refuse, defence; a discourse or writing in vindication of a person or performance.

The principal ancient apologies in favour of the Christians are those of Quadratus, written about the year 126, and addressed to the emperor Adrian, which is said by Jerom and Eusebius to have had a good effect on the emperor; of Aristides, written at the same time with the former, and presented to the same emperor; two of Julius Martyr, one of which was written in the year 150, and addressed to Antoninus Pius, Marcus Antoninus, Lucius Verus, and the senate and people of Rome, which is extant entire, and the other in 162, presented to Marcus Antoninus, the beginning of which is wanting; one of Melito, in 177, presented to the same emperor; one of

Athenagoras, written between the years of Christ 177 and 185, and presented to M. Antoninus and Commodus; one of Apollinaris, addressed to M. Antoninus about the year 176 or 177; one of Miltiades, about the year 180, addressed to the princes of this world; three books in defence of the Christian religion, by Theophilus, written a little before his death, in the beginning of the reign of Commodus, A. D. 181, and addressed to Antolycus, a learned heathen; that of Apollonius before the Roman senate, A. D. 186 or 187; the apologetic of Tertullian, and the dialogue of Minucius Felix, called *Octavius*, written in the beginning of the third century.

We have two excellent treatises by the learned and ingenious Dr. Watson, bishop of Landaff, under the title of Apology: one, an "Apology for Christianity," in a series of letters addressed to the well-known historian, Mr. Gibbon, and printed in 1776; and another, "An Apology for the Bible," in a series of letters addressed to Thomas Paine, author of "The Age of Reason," and printed in 1796. The name of the author will sufficiently recommend these tracts in defence of our common faith.

APOLYSIS, from *απολυω*, I release, in a general sense, the solution or resolution of any thing. Thus we read of the apolysis of a disease, the apolysis of a bandage, or the like.

APOLYSIS, in a more particular sense, denotes the exclusion of any thing. Thus we read of the apolysis of the *fœtus*, the secundines, and the like.

APOMELI, in *Medicine*, a kind of decoction prepared of honey, or a honeycomb, mixed with vinegar, and boiled a short time, till the qualities of both be united, and the acrimony of the vinegar allayed.

The *apomeli* is represented as a kind of medium between melle and oxymel. It was anciently of great use among the Greeks, as a detergent, promoter of stool, urine, &c.

APOMYOS DEUS, from *απο*, and *μυια*, fly, in the *Heathen Mythology*, a name under which Jupiter was worshipped at Elis; and Hercules, as well as Jupiter, at the Olympic games. These deities were supplicated under this name, to destroy or drive away the vast number of flies which always attended the great sacrifices; and in those which accompanied the Olympic games, the first was always to the *Apomyos* or *Myiagrus Deus*, that he might drive the flies away from the rest. The usual sacrifice was the bull.

APONEUROSIS, compounded of *απο*, from, and *νευρον*, a nerve, in *Anatomy*, signifies an expanded tendon. See the description of the Aponeurosis of the *musculus obliquus externus abdominis*.

APONEUROTICUS MUSCULUS, a name given by Spigelius, and some others, to a muscle of the thigh, called by Cowper and Winslow, the *musculus lati tendinis*, and *musculus fascie late*. Winslow has called it, with more propriety, the *musculus vaginæ femoris*.

APONIA, from *α*, and *πονος*, labour, among Physicians, a state of indolence, or the absence of pain. In which sense, the word amounts to the same with *anodynia*. Hence also aponia is used by some for medicines which do not excite pain.

APONIANA, in *Ancient Geography*, a name given by Hirtius (*De bell. Afr. c. 2.*), to an island near Sicily, opposite Lilybæum, and supposed by Clavier to be the same with Cēgusa.

APONO, PETER DE, in *Biography*, a celebrated philosopher and physician, born at a village of that name near Padua, about the year 1250, went early to Constantinople to acquire a knowledge of the Greek language, and from thence to Paris, where he was instructed in mathematics and in medicine. He appears also to have visited England

and Scotland. In 1502, he was invited to Padua, to fill the Professor's chair. He afterwards went to Bologna, and so great was his reputation for his skill in medicine, that he is said to have received fifty crowns for every visit he made out of the city. On being sent for to Pope Honorius the fourth, he stipulated to receive four hundred ducats a day while he continued at Rome. As he pretended to a knowledge of astrology, and thence to forecast the termination of the diseases for which he was consulted, he was accused of being a magician, and cited before the tribunal of the inquisition. On this charge, however, he was at that time acquitted, as appears by the following inscription placed over one of the gates of the palace, at the foot of his statue erected there in the year 1420:

" Petrus Aponus Patavians,
Philosophicæ medicinæ quæ scientissimus,
Ob idque Conciliatoris cognomen adeptus:
Astrologiæ vero adeo peritus,
Ut in magicæ suspitionem incidere,
Falsòque de hæresi postulatus, absolutus fuit."

But being again accused of the same crime, he died before the process was finished, aged 66 years. Not appearing, therefore, to answer the charges against him, he was condemned, and his body ordered to be taken up and committed to the flames. The officers not being able to find the body, his friends having removed and privately interred it, they burned him in effigy. Frederic, duke of Urbino, honoured him with a statue, which he placed among those of other illustrious persons in his castle.

While at Paris, he wrote, "Conciliator differentiarum philosophorum, et præcipue medicorum," which was so much esteemed as to acquire for him the title of "Conciliator." This book, which has passed through several editions, was first printed at Mantua, in 1472, in folio; in the same year was printed his book "De Venenis, eorumque remediis;" also in folio, in 1474, "La Fisonomie du Pierre de Apono;" at Padua in 8vo. in 1505, "Textus Mæ sue emendatus," Lugduni, 8vo. For the titles of various other works, and their different editions, see Eloy's Diction. Histor. de la Médecine. Gen. Dict.

APONOGETON, in *Botany*, Lin. supp. 32. Schreb. gen. 835. Thunb. nov. gen. 72. Juss. 19. Class. *dodecandria tetragynia*. Nat. order. *inundata: naiades*, Juss.

Gen. char.: *cal.* none, except a spathaceous scale surrounding the flower, simple, sessile, ovate, obtuse, entire, erect, smooth, coloured; *cor.* none; *stam.* filaments eleven to nineteen, in the upper flowers fewer, inserted between the spathe and the capsules, subulate, smooth, white, many times shorter than the spathe; *pist.* germ usually four; *styles* none; *stigmas* subulate, bent inwards; *per.* capsules four, seldom three or five, ovate, subulate, acute, gibbous on the outside, flat on the inner side, smooth, one-celled; *seeds* three in each capsule, attached to its base, sessile, obovate, very blunt, smooth, sub-compressed.

Ess. gen. char.: *cal.* an amicum; *cor.* none; *caps.* three-seeded.

Species 1. *A. monostachyon*, single-spiked aponogeton: spike simple; leaves cordate-oval; root bulbous; leaves very long, petioled, radical, entire, floating, spike hexangular; bractes instead of a corolla, two below each florèt; stamens six, longer than the bractes. Observed by Koenig to be common in the fields in the East Indies that are flooded for rice. 2. *A. distachyon*, broad-leaved aponogeton: spike bifid; leaves linear oblong, floating; bractes entire; flowers many-stamened. Thunb. nov. gen. 4; root bulbous; spike imbricated within; flowers white, fragrant, alternate, erect,

with an ovate bract: pistils three or four; stamens vary from six to twelve; it flowers almost all the year. Thunberg found it in brooks at the Cape of Good Hope, whence it was introduced here by Mr. F. Masson in 1758. 3. *A. angustifolium*, narrow-leaved aponogeton: spike bifid; leaves linear lanceolate, erect; bractes two-parted; flowers six-stamened. The stamens of this species are in the Supp. Plant. said to vary from six to twelve, whereby it has been confounded with the preceding plant. A native of the Cape of Good Hope, introduced by Mr. F. Masson, in 1788. It flowers during the greater part of the year.

Propagation and culture: these plants are inhabitants of the green house: or cape-flower, and may be increased by offsets from the bulbs. See Miller's Dict. by Martyn.

APONUS, in *Ancient Geography*, an hamlet near Patavium or Padua, and celebrated by Martial as the birth place of Livy, and on account of its baths: now ABANO.

APOPEMPTIC, from ἀποπεμπω, *I dismiss*, in the *Ancient Poetry*, a hymn addressed to a stranger on his departure from a place to his own country.

The ancients had certain holy days, wherein they took leave of the gods with apopemptic songs, as supposing them each returning to his own country.

APOPHASIS, from ἀποφημι, *I declare*, and *I deny*, in the *Civil Law*, an answer or rescript of the prince.

Among *Logicians*, the word is also used for a negation or denial.

APOPHASIS was also used for the account given of estates, at the exchange of them, for avoiding public employments. When any man would excuse himself from any troublesome and chargeable trull, by asking it on another richer than himself, the person produced had power to challenge him to make an exchange of estates, and thereby compel him to undergo the office he had before refused.

APOPHASIS, in *Rhetoric*, a figure whereby we really say or advise a thing, under a feigned show of passing over or dissuading it.

Quintilian makes the apophasis a species of irony. Scalliger holds it the same with what is otherwise called *occupatio*.

APOPHLEGMATIZANTIA, (from ἀποφλεγματίζω, *pituita purgo*), MASTICATORIA, SALIVANTIA.—SIALAGOGUES. This term is applied to those remedies, by which a discharge of saliva is produced, or the evacuation of the saliva promoted. They are, properly speaking, evacuant, stimulating remedies, which, when they are chewed, or made to operate upon the internal parts of the mouth or throat, partly contribute to render the viscid fluid thinner, and partly produce a more copious flow of the saliva and other fluids, and their evacuation from the glands situated within the cavity of the mouth, about the palate, pharynx, larynx, uvula, and tonsils. To this class of remedies belong all those solid substances, which can be moved backwards and forwards in the mouth, without injury; as in consequence of the pressure which they give to the salivary glands, and in mastication, the discharge from those passages is increased: on this account such substances are chosen for this purpose as possess at the same time a degree of acrimony. As a security against the infection of contagious diseases, it has therefore always been recommended to chew cubebs, cardamom, cinnamon bark, juniper berries, wax, marjoram, sage, angelica root, and to spit out the saliva thus secreted. More stimulant remedies of this kind are, tobacco-smoke, the leaves of tobacco, mustard-seed, horse-radish, ginger, pepper, pimpinella, &c.

To the true sialagogues belong those powerfully resolvent medicines, which dissolve the mucous and acrid lymph that

that degree, as to enable it to be separated and discharged by the smallest vessels of the glands:—to these belongs MERCURY.—However the use of sialagogues cannot be recommended without distinction, as they are detrimental to debilitated constitutions, and those that are much inclined to vomiting. They are prejudicial to ulcers within the cavity of the mouth, and are frequently fatal to emaciated and phthisical constitutions.

APOPHORETA, from ἀποφέρειν, *I carry away*, in *Antiquity*, presents made to the guests at a feast or other entertainments, which they carry away with them.

APOPIRADES, from ἀποφραξις, *unfortunate*, derived again from ἀπο, and φραζω, *I speak*, in *Physic*, denote a sort of unhappy days, wherein either no crisis, or an ill one, is to be expected.

APOPTHEGM, from ἀπο and φθεγγμαι, *I speak*, a short, sententious, and instructive saying or maxim, delivered by a person of distinguished character.

Such is that of Cyrus: “He is unworthy to be a magistrate, who is not better than his subjects.” Or this: “He that will not take care of his own business, will be forced to take care of that of others.” Or that of Artaxerxes Mneumon, when reduced to hunger by the loss of his baggage: “How much pleasure have I hitherto lived a stranger to!” Or that of Cato, “Homines nihil agendo discunt male agere.” Or, finally, that of Augustus, “festina lente.” The apophthegms of Plutarch are well known.

APOPHYGE, in *Architecture*, that part of a column where it begins to spring out of its base, and shoot upwards.

The word in its original Greek signifies *flight*; whence the French also call it *escapè, congé*, &c.; and we, sometimes, the *spring* of the column.

The apophyge, in its original, was no more than the ring or ferril heretofore fastened at the extremities of wooden pillars, to keep them from splitting; which afterwards was imitated in stone-work.

It is properly a large concave or arched member, serving either to connect two flat members together, or to join a flat member to another not flat.

In this sense we may distinguish two apophyges, the upper and lower.

APOPHYGE, *upper*, is that part, or sweep, whereby a large flat member of the upper part of an order is connected to the lower.

This is also called by the French *le congé d'enhaut*; and by the Italians, *il cavo di sopra*.

APOPHYGE, *lower, apophygis inferior*, is a concave member, which connects two flat parts in the lower part of an order.

This the French call *le congé d'enbas*; and the Italians, *il cavo di basso*. Sometimes also, *il vivo di basso*.

APOPHYSIS, in *Anatomy*, a protuberance of a bone; or a part eminent, and jutting out beyond the rest. The word literally denotes a production outwards; formed from ἀπο τῆ ἀποφύεσθαι, *to arise from*. It is the same with what we otherwise call process, eminence, protuberance, projection, protuberance, ephyllis, head, and the like. *Apophyses* differ from *epiphyses*, as these latter are only appendages adhering or contiguous to a bone; whereas the former are productions or continuations of the bone itself, shooting out from it like branches from the trunk of a tree. For an account of the kinds of processes or apophyses, which are found in the skeleton, see SKELETON.

APOPHYSIS, or *Processus mammillaris*, a name given to the olfactory nerves, when they lie on the cribriform lamella of the ethmoid bone.

APOPHYSIS *mammillaris*, or *mastoidea*, is a process in the petrous part of the TEMPORAL BONE.

APOPHYSIS *raviana*, denotes a large process of the MALLEUS of the ear, formed to give attachment to muscles.

APOPHYES is also applied by Hippocrates to certain fleshy excrescences found in mules, and female *satufes* of seven months, as appearing rather processes, and origins of members, than distinct members, such as he says may be found in male *satufes*.

APOPHYES, in *Botany*, excrescences from the receptacle of the *musci*.

APOPLANESIS, from ἀποπλανω, *I deceive*, in *Oratory*, a kind of fallacious defence, and flurring over, darkening, and concealing things, in order to blind the judges, or the audience.

APOPLANESIS, in a more particular sense, denotes a sort of confutation, wherein the speaker promises to answer what the adversary objects in another place, but which being too difficult to answer, is afterwards forgot and left to pass unanswered.

APOPLEPTIC, relating to an apoplexy. Thus we say, an apopleptic fit, an apopleptic water, &c.

APOPLECTIC *veins*, a name sometimes given to the *jugulars*.

APOPLECTICA, *apoplectical medicines*, a name used by some for what we more properly call *antapoplectics*.

APOPLECTICAL *balsams* is a name given by some writers, to a sort of sweet scented balsms, prepared of distilled oils, and used by way of perfume.

APOPLEXY, APOPLEXIA, in *Medicine*, a sudden privation of all the senses, and all the sensible motions of the body, excepting those of the heart and lungs, attended with a great depravation or suspension of the principal faculties of the mind.

The word comes from ἀποπλησσειν, *to strike*, or *astonish*; this distemper striking suddenly, and, as it were, like a flash of lightning.

Hippocrates distinguishes two kinds of apoplexies, the one *strong*, the other *weak*; only differing in the greater or less difficulty of respiration and the circulation: in the former the pulse and breath seem almost entirely stopped; in the latter there are considerable remains of them.

The more modern authors distinguish apoplexies from their *causes* (affecting the brain, or nervous system in general), into *sanguineous, serous, nervous, spasmodic, symptomatic*, &c. Dissections discover the *sanguineous* only; unless HYDROCEPHALUS may be considered as producing cases of *serous* apoplexy. The speedy recovery of the patient, in a considerable number of instances, together with some other considerations, have induced medical writers to admit the other species. Whenever apoplexy is followed by paralysis, it appears from dissections, that it always is of the sanguineous kind. For Dr. Cullen's other species, see HYDROCEPHALUS, CATALEPSIA, ASPHYXIA, &c.

The fit of apoplexy is usually preceded by a violent pain in the head, a dimness and loss of sight or memory; sometimes by an universal indolence. It is attended with a steror and difficulty of breathing; sometimes with a fever, rarely with a foaming at the mouth; frequently with a sweat, hæmorrhoids, or diarrhœa.

With respect to the *proximate* cause, a multitude of the most accurate observations have made it appear, that this disorder arises from any cause that is capable of preventing either totally, or in part, the influx of the nervous fluid, supposed to be secreted in the *cerebrum*, to the organs of sense

and voluntary motion; and the reflux of the same fluid from the above mentioned organs to the common sensorium in the brain; whilst the progress, and perhaps the return of the fluid, supplied by the *cerebellum* to and from the heart and organs of respiration, is preserved in a degree sufficient to support in some measure their functions.

All the remote, predisposing, or occasionally exciting causes, as observed and delivered by authors, may for the greater perspicuity be reduced to classes; in the first of which may be reckoned,

1. The natural make of the body. Thus, when the head is naturally large, the neck short, and as it sometimes happens, consisting only of six *vertebrae*, whereas there ought to be seven; this structure disposes to apoplexy, as it favours the congestion of blood in the head. Thus also, if the body is corpulent, the capillary arteries will in general be subject to compressions, or the circulation in them will be more languid in proportion to that in the larger trunks; hence arise local congestions of blood; and the face and neck in particular are observed to be turgid, florid, or bloated.

2. To the second class belong all those causes which induce such a change in the blood, lymph, and nervous fluid, as to render them incapable of circulating freely through their respective vessels in the brain; till lately, this class of causes was considered as more generally applicable to pathology than any other. At present, the existence of such causes is more generally doubted than believed. So great, indeed, is the instability of Medical Theories at this time, that many physicians of great respectability have seriously recommended our return to professed Empiricism. As this, however, is not likely to take place soon, we shall mention the causes which have been assigned by eminent Pathologists, and leave their adoption or rejection to the judgment of the public. Among these are—polypous or grumous concretions in the carotid or vertebral arteries, whether formed originally about the heart, or within the *cranium*; these are discovered by a palpitation of the heart, an unequal pulse, a vertigo, and temporary loss of sight often recurring, and which are increased by motion or heat: an inflammatory siziness of the blood, which may be known by an acute continual fever, an inflammatory pain in the head, eyes, &c.—a thick, glutinous, and sluggish disposition of the whole mass of blood; whence old people, those who are much subject to catarrhs, whose constitutions are cold and moist, and who are pale and leucophlegmatic, are very subject to apoplexies. It is not difficult to presage an apoplexy from this cause, as it is generally preceded by an universal listlessness and dulness of the senses, unusual slowness of speech, tremors, stertors, *incubi* (night mares), frequent discharges of viscid phlegm by vomit, vertigoes, shortness of breath on the least motion, with a compression of the cartilages of the nose.

3. To the third class belongs whatever *compresses* the arteries themselves, or the nervous fibrillæ of the brain, so as to prevent a free circulation of the fluids through them. People who are plethoric and bloated are much subject to this species of apoplexy; especially if extraordinary motion or heat increase the velocity of the circulation. To such, therefore, high feeding, spirituous liquors, acrid medicines, intense and long-continued thought, are pernicious. All humours extravasated or effused within the *cranium* properly belong to this class; as also a too great velocity of the blood in the vessels of the head, determined thither by some impediment to the circulation in the inferior parts, which may arise from an infinite number of causes. Hither also may be referred all compressions, from whatever cause, of the veins without the head, which convey the reflux blood from the contents

of the *cranium* toward the heart; as also effusions of blood, pus, ichor or lymph, which press externally on the *dura* or *pia mater*.

4. To the fourth class belong all those causes, which by any means so dissolve the texture or wear down the coats of the arteries, veins, or lympheducts, belonging to the internal parts of the *cerebrum*, as to cause an extravasation of their respective fluids, which then press upon and injure the medullary origin of the nerves of the *cerebrum*.

5. Some sorts of poisons, which are suddenly deleterious, may be ranked in the fifth class; but these may either be reduced to the second, third, or fourth, or may be more properly said to act on the nervous system or the blood, than the brain. Among these are the fumes of mineral sulphurs, of charcoal, or that gas which exhales from vegetable juices during fermentation.

The anatomical inspection of bodies which have died of apoplexies, and the historical observation of such circumstances as occur in the treatment of these cases, furnish us with a knowledge of their causes: and a due reflection upon these naturally leads us to a distribution of them into the preceding classes, which are well adapted to the investigation of the best methods of cure. The part affected in a perfect, violent, or what Hippocrates calls a *strong apoplexy*, appears to be the entire sensorium commune, or what has been called the whole *brainular system*; but in a *parapoplexia*, those parts only of the common sensorium which are more compressed than the rest; whilst the *cerebellum*, and its dependencies, remain in the beginning of the disorder unaffected. Boerhaave.

As to the *prevention and cure* of apoplexy, no invariable rules can be laid down; for as the predisposing and exciting causes, together with the parts principally affected, are various, the method of relief must also vary; and must be attempted before the predisposition grows inveterate, otherwise success will be very precarious.

In general, however, to prevent an apoplexy, wine, hard labour, excess in eating, and sleeping after dinner, are to be avoided: exercise is to be kept up, anxiety and chagrin to be restrained. To *cure* an apoplexy, the *indications* must be taken from the appearance and age of the patient; but more particularly from the remote and proximate causes. The person being placed and supported as nearly in the sitting posture as possible; and a free access of fresh air secured; we must, during the fit, in the *sanguineous* kind, employ copious evacuations of blood, serum, and *fæces*.

The jugulars or temporal arteries should be opened as soon as a proper operator can be procured. In default of one, the vein of the arm or leg should be tried; or cupping, or leeches applied to the occiput and back of the neck, so as to take away nearly a pint of blood. The head should be shaved, and as soon as a sinapism has inflamed the skin, an active blister must be applied to the whole occiput and back of the neck. Sinapisms also should be applied to the legs.

When these steps have been taken, the patient should be laid on his side, with his head raised; and a stimulating clyster with aloes and spirit of turpentine injected as soon as possible: if no urine is evacuated with the return of the clyster, the catheter should be introduced.

As soon as swallowing becomes practicable, ten or fifteen grains of calomel should be got down, and repeated if necessary. If these means, duly employed, produce no relief in twenty-four or thirty-six hours; the patient's recovery will be very doubtful, if not impossible.

In the *ferous* kind, that is, where the patient has not signs of fulness of blood, but on the contrary a poverty or defect

defect of that fluid, blisters and evacuations of the bowels constitute the principal means of relief; bleeding, even with leeches, should be admitted with caution.

In the *nervous* or *symptomatic* species, the treatment will vary with the cause. When noxious gasses have been inhaled, or poison swallowed, the offending cause should be removed, and its place supplied by salubrious air, or medicated food.

Dr. Flemming recommends trepanning for the cure of apoplexies. Med. Mus. vol. ii. p. 300, &c.

Termination. The disease sometimes degenerates into a *paralysis*; and sometimes only half the body is affected, in which case it is called simply a *hemiplegia*.

Apoplexy differs from *carus*, *lethargy*, and *coma*, as in those three distempers the stupor is not so profound, nor is all sensation quite destroyed.

It differs from *syncope*, in that there is little or no sensible pulse in this last; whereas in an apoplexy, the pulse is often full, and perceptible almost till death.

It differs from *epilepsy*, because all motion is not abolished in that, as in this; and it differs from the *palsy*, inasmuch as the palsy is not attended with any stupor, nor does it deprive the patient of sense and perception.

APOPLEXY is also reckoned among the diseases of hawks; being a distemper which seizes their heads, occasioned by too much grease and blood, or their having stood too long exposed to the heat of the sun, or having taken too long flights in the heat of the day.

Horses are also said to be subject to apoplexies, occasioned by want of exercise, or too plentiful feeding.

The distemper shews itself by a giddiness, reeling, trembling, and sometimes falling suddenly down without sense or motion. The cure is by taking a large quantity of blood from the neck, and applying volatile spirits to the nostrils.

APOPLISTÆ, from *απο*, and *οπλον*, *arms*, in *Ancient Laws*, a sort of officers in the country, appointed to disarm all private persons, or those not entitled to have arms; for the prevention of mischief and violence.

APOPOMPÆ, in *Antiquity*, certain days in which sacrifices were offered to the gods called *pompai*. Who these deities were, is doubtful.

APOPSYCHIA, from *απόψυχα*, *I expire*, is sometimes understood of effluvia emitted from the sun, moon, and other heavenly bodies; to which their influence on sublunary things was ascribed by astrologers.

APOQUENEMY *Creek*, in *Geography*, a creek of America, which falls into Delaware-bay from Middle-town, in Newcastle-county in Delaware, a mile and a half below Reedy island.

APORIA, from *απορειω*, *I doubt*, in *Rhetoric*, denotes a state of doubt or wavering, wherein the orator appears undetermined whether to say any thing or not: e. gr. "*Eloquar, an sileam? Shall I speak out, or hold my tongue?*"

The uneasiness arising from such a disorder of thought, and the hesitation produced by it, are naturally very moving. Of this kind is that of Cicero for Cluentius (c. i.): "I know not which way to turn myself. Shall I deny the scandal thrown upon him of bribing the judges? Can I say the people were not told of it? that it was not talked of in the court? mentioned in the Senate? Can I remove an opinion so deeply and long rooted in the minds of men? It is not in my power. You, judges, must support his innocence, and rescue him from this calamity." Orators sometimes begin their discourse with this figure; and as it expresses a diffidence of mind, and has an air of modesty, it tends very much to conciliate the affections of the hearers.

Livy gives us a very elegant example of this, in a speech of Scipio Africanus to his soldiers, when he called them together after a sedition: "I never thought I should have been at a loss in what manner to address my army.—I am in doubt what or how to speak to you, not knowing what name to give you. Shall I call you citizens, who have revolted from your country? Soldiers, who have disowned the authority of your general, and violated your military oath? Enemies? I perceive the mien, the aspect, and habit of citizens; but discern the actions, words, designs, and dispositions of enemies." Livy, hb. xxviii. c. 27. tom. iv. p. 228. ed. Drakenb.

APORON, or APORIME, a problem difficult to resolve, though it be not certain that the resolution of it is impossible.

The word is derived from *απορος*, which signifies something very difficult and impracticable; being formed from the privative *α* and *πορος*, *passage*.

Such we conceive the quadrature of the circle; the duplication of the cube; the trisection of an angle, &c.

When a question was proposed to any of the Greek philosophers, especially of the sect of academists; if he could not give a solution, his answer was, *απορειω*, q. d. "I cannot conceive it: I am not able to explain it."

This word is also used by some law-writers for an inexplicable speech or discourse.

APORRHOEA, APORRHOES, in *Philosophy*, sulphureous effluvia, or exhalations, emitted from the earth and subterraneous bodies.

The word is formed from *απορρηνω*, *defluo, to flow from*.

APORRHOEA, in *Physic*, is sometimes particularly used for morbid or contagious *miasmata*, or effluvia from unwholesome bodies. The word is also used to denote a shedding or falling of the hair. See ALOPECIA.

APOSIOPESIS, from *αποσιωπωω*, *I am silent*, in *Rhetoric*, otherwise called *reticency*, and *suppression*; a figure, by which a person really speaks of a thing, at the same time that he makes a show as if he would say nothing of it. See PRETERITION.

It is commonly used to denote the same with ELLIPSIS. Jul. Scaliger distinguishes them. The latter, according to him, being only the suppression of a word; as "me, me: adsum qui feci;" the former, the omitting to relate some part of the action; as,

"Dixerat, atque illam media inter talia ferro
Collapsam adspiciunt——."

Where the poet does not mention how Dido killed herself. This figure is of use to keep up the grandeur and sublimity of a discourse.

This figure denotes different passions; as anger, which, by reason of its heat and vehemence, causes persons to break off abruptly in their discourse. Thus the old man in Terence, when he was jealous that his servant obstructed his designs, uses this imperfect but threatening expression: And. act. i. sc. i. v. 137. "Whom if I find." And also Neptune, when described by Virgil as very angry, that the winds should presume to disturb the sea without his permission, after he has called them to him to know the reason of it, threatens them in this abrupt manner: "Whom I—but first I'll lay the storm." Æn. lib. i. v. 139.

Cicero, in writing to Atticus, applies it to express grief; "I know nothing of Pompey, and believe he must be taken, if he is not got on shipboard: O incredible swiftness! But of our friend.—" Ad Fam. lib. vii. ep. 22. And in a letter to Cassius, he uses it to express his fear: "Brutus could scarcely support himself at Mutina: if he is safe, we have carried the day. But if—heaven avert the omen,"

omen," &c. *Hieroglyphica*, "it should be defeated." *Al. Fam. lib. xii. c. 1.*

APOSKELARISMUS, a species of fracture of the skull or other bone, wherein a piece is taken clearly off, as if cut out with a hatchet; from *σκαλίζω*, *to cut*, or *hatchet*.

APOSPASMA, from *σπασμα*, *I tear off*, in *Surgery*, denotes a solution of continuity in some organized part, as a membrane, ligament, or the like.

APOSPHACELISIS, from *σφραγίζω*, *I stamp*, *signification*, &c. in the *Latent Surgery*, denotes a mortification of a fleshy part, happening in sides of wounds and fractures, from too tight a ligation.

APOSPHRAGISMA, from *σφραγίζω*, *I seal*, in *Antiquity*, the figure or impression of a seal.

It was to bid among the ancients to have the figure or image of God on their rings and seals. To this purpose the precepts of Pythagoras, *Ἐπιπέσει τὸν ἑαυτοῦ ἀνδρῶν δακτύλιον ἐν τῷ θεῷ*! But in process of time, this was little regarded; it was usual enough to have the figures of Egyptian and other deities, as well as of heroes, moulders, friends, ancestors, and even brutes, on their *distyli*, or ring-seals. Thus Cæsar had the image of Venus, Pollio of Alexander, Augustus of the *sphinx*, Pompey of a frog, Lentulus of his grandfather, &c.

APOSTASIS, from *ἀφίστημι*, *I depart*, &c. in *Physic*, usually signifies the same with abscess.

In which sense the word is used by Hippocrates and others, promiscuously with *ἀποσθημα*, *aposthem*.

APOSTASIS, in a more particular sense, denotes a departure or removal of the morbid matter, in the crisis or solution of a disease.

APOSTASIS is also used by Hippocrates for a fracture of a bone, wherein some part is entirely separated or broken off.

APOSTASY, a deserting or abandoning of the true religion.

The word is borrowed from the Latin *apostatare*, or *apostare*, to *despise*, or *violate*, any thing. Hence *apostatare leges* anciently signified to transgress the laws. *Qui leges apostabit terre sue reus sit apud regem*. LL. Edw. Confess. The Latin *apostatare*, again, comes from *ἀπο*, *from*, and *ίστημι*, *I stand*.

Among the Romaniſts, apostasy also signifies the forsaking of a religious order, whereof a man had made profession, without a lawful dispensation.

The ancients distinguished three kinds of apostasy: the first, *à supererogatione*, is committed by a priest, or religious, who abandons his profession, and returns to his lay state; the second, *à mandatis Dei*, by a person of any condition, who abandons the commands of God, though he retains his faith; the third, *à fide*, by him who not only abandons his works, but also the faith.

There is this difference betwixt an *apostate* and a *heretic*; that the latter only abandons a part of the faith, whereas the former renounces the whole.

The primitive Christian church distinguished several kinds of apostasy. The first was that of those who relapsed from Christianity into Judaism: the second, that of those who blended Judaism and Christianity together; the third, that of those who so far complied with the Jews as to communicate with them in many of their unlawful practices, without making a formal profession of their religion: and the fourth, was that of those who, after having been Christians, voluntarily relapsed into Paganism. The perversion of a Christian to Judaism, Paganism, or other false religion, was punished by the emperors Constantius and Julian with confiscation of goods: to which the emperors Theodosius and Valentinian added capital punishment, in case of the

apostat.'s perverting others to the same iniquity: a punishment, says Blackstone, too severe for any temporal laws to inflict upon any spiritual offence, and yet the zeal of our ancestors imported it into this country: for we find by Bracton, that in his time apostats were to be burnt to death. It is also said to have been anciently punishable, in England, by burning, and tearing to pieces by harts. Thus Fleta, lib. 1. c. 37. § 2. "Apostati & facilegi. & iniustum, detractari debent & comburi." And, § 4. "Si inde convincantur, detractantur, & suspendantur." Where Du Cange interprets, *detractantur*, by *tirer à quatre chevaux*.

This punishment has long ago become obsolete, and the offence of apostasy was for a long time the object only of the ecclesiastical courts, which corrected the offender "pro salute animæ." Nevertheless, it was enacted by Statute 9 and 10 Will. III. c. 32., that if any person educated in, or having made profession of, the Christian religion, shall, by writing, printing, teaching, or advised speaking, deny the Christian religion to be true, or the holy scriptures to be of divine authority, he shall, upon the first offence, be rendered incapable to hold any office or place of trust; and, for the second, be rendered incapable of bringing any action, being guardian, executor, legatee, or purchaser of lands, and shall suffer three years imprisonment, without bail. To give room, however, for repentance, if, within four months after the first conviction, the delinquent will, in open court, publicly renounce his error, he is discharged for that once from all disabilities. Such, however, is the spirit of toleration which has prevailed in this country, that penal statutes in the province of religion, though they still exist, have long lain dormant, and find few advocates in modern times.

APOSTATA *capiendo*, a writ which anciently lay against one, who having entered and professed some order of religion, broke out again, and wandered through the country, contrary to the rules of the order.

APOSTATE, in a general sense, signifies a deserter from the true religion.

In which sense *apostate* amounts to much the same with lapsed, perverted, &c.

APOSTERIGMA, from *ἀπο* and *στηρίζω*, *I support*, in the *Ancient Physic*, denotes a rest or support for a diseased part, without binding.

Such are pillows, cushions, and the like.

The word seems also to have been used by Hippocrates for a stoppage, or obstruction of some vascular part.

A POSTERIORI. Demonstration *à posteriori*. See DEMONSTRATION.

APOSTHUME, or APOSTEM, APOSTEMA, in *Surgery*, a preternatural tumor; called also ABSCESS, and IMPOSTHUME.

The word comes from *ἀφίστημι*, *abscedo*, *I depart from one place and fix in another*, alluding to the manner wherein the tumor is usually formed of a translated humour.

APOSTHUME is particularly used for a disease of hawks, which occasions swellings in the head, arising from a redundancy of humours, and a preternatural heat of that part.

The aposthume discovers itself by a swelling of the eyes, a moisture issuing from the ears, and their wings extremely stitful.

APOSTIL, *apostilla*, in *Matters of Literature*, a marginal addition, or note to a book, passage, or the like.

APOSTLE, *ἀποστολος*, one of the twelve disciples of Jesus Christ, commissioned by him to preach his gospel, and propagate it to all the parts of the earth. The word originally signifies a person *delegated* or *sent*; from *ἀποστέλλω*, *mitto*; in which sense it occurs in Herodotus, and other profane authors. Hence, in the New Testament, the term is applied

A P O S T L E.

applied to divers sorts of delegates ; and to the twelve disciples by way of eminence. They were limited to the number twelve, in allusion to the twelve tribes of Israel. (See Mat. xix. 28. Luke, xxii. 30. Rev. xxi. 12. 14. ; and compare Exod. xxiv. 4. Deut. i. 23. and Josh. iv. 2, 3. ;) accordingly care was taken, on the death of Judas, to chuse another, to make up the number, Acts, i. 21, 22. 26. This seems to have been a token of respect to the Jews, previous to the offer of the Gospel to them ; whereas, when they had generally rejected it, two more, Paul and Barnabas, were added, without any regard to the number of twelve. Of the first selection and commission of the twelve apostles, we have an account, Luke vi. 13, &c. Mat. x. 1, &c. Having chosen and constituted twelve persons, under the name of Apostles, our blessed Lord determined that for some time they should be continually with him, not only to attend upon his public ministry, but to enjoy the benefit of his private conversation, that he might furnish them the better for the great work in which they were to be employed ; and that, at length, after suitable preparation, he might, with greater advantage, send them abroad to preach his Gospel, and thus make way for his own visits to some more distant parts, where he had not yet been. And to enable them more effectually to do it, he endowed them with the power of working miracles, of curing diseases, and casting out demons ; well knowing that such endowments would command a regard, notwithstanding the meanness of their origin and appearance. About the commencement of the third year of his ministry, according to the common account of its duration, he sent them out two by two, or in pairs, that they might be agreeable companions and assistants to each other in their work ; and he commanded them to restrict their teaching and services to the people of Israel, and to avoid going to the Gentiles or to the Samaritans ; to declare the approach of the kingdom of heaven, and the establishment of the Gospel dispensation ; to exercise the miraculous powers with which they had been endowed gratuitously, and to depend for their subsistence on the providence of God, and on the donations of those to whom they ministered. Their names were : Simon-Peter ; Andrew, his brother ; James the greater, the son of Zebedee ; and John his brother, who was the beloved disciple ; Philip of Bethsaida ; Bartholomew ; Thomas, called Didymus, as having a twin-brother ; Matthew or Levi, who had been a publican ; James, the son of Alpheus, called James the less ; Lebbeus, surnamed Thaddeus, and who was also called Judas or Jude, the brother of James ; Simon, the Canaanite, so called, as some have thought, because he was a native of Cana, or, as Dr. Hammond thinks, from the Hebrew קנא *kana*, signifying the same with Zelotes, or the Zealot, a name given to him on account of his having before professed a distinguishing zeal for the law ; and Judas Iscariot, or a man of Carioth (Josh. xv. 25.), who afterwards betrayed him, and then laid violent hands on himself. Of these four, *viz.* Simon, Andrew, James the greater, and John, were fishermen ; two, *viz.* Matthew, and James, the son of Alpheus, were publicans ; and the other six were probably fishermen, though their occupation is not distinctly specified.

After the resurrection of our Saviour, and not long before his ascension, the place of Judas the traitor was supplied by Matthias, supposed by some to have been Nathaniel of Galilee, to whom our Lord had given the distinguishing character of an " Israelite indeed, in whom there was no guile : " and the twelve apostles, whose number was now completed, received a new commission, of a more ex-

tensive nature than the first, to preach the Gospel to all nations, and to be witnesses of Christ, not only in Jerusalem, in all Judea, and in Samaria, but unto the uttermost parts of the earth ; and they were qualified for the execution of their office by a plentiful effusion of miraculous powers and spiritual gifts, and particularly the gifts of tongues. In consequence of this commission, they preached first to the Jews, then to the Samaritans, and afterwards to the idolatrous Gentiles. Their signal success at Jerusalem, where they opened their commission, alarmed the Jewish Sanhedrim, before which Peter and John were summoned, and from which they received a strict charge never more to teach, publicly or privately, in the name of Jesus of Nazareth. The noble reply, and subsequent conduct of the apostles, are well known. This court of the Jews was so awed and incensed, as to plot the death of the twelve apostles, as the only effectual measure for preventing the farther spread of Christianity. Gamaliel interposed, by his prudent and moderate counsel ; and his speech had so good an effect upon the Sanhedrim, that instead of putting the apostles to death, they scourged them, renewed their charge and threats, and then dismissed them. The apostles, however, were not discouraged nor restrained ; they counted it an honour to suffer such indignities, in token of their affection to their master, and zeal in his cause ; and they persisted in preaching daily in the courts of the temple, and in other places, that Jesus of Nazareth was the promised and long-expected Messiah. Their doctrine spread, and the number of converts in Jerusalem still increased. During the violent persecution that raged at Jerusalem, soon after the martyrdom of St. Stephen, several of the leading men among the Christians were dispersed ; some of them travelled through the regions of Judea and Samaria, and others to Damascus, Phœnicia, the island of Cyprus, and various parts of Syria ; but the twelve apostles remained, with undaunted firmness, at Jerusalem, avowing their attachment to the persecuted intercessor of Christ, and consulting how they might best provide for the unforeseen emergencies of the church, and its infant and oppressed state.

When the apostles, during their abode at Jerusalem, heard that many of the Samaritans had embraced the Gospel, Peter and John were deputed to confer upon them the gift of the Holy Spirit ; for to the apostles belonged the prerogative of conferring upon others spiritual gifts and miraculous powers. In their return to Jerusalem, from the city of Samaria, they preached the Gospel in many Samaritan villages. The manner of its being sent to Ethiopia, by the conversion of the eunuch who was chief treasurer to Candace, queen of the country, is related in Acts, viii. 26. &c. After the Christian religion had been planted in Jerusalem, Judea, and Samaria, and sent into Ethiopia, one of the uttermost parts of the earth (Acts, i. 8.) ; and after it had been preached about eight years to the Jews only ; God, in his wise and merciful providence, disposed things for the preaching of it among the Gentiles. With this view, about the year 41, the next transition was to the devout Gentiles within the borders of Palestine. As they had cast off idolatry on the one hand, and on the other hand had not submitted to the ceremonial part of the Jewish law, they were better disposed and prepared for receiving the Gospel. Cæsarea was the scene in which the apostle Peter was to open his commission for this purpose ; and Cornelius, one of the devout Gentiles, and a man distinguished by his piety and charity, was a proper person to be selected as the first proselyte to Christianity. After Peter had laid the foundation of a Christian church among the devout Gentiles,

other

other Christians imitated his example, and a great number of persons of this description embraced the Christian faith, more especially at Antioch, where the disciples, whom their enemies had hitherto called *Gilelans*, *Nazarenes*, and by other names of reproach, and who, among themselves, had been called *disciples*, *believers*, *the church*, *the saints*, and *brethren*, were denominated, possibly not without a divine admonition, *Christians*.

When Christianity had been preached, for about eight years, among the Jews only, and for about three years more among the Jews and devout Gentiles, the next gradation of its progress was to the idolatrous Gentiles, in the year of Christ 44, and the 4th year of the emperor Claudius. Barnabas and Saul were selected for this purpose, and constituted in an extraordinary manner apostles of the Gentiles, or uncircumcision. Barnabas was probably an elder of the first rank; he had seen Christ in the flesh, had been an eye-witness of his being alive again after his crucifixion, and had received the Holy Spirit on the day of Pentecost, as being one of the 120. Saul also, since his conversion, had preached as a superior prophet, about seven years to the Jews only, and about two years more to the Jews and devout Gentiles. They had both been born in Gentile countries; and therefore may be supposed to have had more respect and affection for the Gentiles, than most of the Jews who were natives of Judæa. Saul had been converted, and had hitherto preached chiefly on Gentile ground; and he had joined with Barnabas in teaching devout Gentiles for a whole year, at Antioch in Syria; by all which previous steps they were regularly conducted to the last gradation, or the conversion of the idolatrous Gentiles. But it was necessary, in order to the being an apostle, to have seen our Lord Jesus Christ alive after his crucifixion, for the apostles were in a peculiar manner the witnesses of his resurrection. Some have supposed that Saul saw the person of Jesus, when he was converted, near the city of Damascus; but others, who conceive from attention to the history of this event, that this could not have been the case, as he was instantly struck blind, are of opinion that the season, when his apostolic qualification and commission were completed, was that mentioned by himself (Acts, xxii. 17.), when he returned to Jerusalem the second time after his conversion; when he saw the Lord Jesus Christ in person, and received the command to go quickly out of Jerusalem, and was informed that he should be sent unto the Gentiles. See also, Acts, xxvi. 16—20., where he gives an account of the object of his commission. He also received a variety of gifts and powers, which, superadded to his own genius and learning, as well as fortitude and patience, eminently qualified him for the office of an apostle, and for that particular exercise of it which was assigned to him. St. Paul is frequently called the *Apostle*, by way of eminence; and the *Apostle of the Gentiles*, because his ministry was chiefly employed for the conversion of the Gentiles, as that of St. Peter was for Jews, who is therefore styled the *Apostle of the Circumcision*.

The apostles having continued at Jerusalem twelve years after the ascension of Christ, as tradition reports according to his command, determined to disperse themselves in different parts of the world. But what were the particular provinces assigned to each does not certainly appear from any authentic history. Socrates (Hist. Eccl. lib. i. c. 19.) says, that Thomas took Parthia for his lot; Matthew, Ethiopia; and Bartholomew, India. Eusebius (Hist. Eccl. lib. iii. *ad init.*) gives the following account: "Thomas, as we learn by tradition, had Parthia for his lot; Andrew, Scythia; John, Asia; who having lived there a long time, died at Ephesus. Peter,

as it seems, preached to the dispersed Jews in Pontus and Galatia, Bithynia, Cappadocia, and Asia: at length, coming to Rome, he was crucified with his head downward, as he had desired. What need I to speak of Paul, who fully preached the Gospel of Christ, from Jerusalem to Illyricum, and at last died a martyr at Rome, in the time of Nero." From this passage we may conclude, that at the beginning of the 4th century there were not any certain and well attested accounts of the places out of Judæa, in which any of the apostles of Christ preached; for if there had, Eusebius must have been acquainted with them.

The stories that are told concerning their arrival and exploits among the Gauls, the English, the Spaniards, the Germans, the Americans, the Chinese, the Indians, and the Russians, are too romantic in their nature, and of too recent a date, to be received by an impartial inquirer after truth. These fables were for the most part forged after the time of Charlemagne, when most of the Christian churches contended about the antiquity of their origin, with as much vehemence as the Academics, Egyptians, and Greeks, disputed formerly about their feebility and precedence.

It appears, however, that all of them did not die by martyrdom. Heraclion, the Valentinian, cited by Clemens Alexandrinus (Strom. lib. iv. p. 502.), reckons among the apostles, who did not suffer martyrdom, Matthew, Thomas, Philip, and Levi, probably meaning Lebbaeus.

To the apostles belonged the peculiar and exclusive prerogative of writing doctrinal and preceptive books of authority in the Christian church; and it sufficiently appears that no epistles or other doctrinal writings of any person who was of a rank below that of an apostle, were received by Christians as a part of their rule of faith. With respect to the writings of Mark and Luke, they are reckoned historical, not doctrinal or dogmatical; and Augustine says, that Mark and Luke wrote at a time when their writings might be approved not only by the church, but by apostles still living. The credit of men, not apostles, though they were companions of apostles, was admitted no farther than as historians, or reporters of what they had seen, or of what they had heard from apostles, or eye-witnesses, and ministers of the word.

The several apostles are usually represented with their respective badges or attributes: St. Peter with the keys; St. Paul, with a sword; St. Andrew, with a cross or saltire; St. James minor, with a fuller's pole; St. John, with a cup, and a winged serpent flying from it; St. Bartholomew, with a knife; St. Philip, with a long staff, whose upper end is formed into a cross; St. Thomas, with a lance; St. Matthew, with a hatchet; St. Matthias, with a battle-ax; St. James major, with a pilgrim's staff, and a gourd bottle; St. Simon, with a saw; and St. Jude, with a club.

This appellation of Apostles was also given to the ordinary travelling ministers of the church. Thus St. Paul, in the epistle to the Romans, xvi. 7. says, "Salute Andronicus and Junia, my kinsmen and fellow-prisoners, who are of note among the apostles." In this inferior sense the appellation is applied by Clement of Alexandria, to Barnabas; and it is alleged that he was not an apostle in the highest sense of the word, so as the twelve and Paul were apostles. Tertullian calls all the seventy disciples, apostles; and Clement calls Barnabas apostolical only in another place, and says, that he was one of the seventy, and fellow-labourer of Paul. These, says Dr. Lardner, are the highest characters which he really intends to give to Barnabas, and what he means when he styles him apostle; therefore he need not be sup-

posed to ascribe to Barnabas that large measure of inspiration and high authority, which was peculiar to the apostles, strictly and properly so called. In a similar subordinate form St. Clement of Rome is called apostle. Timothy also is called by Salvia, apostle, meaning merely apostolical, or a companion and disciple of apostles.

APOSTLE was likewise a title given to those sent by the churches to carry their alms to the poor of other churches. This usage they borrowed from the synagogues, who called those whom they sent on this message, by the same name; and the function or office itself *αποστολη*, *apostle*, q. d. *mission*. Thus St. Paul, writing to the Philippians, tells them, that Epaphroditus, their *apostle*, had ministered to his wants, ch. ii. 25. It is applied in like manner to those persons who first planted the Christian faith in any place.

Thus Dionysius of Corinth is called the *apostle of France*; Xavier, the *apostle of the Indies*, &c. In the East Indies the Jesuit missionaries are also called *apostles*.

In some ages of the church, the pope was peculiarly denominated the *apostle*.

APOSTLE, is also used among the Jews, for a kind of officer anciently sent into the several parts and provinces in their jurisdiction, by way of visitor, or commissary; to see that the laws were duly observed, and to receive the monies collected for the reparation of the temple, and the tribute payable to the Romans.

The Theodosian code, lib. xiv. *De Judæis*, calls those *apostoli*, qui ad exigendum aurum atque argentum a patriarcha certo tempore diriguntur. Julian the Apostate remitted the Jews the *apostle*, *αποστολη*; that is, as he himself explains it, the tribute they had been accustomed to send him.

These apostles were a degree below the officers of the synagogues called *patriarchs*, and received their commissions from them. Some authors observe, that St. Paul had borne this office; and that it is this he alludes to in the beginning of the Epistle to the Galatians: as if he had said, Paul, no longer an apostle of the synagogue, nor sent thereby to maintain the law of Moses, but now an apostle and envoy of Jesus Christ, &c. St. Jerom, though he does not believe that St. Paul had been an apostle of this kind, yet imagines that he alludes to it in the passage just cited.

APOSTLE, in the Greek *Liturgy*, is particularly used for a book containing the Epistles of St. Paul, printed in the order wherein they are to be read in churches, through the course of the year. Another book of the like kind containing the Gospels, is called *Ευαγγελιον*, *Gospel*.

The apostle, of late days, has also contained the other canonical Epistles, the Acts of the *Apostles*, and the Revelations. Hence it is also called *Acts of the Apostles*, *Πραξι-αποστολος*; that being the first book in it.

APOSTLE is also thought by many to have been the original name for bishops, before the denomination *bishop* was appropriated to their order. Thus Theodoret says expressly, the same persons were anciently called promiscuously both bishops and presbyters, whilst those who are now called bishops were called *apostles*.

In the arsenal of Bremen, there are twelve pieces of canon, called the *Twelve Apostles*; on a supposition that the whole world must be convinced, and acquiesce in the preaching of such *apostles*.

APOSTLES' Creed. See CREED.

APOSTLES, in *Ecclesiastical History*. See APOSTOLICI.

APOSTOLA THADEIA, in *Geography*, a cape on the east coast of Siberia, at the west end of the Anadirskoi gulf in the North Pacific Ocean. N. lat. 63°. E. long. 178° 14'.

APOSTOLÆUM, or APOSTOLIUM, in *Ecclesiastical Writers*, denotes a church dedicated to, and called by the name of an *apostle*.

VOL. II.

Sozomen speaks of the apostolæum of St. Peter at Rome, and the apostolæum of St. Peter and St. Paul a Quercus near Chalcedon.

In this sense apostolæum stands distinguished from *prophetium*, *martyrium*, &c.

APOSTOLARE, APOSTOLICARE, *apostolizing*, in some *Middle Age Writers*, denotes the being preferred to the dignity of POPE.

APOSTOLATE, in a general sense, is used for mission. In this sense, Olearius has a discourse concerning the apostolate of Christ. Lip. 1681. 4to.

APOSTOLATE more properly denotes the dignity or office of an apostle of Christ: but it is also used in ancient writers for the office of a bishop.

In this sense, we meet with several letters, petitions, requests, &c. directed to bishops under the title of your *apostolate*, or *apostolatus vester*.

But as the title *apostolicus* had been appropriated to the pope, so that of *apostolate* became at length restrained to the sole dignity of the popedom.

Every bishop's see was anciently dignified with the title of *sedes apostolica*, an apostolical see, which is now the peculiar denomination of the see of Rome.

APOSTOLI, in *Law*, denotes those letters missive which are demanded in cases of appeal.

APOSTOLIC, APOSTOLICAL, something that relates to the apostles, or descends from them.

Thus we say, the *apostolical age*, *apostolical doctrine*, *apostolical character*, *constitutions*, *traditions*, &c.

APOSTOLIC, in the *Primitive Church*, was an appellation given to all such churches as were founded by the *apostles*; and even to the bishops of those churches, as being the reputed successors of the *apostles*.—These were confined to four, *viz.* Rome, Alexandria, Antioch, and Jerusalem.

In after-times, other churches assumed the same quality, on account, principally, of the conformity of their doctrine with that of the churches which were *apostolical* by foundation, and because all bishops held themselves successors of the apostles, or acted in their dioceses with the authority of apostles.

The first time the term *apostolical* is attributed to bishops, as such, is in the letter of Clovis to the council of Orleans, held in 511; though that king does not there expressly denominate them *apostolical*, but *apostolica sede dignissimi*, highly worthy of the *apostolical see*. In 581, Guntram calls the bishops, met at the council of Mafon, *apostolical pontiffs*, *apostolici pontifices*.

In progress of time, the bishop of Rome growing in power above the rest; and the three patriarchates of Alexandria, Antioch, and Jerusalem, falling into the hands of the Saracens, the title *apostolical* was restrained to the pope, and his church alone. Though some of the popes, and St. Gregory the great, not contented to hold the title by this tenure, began at length to insist that it belonged to them by another and peculiar right, as being the successors of St. Peter. The council of Rheims, in 1049, declared that the pope was the sole *apostolical* primate of the universal church.

And hence a great number of *apostolicals*; *apostolical see*, *apostolical nuncio*, *apostolical notary*, *apostolical brief*, *apostolical chamber*, *apostolical vicar*, &c.

APOSTOLIC clerks, see JESUITES.

APOSTOLICAL canons, and *constitutions*; see CANONS, and CONSTITUTIONS.

APOSTOLICAL traditions, see TRADITION.

APOSTOLICAL Fathers is an appellation usually given to the writers of the first century, who employed their pens in the cause of Christianity, and who had conversed with the apostles, or their disciples. To this class are referred, Cle-

ment, Barnabas, Hermas, Ignatius, and Polycarp. We may observe, in general, that these apostolic fathers, and the other writers in favour of Christianity, during the infancy of the church, were remarkable neither for their learning nor their eloquence. On the contrary, they express the most pious and admirable sentiments in the plainest style. This indeed is honourable rather than reproachful to the Christian cause; since we see, from the conversion of a great part of mankind to the gospel by the ministry of weak and unlearned men, that the progress of Christianity is not to be attributed to human means, but to a divine power. Their testimony to the books of the New Testament is important; for in their writings they take all the notice of them that could be expected. From them succeeding writers received great part of that full and satisfactory evidence, which they appear to have had concerning the several books of the New Testament. Of these writers, Cotelerius, and after him Le Clerc, have published a collection in two volumes, accompanied with both their own annotations, and the remarks of other learned men.

APOSTOLICI, APOSTOLI, or APOSTLES, in *Ecclesiastical History*, was a name assumed by three different sects, on account of their pretending to imitate the manner and practice of the apostles. The first *Apostolici*, otherwise called *Apotactita*, and *Apotactical*, rose out of the Encratitæ, and Cathari, in the third century. They made profession of abstaining from marriage, and the use of wine, flesh, money, &c. See ΑΡΟΤΑΚΤΙΤÆ.

Gerhard Sagarelli was the founder of the second sect; he obliged his followers to go about from place to place as the apostles did, to wander about clothed in white, with long beards, dishevelled hair, and bare heads, accompanied with women, whom they called their spiritual sisters. They likewise renounced all kinds of property and possessions, inveighed against the growing corruption of the church of Rome, predicted its overthrow, and the establishment of a purer church on its ruins. With this practice, they made little or no alteration in the doctrinal part of the public religion; but they principally aimed to introduce among Christians, the simplicity of the primitive times, and more especially the manner of life that was observed by the apostles. Sagarelli was burnt alive at Parma in the year 1300, and was afterwards succeeded by Dulcinus, a native of Novara, who added to the character of an apostle those of a prophet and general, and carried on a bloody and dreadful war for the space of more than two years against Raynerius, bishop of Vercelli; he was at length defeated, and put to death in a barbarous manner, in the year 1307; together with Margaret, whom he had chosen for his spiritual sister, according to the custom of the sect. Nevertheless this sect subsisted in France, Germany, and in other countries, till the beginning of the fifteenth century, when it was totally extirpated under the pontificate of Boniface IX.

The other branch of *Apostolici* were of the twelfth century. These also condemned marriage, preferring celibacy, and calling themselves the chaste brethren and sisters; though each was allowed a spiritual sister, with whom he lived in domestic relation; and on this account they have been charged with concubinage: they held it unlawful to take an oath; they set aside the use of baptism; and in many things imitated the Manichees. Bernard wrote against this sect of *Apostolici*.

APOSTOLICUM is a peculiar name given to a kind of song or hymn, anciently used in churches.

The Apostolicum is mentioned by Greg. Thaumaturgus as used in his time. Vossius understands it as spoken of the apostles' creed. Suicer thinks this impossible, because this creed was then unknown in the churches of the East.

APOSTOLIUS, MICHAEL, in *Biography*, a learned Greek, flourished in the fifteenth century, about the years 1450 and 1460; at the time when the empire of the Greeks founded by Constantine the Great was extinguished under Constantine Palæologus, the last Christian emperor. His distinguished learning appears from many small tracts written by him, and still remaining in manuscript in several libraries. When Constantinople, after a long siege, fell into the hands of the Turks, he wrote a funeral oration upon the emperor Constantine, who lost his life on that occasion. After the destruction of the eastern empire, he left Greece some time after the year 1453, and passed over into Italy; for he appears in 1462 to have lived at Viterbo. Dissatisfied with the neglect he experienced, and with the dependent condition to which he was reduced, he wrote against several persons of distinction amongst the learned men who flourished at that time; and having thus incurred the resentment of Bessarion, to whom he was indebted for support, he was compelled by his poverty to retire to the island of Crete, where he maintained himself, in a very mean manner, by transcribing books and instructing children. His aversion to the Roman church induced him likewise to compose a tract against it, "Concerning the procession of the Holy Ghost." His collection of proverbs, amounting to more than 2000 in Greek and Latin, illustrated with notes, was published in quarto by Pontinus at Leyden in 1619. His son Arsenius published at Rome a collection of Apophthegms, which was probably taken from the "Ιωνία" of Apostolius. Fabr. Bibl. Græc. l. v. c. 41. § 8. t. x. p. 222. Gen. Dict.

APOSTOLORUM UNGUENTUM, the *apostles' ointment*, in *Pharmacy*, is a kind of detergent or cleansing unguent, composed of twelve drugs, the number of the apostles; whence its name.

It was invented by Avicenna, and is otherwise called *unguentum veneris*. The principal ingredients are turpentine, resin, wax, gum ammoniac, birth-wort roots, olibanum, bdellium, myrrh, and galbanum, opoponax, verdegriis, litharge, oil of olives, and vinegar.

APOSTOOLIANS, in *Ecclesiastical History*, a sect of the Mennonites, which first sprung up in the year 1664, and derived its name from Apostool, one of the Mennonite ministers at Amsterdam. They concurred with them in doctrine, and admitted to their communion those only who professed to believe all their sentiments which are contained in their public confession of faith.

APOSTROPHE, or ADDRESS, in *Rhetoric*, a figure whereby the orator, in an extraordinary commotion, turns his discourse from the audience, and directs it to some other person, present or absent, living or dead, or to inanimate nature as endued with sense and reason. The word is formed of *απο*, *ab*, from, and *στρεφω*, *verto*, to turn. By this figure the speaker has an opportunity of using greater freedom than would perhaps be consistent with decency, if he addressed the persons themselves; he can admonish, chide, or censure, without giving offence; nor is there any passion that may not be advantageously expressed by this figure.

Thus Cicero, in his oration for Milo, addresses himself to the great patriots who had shed their blood for the public; and calls them to the defence of his client. So the same orator, in his first *Catilinarian*, directs himself to Jupiter the protector of the city and empire, and beseeches him to repel the parricide, &c.

The apostrophe is also frequently addressed to inanimates, as tombs, monuments, deuncts, &c. Cicero's apostrophe to Tubero, in his oration for Ligarius, is judged one of the finest passages in his works. In his oration for Balbus, he
thus

thus calls upon dumb nature to witness to Pompey's virtues: "I invoke you, remote regions, most distant countries, you seas, havens, islands, and shores! For what coast, what land, what place is there, in which the marks of his courage, humanity, wisdom, and prudence, are not extant?"

That apostrophe of Demosthenes, wherein he addresses himself to the Greeks slain at the battle of Marathon, is also famous: cardinal Perron says, it has procured the orator as much glory as if he had raised them from the dead.

An appeal to heaven, or any part of inanimate nature, has a sublimity and solemnity, which frequently occurs in the sacred writings, "Hear, O heavens!" says Isaiah, ch. i. 2. "and give ear, O earth! for the Lord hath spoken." In like manner, the prophet Jeremiah exclaims (ch. ii. 12), "Be astonished, O ye heavens! at this."

APOSTROPHE, or *Apostrophus*, in *Grammar*, also denotes a note or character placed over a letter in lieu of a vowel, to denote that the vowel is cut off, and not to be pronounced: as *ev'n* for *even*; *th'angelic host* for *the angelic*, &c.

The affectation of frequent *apostrophes*, so usual among some English writers, is a great abuse.

In prose, apostrophes are indefensible, and tend to vitiate the language; their use in poetry is to reduce a line to the proper measure.

APOSTROPHIA, in *Mythology*, a surname of Venus, under which her votaries applied to her to be preserved from irregular desires.

APOSYRMA, from *αποσυρω*, *I take off*, in *Surgery*, denotes a disquamation or scaling of the skin. In which sense the word amounts to much the same with ABRASION.

APOTACTITÆ, or APOTACTICI, formed from *αποτακτω*, or *αποτακτω*, to renounce, in *Ecclesiastical History*, an ancient sect, who, affecting to follow the evangelical counsels of poverty, and the examples of the apostles and primitive Christians, renounced all their effects and possessions.

It does not appear, that they gave into any errors during their first state: some ecclesiastical writers assure us, they had divers holy virgins and martyrs, under the persecution of Dioclesian, in the fourth century; but they afterwards fell into the opinions of the Encratitæ, and taught, that the renouncing of all riches was not only a matter of counsel and advice, but of precept and necessity. And hence the sixth law in the Theodosian code joins the *Apotactitæ* with the Eunomians and Arians.

APOTEICHISMUS, from *αποτειχιζω*, derived from *απο*, and *τειχιζω*, *I raise a wall*, or *τειχος*, in the *Ancient Military Art*, a kind of line or circumvallation drawn round a place, in order to besiege it.

This was also called *periteichismus*.

The first thing the ancients went about, when they designed to lay close siege to a place, was the apoteichismus; which sometimes consisted of a double wall, or rampart, raised of earth; the innermost to prevent sudden sallies from the town; the outermost to keep off foreign enemies from coming to the relief of the besieged. This answered to what we call lines of contravallation and circumvallation among the moderns.

APOTELESMA, from *αποτελειω*, *I perform*, in a general sense, denotes an effect of some cause. It is also used for a prognostic, or natural prediction of an event.

In which sense Scaliger speaks of the apotelesmata of Hippocrates. The answers of astrologers deduced from the consideration of the stars are particularly called apotelesms or apotelesmata; which were the expressions they used to denote the effects of the stars and planets on sublunary bodies; in which sense apotelesmata amount to the same with influences.

APOTELESMATICA, the science of *apotelesms*, or the art of foretelling future events, from the aspects and configuration of the heavenly bodies.

In this sense the word amounts to the same with what we otherwise call *judicial astrology*.

APOTHECARY, a person who professes the practice of pharmacy, or that part of physic, which consists in the preparation and composition of medicines.

The word is derived from *αποθηκη*, *shop*, the place where he makes up and exposes his medicines to sale.

The *apothecaries* in England are obliged to make up their medicines according to the formulas prescribed in the College Dispensatory.

Their shops are subject to the visitation of the censors of the College, who are empowered to destroy such medicines as they think not good.

The company of apothecaries was incorporated by charter from James I. procured at the solicitation of Dr. Mayerne and Dr. Atkins; till that time they only made a part of the grocers' company; plums, sugar, spice, Venicetreacle, mithridate, &c. were sold in the same shop, and by the same person. The reason of separating them was, that medicines might be better prepared, and in opposition to divers persons who imposed unwholesome remedies on the people. Observ. on Case of Will. Rose, sect. 2.

In the year 1712, the 10th of queen Anne, an act passed for reviving and continuing several acts therein mentioned, one whereof was for exempting the apothecaries from serving the offices of constable and scavengers, and other parish and ward offices, and from serving upon juries; which act was made perpetual in the ninth year of George I.

They have a hall in Black-Friars, where there are two fine laboratories, out of which all the surgeons' chests are supplied with medicines for the royal British navy.

To his majesty belong two *apothecaries*: the salary to the first, 320*l.* to the second, 275*l.* To the household belong also two.

The charitable dispensation of medicines by the Chinese is well deserving notice. They have a stone, which is ten cubits high, erected in the public squares of their cities; and on this stone are engraven the name of all sorts of medicines, with the price of each; and when the poor stand in need of any relief from physic, they go to the treasury, where they receive the price each medicine is rated at.

APOTHECARY, *apothecarius*, in *Writers of the Middle Age*, denotes a shop-keeper, or warehouse-keeper.

APOTHECARIUS is also used to denote a store-keeper, or officer appointed to have the direction of a magazine, GRANARY, &c.

In which sense *apothecarii* is sometimes rendered by *horrearii* and *rationarii*.

APOTHEOSIS, derived from *απο* and *θεος*, *God*, in *Antiquity*, a heathen ceremony, whereby their emperors and great men were placed among the gods.

After the apotheosis, which they also called *deification* and *consecration*, temples, altars, and images were erected to the new deity; sacrifices, &c. were offered, and colleges of priests instituted. Dio, 47. 56. 59. Suet. Aug. 5. Tib. 40. Patere. 1. Ovid. Pont. 4.

Images were erected to them, with the attributes of divinity (Lucan 7. Dio, 53. Capitolin. Antonin.); and to demolish them was deemed treason (Venul. lib. vi. D. ad Leg. Jul. Mal.); and even the senate decreed that oaths should be taken in their names (Dio, 44. 59, 60. Tac. Ann. 1.). Vide Kirchm. de Fun. Rom. 4. 14.

The Persians, according to Herodotus (l. i. c. 131. l. viii. c. 143.), never conceived that their gods were deified men; and Jablonski, in the prolegomena to his

"Pantheon Egyptianum," maintains that it was a fundamental principle in the mythology of the Egyptians, not to deify any mortal. The Greeks, it is said, were the first who admitted this practice; and the heroes of the first ages were of this description. Under the Cæsars, the Romans imitated the Greeks: at first they contented themselves with deifying Romulus, their founder; but having lost their liberty under Julius Cæsar, they allowed Augustus, his successor, to acknowledge him as a god, to build temples in honour of him, and to offer sacrifices to him. Augustus, at the age of twenty-eight years, was declared the tutelary god of all the cities of the empire. The example was followed by succeeding emperors: so that they elevated to the rank of gods, not only the most stupid, such as Claudius, but the most wicked and abandoned: and the appellation "Divus" was assumed among their ordinary titles.

It was one of the doctrines of Pythagoras, which he had borrowed from the Chaldees, that virtuous persons, after their death, were raised into the order of gods. And hence the ancients deified all the inventors of things useful to mankind; and those who had done any important service to the commonwealth. Tiberius proposed to the Roman senate the apotheosis of Jesus Christ, as is related by Eusebius, Tertullian, and Chrysostom. Juvenal, rallying the frequent apotheoses, introduces poor Atlas complaining that he was ready to sink under the burden of so many new gods as were every day added to the heavens. Seneca ridicules the apotheosis of Claudius with admirable humour. Herodian, lib. iv. in speaking of the apotheosis of Servius, gives us a very curious description of the ceremonies used in the apotheosis of the Roman emperors. After the body of the deceased emperor (said he) had been burnt, with the usual solemnities, they plac'd an image of wax, perfectly like him, but of a sickly aspect, on a large bed of ivory, covered with cloth of gold, in the vestibule of the palace. The greatest part of the day, the senate sat ranged on the left side of the bed, dressed in robes of mourning; the ladies of the first rank sitting on the right side, in plain white robes, without any ornaments. This lasted for seven days successively, during which the physicians came from time to time to visit the sick, always making their report that he grew worse, till at length they published that he was dead.

This done, the young senators and Roman knights took the bed of state upon their shoulders, carrying it through the Via Sacra, the Old Forum, where the magistrates were used to divest themselves of their offices. There they set it down between two kinds of amphitheatres, in the one whereof were the young men, and in the other the maidens, of the first families of Rome, singing hymns set to solemn airs, in praise of the deceased. The hymns ended, the bed was carried out of the city into the Campus Martius, in the middle of which place was erected a kind of square pavilion, the inside whereof was full of combustible matters, and the outside hung with cloth of gold, and adorned with figures of ivory, and various paintings.

Over this edifice were several others, like the first in form and decoration, but less; always diminishing and growing slenderer towards the top. On the second of these was placed the bed of state; and a great quantity of aromatic perfumes, and odoriferous fruits and herbs were thrown all around; after which the knights made a procession or cavalcade in solemn measures around the pile; several chariots also run round it, those who conducted them being clad in purple robes, and bearing the images of the greatest Roman emperors and generals.

This ceremony ended, the new emperor came to the *catafalca*, or pile, with a torch in his hand; and, at the same

time, fire was set to it on all sides; the spices and other combustibles kindling all at once.

While this was doing, they let fly from the top of the building an eagle, which, mounting into the air with a fire-brand, carried the soul of the dead emperor along with it into heaven, as the Romans believed; and thenceforward he was ranked among the gods. It is for this reason, that the medals, wherein apotheoses are represented, have usually an altar with fire upon it, or else an eagle taking its flight into the air, and sometimes two eagles.

There are several curious and celebrated monuments of antiquity under the denomination of apotheoses: the first and principal is the apotheosis of Homer, said to have been the work of Archelaus of Priena, a famous ancient sculptor, and discovered, in 1668, in the Appian way near Albano, in a place formerly call'd *Ad Bovillas*, but now *Frattochia*, belonging to the prince of Colonna, where the emperor Claudius had a house of pleasure. This is now one of the principal ornaments of the palace of those princes at Rome. To decypher the figures upon this monument, has been the labour of several celebrated antiquarians, such as Kircher, Cuper, Spanheim, Heinsius, Gronovius, Wetstein, Schott, and Winkelman. The apotheosis of Homer has also been represented on a silver vase, in the form of a mortar, and found at Herculaneum. The apotheosis of Romulus was published at Florence, in 1716, and by Montfaucon, in the third volume of the Supplement to his Antiquities. This work was executed at the time when the arts declined, and was intended to be presented in the Quirinal feasts, or in some other games celebrated by horse races in honour of Quirinus, and call'd Quirini Circenses. The apotheosis of Julius Cæsar is exhibited on a gem in the museum of Brandenburg. Cæsar is mounted on a celestial globe, and holding in his hand an helm and a large crown of laurel. The apotheosis of Augustus is represented on a beautiful agate, which the emperor Baldwin II., when in 1244, he sought succour of the Christian princes, and particularly of St. Louis, is said to have sold to the pious monarch, who deposited it in the museum of the holy chapel at Paris. See *AGATE*. The apotheosis of Germanicus is the subject of a precious gem; that of Claudius is a basso-relievo; that of Titus is exhibited in the arch of Titus at Rome; and that of the younger Faustina, represented in basso-relievo in the Capitol, is mentioned by Montfaucon in the fifth volume of his Supplement.

APOTHERAPIA, from ἀποθεραπειν, *I cure*, in *Physic*, properly denotes a complete or finished cure.

APOTHERAPIA is also used, in the *Gymnastic Art*. for the last part of all regular exercise, viz. friction or unction with oil, before as well as after bathing.

The design of this was partly to cleanse the skin from any filth or dull it might have contracted during the exercise, and partly to remove weariness.

APOTHERMUM, from ἄπο, and θερμός, *hot*, in *Ancient Writers*, a sharp kind of sauce, like that prepared of mustard, oil, and vinegar, or of vinegar alone.

APOTOME, in *Mathematics*, the difference of two incommensurable quantities: such is the difference between $\sqrt{2}$ and 1: and such is the excess of the diagonal of a square above its side.

The word is derived from ἀποτέμνω, *I cut off*.

Euclid (lib. x.) makes six sorts of *apotomes*.

APOTOME prima, is when the greater number is a rational number, and the difference of the squares of both numbers is a square number, e. g. $3 - \sqrt{5}$.

APOTOME secunda, is where the lesser number is a rational number, and the square root of the difference of the squares of both numbers has a ratio expressible in numbers to the greater

greater number; such is $\sqrt{18-4}$, since the difference of the squares 18 and 16 is 2, and $\sqrt{2}$ is to $\sqrt{18}$ as 1 to 3, because $\sqrt{18}=3\sqrt{2}$.

ΑΡΟΤΟΜΕ *tertia*, is when both the numbers which are subtracted from each other are irrational numbers, and the square root of the difference of their squares has a ratio in numbers to the greater. This holds in $\sqrt{24}-\sqrt{18}$, for the difference of their squares 24 and 18 is 6, and $\sqrt{6}$ is to $\sqrt{24}$ as 1 is to 2, for $\sqrt{24}=2\sqrt{6}$.

ΑΡΟΤΟΜΕ *quarta*, is when the greater number is a rational number, and the square root of the difference of the squares of both numbers has no ratio to it in numbers: such is $4-\sqrt{3}$, for the difference of the squares 16 and 3 is 13, but the square root of 13, *viz.* $\sqrt{13}$, has no numerical ratio to 4.

ΑΡΟΤΟΜΕ *quinta*, is when the lesser number is a rational number, and the square root of the difference of the squares of both numbers has no ratio in numbers to the greater number: such is $\sqrt{6}-2$, for the difference of the squares 6 and 4 is 2, and $\sqrt{2}$ has to $\sqrt{6}$ no ratio in numbers.

ΑΡΟΤΟΜΕ *sexta*, is where both numbers are irrational, and the square root of the difference of their squares has no ratio in numbers to the greater: such is the case in $\sqrt{6}-\sqrt{2}$, for the difference of the squares 6 and 2 is 4, and the root thereof 2 has to the $\sqrt{6}$ no ratio in numbers. Peter Ramus censures Euclid's doctrine of *apotomes*, and even all the rest delivered in the tenth book concerning irrational lines.

ΑΡΟΤΟΜΕ, in *Musick*, is the difference of the tone *major* and *LIMMA*, expressed by $\frac{3}{2}\frac{1}{2}\frac{2}{3}$.

The Greeks thought that the greater tone could not be divided into two equal parts; for which reason they called the first part *αποστομην*, and the other *λιμμα*; in this imitating Pythagoras and Plato.

The *apotome* is by some authors, as Boethius, called *hemitonium majus*; and the *limma*, *hemitonium minus*. He also calls the difference of these two, *comma*. The interval of two sounds expressed by $\frac{1}{2}\frac{2}{3}\frac{3}{4}$, was called by the ancients *apotome major*; and that expressed by $\frac{2}{3}\frac{3}{4}\frac{4}{5}$, *apotome minor*.

ΑΡΟΤΟΦΟΤΟ ΒΑΥ, or *Round bay*, in *Geography*, lies on the S. W. coast of Otahe, one of the Society islands, near the island of Otaheite, in the S. Pacific Ocean.

ΑΡΟΤΡΟΠΕΑ, from *αποτροπω*, *I avert*, in the *Ancient Poetry*, verses composed for averting the wrath of incensed deities: and the deities invoked for averting any threatened misfortune were called *Αποτροπαιους*: they were also called *Alexiaci*, from *αλεξω*, *I drive away*; and *Averrunci*, from *averrunco*, which denotes the same.

ΑΡΟΖΕΜ, derived from *αροζω*, *fervefacio*, *I make hot*, in *Medicine*, a form of remedy, otherwise called a *DECOCI-TION*; which see.

ΑΡΡΑ, in *Ancient Geography*, a town of Arabia Felix, according to Ptolemy.

ΑΡΡΑΚΚ, or ΑΡΡΑΓΓΗ, in *Geography*, a town of Africa, in the country of Aardrah, on the slave coast.

ΑΡΡΑΝΑΓΕ, or ΑΡΡΕΝΑΓΕ. See ΑΡΡΑΝΑΓΕ.

ΑΡΡΑΡΑΤΟΡ. See ΑΡΡΑΡΑΤΟΡ.

ΑΡΡΑΡΑΤΟΣ, from *apparō*, *I prepare*, properly signifies a formal preparation for some public and solemn action.

We say, the *apparatus* of a feast, coronation, &c. The prince made his entry with great apparatus and magnificence.

ΑΡΡΑΡΑΤΟΣ is also used for the utensils and appendages belonging to some more considerable machine; as the furniture or *apparatus* of an air-pump, microscope, &c.

The term *apparatus* is used in *Chemistry*, either generally, to express the whole of the instruments and vessels in which or by whose means any process is performed, or in a more limited sense, it is applied to those complicated instruments,

for the most part of modern invention, in which a number of separate parts are combined into one whole. Thus a retort, according to the former application of the term, is an article of chemical apparatus; a receiver is another article; and these two when combined form the retort and receiver, one of the simplest species of *distillatory apparatus*, according to the latter method of applying the term. Thus also the complicated arrangement of vessels invented by Woulfe, is called Woulfe's apparatus, that executed by Nouth is called Nouth's apparatus. It might seem at first sight that this was the proper place to introduce all that we shall have to say concerning chemical apparatus, but by so doing the article would be extended to an unusual length; we have therefore adopted the method of describing every general article under its proper name; of which the articles ΑΛΕΜΒΙΚ and ΑΛΥΔΕΛ, already printed, are examples; and the apparatus for particular experiments is described where the experiments themselves are mentioned; thus under the article ΑΛΚΟΗΟΛ will be found a description of the apparatus invented by Lavoisier for the combustion of that fluid. Certain kinds of apparatus have also a necessary connection with each other, either in similarity of form, or of the uses to which they are applied; there will be found therefore in the course of the work certain general articles, such as *DISTILLATORY apparatus*, *PNEUMATIC apparatus*, &c. where these topics will be discussed.

ΑΡΡΑΡΑΤΟΣ, in *Surgery*, consists of such outward applications as are usually termed *DRESSINGS*, together with such instrumental means as are requisite for the performance of any surgical operation; e. g. bandages, lint, pledgets, tents, compresses, ointments, and various machines. Previous to the performance of any chirurgical operation, a surgeon should always consider what sort of apparatus will be necessary; and he should never, for the sake of parade or ostentation, bring together any instruments which may as well be dispensed with. Modern surgery has very wisely laid aside a number of uncouth, clumsy, and terrific instruments employed by our ancestors, especially the tools named *cauterizing-irons* (see *CAUTERY*), and the immense levers, &c. for reducing dislocations or fractures. Whatever is indispensably necessary in operations, should be prepared before the time fixed for their performance; and it ought to be an invariable rule among surgeons, to prevent the patient from seeing his formidable apparatus, lest he be thereby intimidated and discouraged at the very moment he most stands in need of resolution: for instances are not wanting of patients actually dying from the effects of terror, without having undergone the intended operation.

The term *apparatus* is sometimes used to distinguish the operation of *LITHOTOMY* or *CYSTOTOMY*; thus we say, the greater apparatus, the lesser apparatus, &c. See *STONE*, *cutting for the*.

ΑΡΡΑΡΑΤΟΣ is also used as a title of several books composed in form of catalogues, bibliothecas, dictionaries, &c. for the ease and conveniency of study.

The apparatus to Cicero, is a kind of concordance or collection of Ciceronian phrases, &c. The *apparatus sacer* of Possevin, is a collection of all kinds of ecclesiastical authors, printed in 1611, in three volumes.—Glossaries, comments, &c. are also frequently called *apparatuses*.

ΑΡΡΑΡΑΤΟΣ, from *apparō*, *I appear*, that which is visible to the eye, or evident to the understanding.

ΑΡΡΑΡΑΤΟΣ, in *Mathematics* and *Astronomy*, is used to signify things as they appear to us in contradistinction from real or true; and in this respect the apparent state of things is often very different from their real state; as in the case of distance, magnitude, &c.

APPARENT *Altitude, Conjunction, Diameter, Distance, Figure, Horizon, Magnitude, Motion, Place, Time, &c.* See the several substantives.

APPARENT, *Heir, in Law.* See HEIR.

APPARENT *Island, in Geography,* lies in Dusky bay, on the coast of New Zealand, and is placed by captain Cook on an arm, which captain Vancouver found to be divided into two branches, leaving that island a peninsula joined to the main land by a very high though narrow ridge of mountains; the perpendicular height and very extraordinary shape of the rocky part fronting the arm, render it a most singular and majestic promontory. As the entrance of these arms was called by Cook "Nobody knows what;" Vancouver, having particularly examined them, called them "Somebody knows what." *Voyage round the World, vol. i. p. 63.*

APPARITION, in *Astronomy,* denotes a star's or other luminary's becoming visible, which before was hid.

In which sense the word stands opposed to OCCULTATION. Thus the heliacal rising is rather an apparition than a proper rising.

APPARITION, *circle of perpetual.* See CIRCLE of perpetual apparition.

APPARITION, in a general sense, is the appearance or semblance of a thing.

APPARITION is also used to denote a spectre, or præternatural appearance of some spirit, or the like.

We read of apparitions of angels, genii, dæmons, fairies, witches, departed souls, &c. apparitions of God, of Christ, the Virgin, saints, prophets, and of the devil himself.

Among the most zealous advocates of the reality of apparitions and witchcraft, we may reckon Dr. Henry More, Baxter, and Glanvil. The latter, in particular, has attempted, in a treatise entitled, "Saducismus triumphatus," to prove the doctrine of apparitions, by arguments deduced from the nature of the soul, the testimony of scripture, and the evidence of fact; and he expressly asserts (Part II, p. 2.) that those who deny and deride the existence of apparitions and witchcraft, are prepared for the denial of spirits, a life to come, and all the other principles of religion. It is a strong presumption against the reality of apparitions, however anciently and generally the belief of them has prevailed, that they have been connected with some causes and circumstances of terror, either real or apprehended; and these have previously disposed the imagination for being imposed upon and deluded. The darkness of the night, the gloom that has overspread particular situations, the horror produced by the record of some disastrous occurrence, such as murder or the like, and a state of mind naturally depressed and melancholy, and of course easily alarmed, have contributed to give rise to many of those stories, that have been credulously received and as obstinately vindicated and sedulously disseminated by the vulgar. The ancients also entertained some notions concerning the state of the soul on its escape from the body, which favoured this opinion; and they were disposed to seek the spirits of their deceased ancestors near the habitations in which their bodies were deposited. Hence they would be easily led into deception; and when they fancied that they actually saw their departed friends, they distinguished the illusions which were merely the creations of their own fancy, by the name of "shades." It ought also to be considered, that the relation and belief of apparitions have prevailed chiefly in times of ignorance, and amongst those who had the fewest opportunities for inquiry and information. In fact, as the night has been the season to which the appearance of ghosts has been referred, the belief of their reality has gradually subsided in proportion to the degree in which knowledge has been diffused. It ought also to be considered, that

apparitions are machines that on particular occasions have been of good service to generals, to ministers of state, to priests, and others; to say nothing of the very injudicious and culpable use that has been made of them by those with whom the care of children, at a period when their imagination is easily impressed, has been entrusted. Upon the whole, it must be allowed, that many of the apparitions that are recorded by writers, or reported by tradition, are mere delusions; others are fictions contrived merely to amuse or to answer some purpose; and others have originated in dreams or deliquiums. There are seasons of slumber when we are not sensible of being asleep. On this principle, Hobbes (Treatise of human nature, part i. c. 2. Works, p. 102.) has endeavoured to account for the spectre that is said to have appeared to Brutus. "We read," says he, "of Marcus Brutus (one that had his life given him by Julius Cæsar, and was also his favourite, and notwithstanding murdered him), how at Philippi, the night before he gave battle to Augustus Cæsar, he saw a fearful apparition, which is commonly related by historians as a vision; but considering the circumstances, one may easily judge to have been a short dream. For sitting in his tent pensive and troubled with the horror of his rash act, it was not hard for him, slumbering in the cold, to dream of that which most affrighted him; which fear, as by degrees it made him awake, so also it must needs make the apparition by degrees to vanish; and having no assurance that he slept, he could have no cause to think it a dream, or any thing but a vision." The well-known story told by Clarendon, of the apparition of the duke of Buckingham's father, has been solved in a similar manner. There was no man in the kingdom so much the subject of conversation as the duke; and his character was so corrupt that he was very likely to be misled by the enthusiasm of the times: Sir George Villiers is said to have appeared to him at midnight; and hence it appears probable that the man was asleep; and as he was terrified by the dream, it must have made a strong impression, and was likely to be repeated.

Mr. Andrew Baxter, in his "Essay on the phænomenon of dreaming," recurs to the principle "that our dreams are prompted by separate immaterial beings," in order to account for apparitions. If the power of such beings be unrestrained, this author maintains, that it will equally possess the fancy with delusive scenes, without waiting for the occasion of sleep to introduce them, and obtrude them forcibly upon the organ, amidst the action of external objects. For it requires but a greater degree of the same power to make delusory impressions upon the sensory, while real external objects are making true impressions upon it, than it would require to make the same impressions, while no other impression from external objects is made upon it at the same time. "If our imaginations," says Dr. Tillotson in one of his sermons, "were let loose upon us, we should be always under the most dreadful terrors, and frightened to distraction with the appearance of our own fancy; and an over-ruling power restrains these effects:" i. e. as Mr. Baxter conceives, by restraining the power of invisible beings, which would otherwise incessantly distress the soul with such displeasing sights. Upon this hypothesis he thinks there is nothing inconsistent in those relations of apparitions which we meet with in history, whether the facts be true or false; for these spirits may, upon some important occasions, be licensed to affect the sensory, according to the exigency of the case, that the whole scene of vision, which is then thought to have an existence from without, may be the effect of impressions made on the brain only. Thus, for instance, that apparition mentioned before which was presented to Brutus before he came

over from Asia, and again the night before the battle of Philippi, the noise as of one entering into his tent which he heard, and the words spoken, "I am, O Brutus, thy evil genius, but thou shalt see me again near Philippi," might all be only inward representations upon the sensory, and any other person present might neither have heard nor seen any thing. This, in our author's opinion, affords a better account of the appearance than that of Hobbes; who makes cold produce dreams and visions of fear, without either reason or experience to support his assertion. He makes Brutus to be sleeping; but Plutarch tells us, that he had slept the former part of the night immediately after eating, and had risen to digest something in his own mind; so that, according to Hobbes's scheme, it was a waking vision, and it occurred without any previous distemper either external or internal. The case of Dion, related by Plutarch, is alleged to the same purpose; for he was sitting in the porch of his own house in a thoughtful and meditating attitude, when the spectre appeared to him; and this happened while the assassins were contriving his death, a little before he was cruelly murdered. No men in antiquity could be less liable to the suspicion of weakness and credulity than Brutus and Dion; and therefore, according to Mr. Baxter, the terror they experienced must have proceeded from the power of some superior being. Upon the whole he thinks that although *δεισιδαιμονια*, or a fear of spirits, hath been much abused by vain or weak people, and carried to an extreme, perhaps by designing and crafty men, the most rigorous philosophy will not justify its being entirely rejected. It is true, he adds, no evil can happen to us in God's world but by our own fault; but that subordinate beings are never permitted, or commissioned to be the ministers of his will, is a hard point to be proved; and that direct atheism is better than this deisidemonia is horrid. See Essay on the phenomenon of dreaming, in the "Inquiry into the nature of the human soul," vol. ii. p. 111, &c.

The abbé de St. Pierre has a discourse expressly on the physical method of solving or accounting for apparitions; he makes them the effect of feverish dreams, disturbed imaginations, &c.

APPARITOR, or APPARATOR, a beadle in an university, who carries the mace before the masters, and the faculties.

APPARITOR is also used in some ancient English laws, for a judge or justice.

APPARITOR *comitatus*. There was formerly an officer called by this name, for which the sheriffs of Buckinghamshire had a considerable yearly allowance; and in the reign of queen Elizabeth there was an order of court for making that allowance. But the custom and reason of it are now altered.

APPARITORS also denote messengers who served the process of the spiritual court. Their duty is to cite the offenders to appear, to arrest them, and to execute the sentence or decree of the judges. See stat. 21 Hen. viii. c. 5.

Among the Romans, apparitors were the same with sergeants or tipstaves among us; or rather apparitor was a general term, and comprised under it all the ministers and attendants of the judges and magistrates, appointed to receive and execute their orders. And hence, they say, the name was derived, viz. from *apparere*, to be present, to be in waiting. Under the name *apparitores* were comprehended the *scribae*, *accensi*, *interpretes*, *praecones*, *viatores*, *lictores*, *statores*, and even the *carnifices* or hangmen.

They were usually chosen out of the freedmen of the magistrates, and their condition was held in so much contempt, that, as a mark of ignominy, the senate appointed a city that had revolted from them to furnish them with apparitors.

There were also a kind of *apparitors of cohorts*, called *cohortales* or *conditionales*, as being attached to a cohort, and doomed to that condition. The apparitors of the praetors, *praetoriani*, were those who attended the praetors, or governors of provinces; and who, on their masters' birth-day, were always changed, and preferred to better posts. Add, that the pontifices had also their apparitors, as appears from an inscription of an ancient marble in the *Via Appia*:

APPARATORI
PONTIFICVM
PARMVLRARIO.

APPAUMEE, in *Heraldry*. See *APAUMEE*.

APPEAL, derived from the French verb neuter *appeller*, of the same signification, in *Law*, signifies the removal of a cause from an inferior court or judge to a superior; or the having recourse to a superior judge to rectify what is amiss in a sentence passed by an inferior.

Appeals to Rome were first introduced into England in the reign of king Stephen; and though they were not strictly regarded in the succeeding reigns, they continued till the time of king Henry the eighth, when they were finally abolished by the 24 Hen. 8. c. 12. and 25 Hen. 8. c. 19. 21.: by which appealing to Rome from any of the king's courts, suing to Rome for any licence or dispensation, and obeying any process from thence, are made liable to the pains of *premunire*.

Appeals lie from the archdeacon or his official to the court of arches, and from the arches to the archbishop, and from the bishop or his commissary to the archbishop; and when the cause concerns the king, appeal may be brought in fifteen days from any of the said courts to the prelates in convocation, st. 24 Hen. 8. c. 12.: and by the 25th Hen. 8. c. 29. for lack of justice in the archbishop's courts, the party may appeal to the king in chancery, where commissioners are named, and by reason of this appointment they are called *delegates*; and after the decision of this court, a commission of review may be granted by the king as supreme head, to review the definitive sentence given in appeal in the court of delegates.

Appeals lie from all the ordinary courts of justice, and also from the court of equity in chancery, to the house of lords, who judge *en dernier ressort*; i. e. no appeal lies from them.

But appeals from a court of equity, and writs of error from a court of law, differ in these two particulars: 1. The former may be brought upon any interlocutory matter; the latter upon nothing but only a definitive judgment. 2. On writs of error the house of lords pronounces the judgment; on appeals it gives direction to the court below to rectify its own decree.

There are appeals from ecclesiastical justice to secular.

The first instance of this is that of Paulus Samosatenus; who being condemned and deposed by the second council of Antioch, refused to surrender the episcopal house to Domnus, who had been elected his successor, and appealed to the emperor.

APPEAL is also used, in *Common Law*, in the same sense with *accusatio* among the *Civilians*. And when thus spoken of as a criminal prosecution, it is derived from the French verb active *appeller*, to call upon, summon, or challenge one, and denotes an accusation by a private subject against another, for some heinous crime; demanding punishment on account of the particular injury suffered, rather than for the offence against the public. This method of prosecution is still in force, but very little in use. This private process, for the punishment of public crimes, had probably

probably its original in those times, when a private pecuniary satisfaction, called a *weregild*, was constantly paid to the party injured, or his relations, to expiate enormous offences. This was a custom derived to us, in common with other northern nations, from our ancestors the ancient Germans: and we find in our Saxon laws, particularly those of king Athelstan, the several *weregilds* for homicide, established in progressive order, from the death of the corl or peasant, up to that of the king himself. And in the laws of king Henry I. we have an account of the other offences that were redeemable by *weregild*, as well as of those that were not so redeemable. As therefore, during the continuance of this custom, a process was certainly given for recovering the *weregild* by the party to whom it was due; it seems that, when these offences by degrees grew no longer redeemable, the private process was still continued, in order to insure the infliction of punishment upon the offender; though the party injured was allowed no pecuniary compensation for the offence. It was also anciently permitted, that any subject might appeal another subject of high-treason, either in the courts of common law, or in parliament; or for treasons committed beyond the seas, in the court of the high-constable and marshal. The cognizance of appeals in the latter still continues in force; and so late as 1631, there was a trial by battle awarded in the court of chivalry, in such an appeal of treason; but that in the first was virtually abolished by the statutes 5 Edw. 3. c. 9. and 25 Edw. 3. c. 4.; and in the second expressly by statute 1 Hen. 4. c. 14. So that the only appeals now in force, for things done within the realm, are those of felony and mayhem. Mr. Kyd, the ingenious editor of Comyns's Digest, observes, "that the appeal of treason does not appear to have been taken away by the stat. 1 Hen. 4. c. 14. or any other. But as no instance occurs of any such appeal, before any court of common law, either since that statute was made, or for many years before, the law relating to such appeals seems to be wholly obsolete at this day."

Criminal appeals are either capital or not capital. Of the latter sort, appeals *de pace, de plagis, de imprisonmento*, and of *mayhem*, are now become obsolete; having been long since converted into actions of trespass. Capital appeals are either of treason or felony. The latter may be subdivided into *appeals of death*, or of *murder*, *appeals of larceny or robbery*, *appeals of rape*, and *appeals of arson*, which last are now entirely obsolete. An *appeal of felony* may be brought for crimes committed either against the parties themselves, or their relations. The crimes against the parties themselves are *larceny, rape, and arson*. And for these, as well as for mayhem, the persons robbed, ravished, maimed, or whose houses are burnt, may institute this private process. The only crime against one's relations, says judge Blackstone, for which an appeal can be brought, is that of killing him; either by murder or manslaughter: but Mr. Tomlins, in his edition of Jacob's Law Dictionary, observes, that this seems to be an unguarded assertion of the learned commentator, as an appeal is given to the husband, next of kin, &c. by stat. in case of rape.

Appeal of death, is a vindictive action which the law gives to the wife for the death of her husband, or to the heir male for the death of his ancestor; which heirship was confined, by an ordinance of king Henry I. to the four nearest degrees of blood. It is given to the wife on account of the loss of her husband; therefore if she marries again, before or pending her appeal, it is lost and gone: or if she marries after judgment, she shall not demand execution. The heir must also be heir male, and such a one as was the next heir by the course of the common law at the time of the

killing of the ancestor. But this rule has three exceptions: 1. If the person killed leaves an innocent wife, the only, and not the heir, shall have the appeal. 2. If there be no wife, and the heir be accused of the murder, the person, who next to him would have been heir male, shall bring the appeal. 3. If the wife kills her husband, the heir may appeal her of the death. And by the statute of Gloucester, 6 Edw. 1. c. 9. all appeals of death must be sued within a year and a day after the completion of the felony by the death of the party, which seems to be only declaratory of the old common law. The court must set forth the fact, and the length and the depth of the wound, the year, day, hour, place where done, and with what weapons; and that the party died in a year and a day; and by the above statute, principal and accessories before and after are to be joined in appeal; and this is to be observed, though the accessory is guilty in another country. 3 Hen. 7. c. 1. The case of other appeals than of murder, as of robbery, rape, &c. are not within this last statute, and therefore *auterfois acquit*, upon an indictment within the year, stands at common law, a good bar to an appeal of robbery, or any offence besides murder or manslaughter; and yet the judges at this day never forbear to proceed upon an indictment of robbery, rape, or other offence, though within the year, because appeals of robbery especially are very rare, and of little use, since the statute of 21 Hen. 8. c. 11. gives restitution to the prosecutor as effectually as upon an appeal.

The several appeals above enumerated may be brought previous to any indictment: and if the appellee be acquitted thereon, he cannot be afterwards indicted for the same offence. But if the appellant does not prosecute his appeal, the appellee may be indicted. If a man be acquitted on an indictment for murder, or found guilty and pardoned by the king, still he ought not (in strictness) to go at large, but be imprisoned, or let to bail till the year and day be past, by virtue of the statute 3 Hen. 7. c. 1. in order to be forthcoming to answer any appeal for the same felony, not having as yet been punished for it; though if he has been found guilty of manslaughter, on an indictment, and hath had the benefit of clergy, and suffered the judgment of the law, he cannot afterwards be appealed, for it is a maxim in law, "that *nemo bis punitur pro eodem delicto*." If the appellee be acquitted, the appellant (by virtue of the statute of Westminster 2. 13 Edw. 1. c. 12.) shall suffer one year's imprisonment, and pay a fine to the king, besides restitution of damages to the party for the imprisonment and infamy which he has sustained: and if the appellee be incapable of making restitution, his abettors shall do it for him, and also be liable to imprisonment. This provision proved a great discouragement to appeals, so that thenceforward they ceased to be in common use. If the appellee be found guilty, he shall suffer the same judgment as if he had been convicted by indictment; but with this remarkable difference, that, on an indictment, the king may pardon and remit the execution; but on an appeal, which is at the suit of a private subject, to make an atonement for the private wrong, the king can no more pardon it, than he can remit the damages recovered on an action of battery. And the ancient usage was, so late as Henry the fourth's time, that all the relations of the slain should drag the appellee to the place of execution. However, the punishment of the offender may be remitted and discharged by the concurrence of all parties interested; and as the king of his pardon may frustrate an indictment, so the appellant by his release may discharge an appeal. A peer in appeal of murder, shall not be tried by his peers, but by a common jury; though he shall upon an indictment for murder. Where appeal of death is brought, the defendant cannot

cannot justify *se defendendo*; but must plead not guilty, and the jury are to find the special matter.

An appeal is prosecuted two ways, either by *writ*, or by *bill*.

APPEAL by *writ* is, when a writ is purchased out of chancery, by one for another, to the intent that he may appeal a third person of some felony committed by him, finding pledges that he shall do it.

APPEAL by *bill*, is where a man of himself gives up his accusation in writing, offering to undergo the burden of appealing the person therein named. The appeal of death may be brought by bill before the justices in the King's Bench; before justices of gaol-delivery, and commissioners of oyer and terminer, &c. or before the sheriff and coroner in the county-court; but the sheriff and coroner have only power to take and enter the appeal and count, for it must be removed by certiorari into B. R.

In appeal by original, principals and accessaries are generally charged alike without distinction, till the plaintiff counts; but it is otherwise in appeals by bill. There is but one appeal against the principal and accessory: if the principal is acquitted, it shall acquit the accessory: and both shall have damages against the appellant on a false appeal, or the accessory may bring a writ of conspiracy. If the defendant in appeal is attaint or acquit, or the plaintiff nonsuit after appearance, which is peremptory, no other appeal lies. If an indictment and an appeal be depending at the same time, against the same person, the appeal shall be tried first, if the appellant be ready; otherwise the king would destroy the suit of the party.

APPEAL of *Mayhem* is the accusation of one that hath maimed another; but this being generally no felony, it is in a manner merely an action of trespass, and nothing is recovered by it but damages. Bracton calls this *appellum de plagis & maibemio*, and has a whole chapter upon it. In this appeal, the defendant pleads that the plaintiff had brought an action of trespass against him for the same wounding, and had recovered, and damages given, &c.; and this was a good plea in bar of the appeal, because in both actions damages only are to be recovered. In king John's time, there is recorded an appeal against a Jew, *qui fecit ementulari quendam nepotem suum*.

APPEAL of *rape* lies where a rape is committed on the body of a woman. A feme covert without her husband may bring appeal of rape; and statute 6 R. 2. c. 6. gives power where a woman is ravished, and afterwards consents to it, for a husband, or a father, or next of kin, there being no husband, to bring this appeal: also the criminal in such case may be attainted at the suit of the king. If a woman be ravished by her next of kin, and consents to him, and has neither husband nor father, the next of kin to him shall have the appeal; for he has disabled himself by the rape, whereby he becomes a felon. If there be no husband nor father, the appeal is given to the heir, whether male or female. The statute of Westm. 1. c. 13. which reduced the crime of rape to a trespass, enacts that appeal of rape shall be brought within forty days; but by statute Westm. 2. c. 34. which makes this offence felony, no time is limited for the prosecution, so that it may be brought in any reasonable time. It is to be commenced in the county where the rape was committed. It is held, that though formerly the defendant might have his clergy, it is taken away by the statute 18 Eliz. c. 17. See further on this subject, 2 Hawk. P. C. c. 23. §. 58—73.

APPEAL of *robbery* or *larceny* is a remedy given by the common law, whereby a person robbed of his goods may obtain restitution of them. If a man robbed make fresh pursuit after, and apprehend and prosecute the felon, he may

bring appeal of robbery at any time afterwards. By statute 21 Hen. 8. c. 11. restitution of stolen goods may be had on indictments after attainder, as on appeals; and appeals of robbery, as well as of mayhem and rape, are now much out of use. By the express provision of statute 4 & 5 W. & M. c. 3. an accomplice convicting two others guilty of robbery, shall have the king's pardon; and this shall be a good bar to an appeal of robbery. Blackst. Com. vol. iv. Jacob's Law Dictionary by Tomlius, tit. *Appeal*.

APPEARANCE, the exterior surface of a thing; or that which first strikes the sense, or the imagination.

The Academics maintain, that the sensible qualities of bodies are only *appearances*; and the like doctrine is held by some later philologists.

Our errors arise chiefly from a too hasty and precipitate assent of the will, which acquiesces too easily in the appearance of truth.

APPEARANCE, in *Law*, is the defendant's engaging to answer a cause or action entered against him in some court of judicature; and it is done by filing common or special bail, when he is served with copy of, or arrested on any process out of the courts at Westminster, and there can be no appearance in the court of B. R. or king's bench, but by special or common bail. There are four ways for defendants to appear to actions; viz. in person, or by attorney, by persons of full age; and by guardians or next friend, by infants. It is now the common course for the plaintiff or defendant, in all kinds of actions where there may be an attorney, to appear by attorney, and put in his warrant without any writ from the king for that purpose, as was formerly the case by common law. And, therefore, generally, in all actions real, personal, and mixt, the demandant or plaintiff, tenant or defendant, may appear by attorney. But in all cases where the party stands in contempt, the court will not admit him to appear by attorney, but oblige him to appear in person. In all cases where process issues forth to take the party's body, if a common appearance only, and not special bail is required, there every such party may appear in court in his proper person, and file common bail. In a capital criminal case, the party must always appear in person, and cannot plead by attorney; also in criminal offences, where an act of parliament requires that the party should appear in person; and likewise in appeal or on attachment. On an indictment, information or action, for any crime whatsoever under the degree of capital, the defendant may, by the favour of the court, appear by attorney; and this he may do as well before plea pleaded, as in the proceeding after, till conviction. Attornies subscribing warrants to appear, are liable to attachment, upon non-appearance: and where an attorney promises to appear for his client, the court will compel him to appear and put in common bail in such time as is usual by the course of the court; and that although the attorney say he hath no warrant for appearance: nor shall repealing a warrant of attorney to delay proceedings excuse the attorney for his not appearing, who may be compelled by the court. The defendant's attorney is to file his warrant the same term he appears, and the plaintiff the term he declares, under penalties by stat. 4 & 5 Ann. c. 16. An attorney is not compellable to appear for any one, unless he take his fee or back the warrant; after which the court will compel him to appear.

In actions by original, appearances must be entered with the filazer of the county; and if by bill, they shall be entered with the prothonotary; and by statute 5 Geo. 2. c. 27. where defendant is served with a copy of the process, appearances and common bail are to be entered and filed by him within eight days after the return of the process; and if defendant

defendant does not appear, plaintiff may, on affidavit of the service of process, enter a common appearance for defendant, and proceed upon it; statute 12 Geo. 1. c. 29. And by stat. 25 Geo. 3. c. 83. § 22. a common appearance may be filed by plaintiff, without entering or filing a record, a memorandum or minute for defendant. Jacob's Law Dict. by Tomlins.

APPEARANCE *Day of Term.* See TERM.

APPEARANCE, in *Perspective*, is the representation or projection of a figure, body, or like object, upon the perspective plane.

The appearance of an objective right line is always a right line. See PERSPECTIVE. The appearance of an opaque body and a luminary being given, to find the appearance of the shadow, see SHADOW.

APPEARANCE of a *star or planet.* See APPARITION.

APPEARANCES, in *Astronomy*, &c. are more usually called *phenomena and phases.*

In *Optics*, we use the term *direct appearance* for the view or sight of any object by direct rays, without either refraction or reflection.

APPEARANCES, *to save*, is to discharge one's duty seemingly, or acquit one's self of the formalities and externals thereof; so as to save the character, and avoid giving scandal or offence.

APPEARANCES, in *Physiology.* See PHASMATA.

APPEASING REMEDIES, in *Medicine*, are those which allay the pain in a disease, and give the patient some rest or respite; and at the same time contribute to the cure. These amount to the same with what we otherwise call PAREGORICS, ANODYNES, &c.

APPELDOORN, in *Geography*, a town of the united Netherlands, in the duchy of Gueldres, $4\frac{1}{2}$ leagues N. W. of Zutphen.

APPELLANT, in *Law*, denotes a person who brings an APPEAL.

APPELLANTS, in *Ecclesiastical History*, is a denomination distinguishing those among the French clergy who refused to subscribe the constitution or bull *unigenitus*, issued by Clement XI. in 1713, and appealed from it, either to the pope better informed, or a general council.

APPELLATION signifies the name by which any thing is known or distinguished. See NAME.

APPELLATIVE, formed of *appellare, to name a thing*, in *Grammar*, denotes a common name which stands for a whole rank of beings, whether general or special, in contradistinction to proper names, which belong only to individuals, e. g. fish, man, horse, tree, &c. are appellatives; and so are trout, eel, lobster; for the, all agree to many individuals, and some to many species: but Peter, Gabriel, Bucephalus, are proper names. See NAME.

APPELLEE, in *Common Law*, signifies the person against whom an appeal is brought. See APPEAL, and IMPROVEMENT.

In the civil law, *appellee, appellatus*, properly belongs only to the judge before whom an appeal is brought.

APPENAGE. See APANAGE.

APPENDANT, from *appendo, I hang by*, in *Law*, is understood of such things as by prescription have belonged, appertained, and been joined, to some other principal thing.

Thus an hospital may be appendant to a manor; a common of fishing, to a freehold; a seat in a church, to a house; or the like. As appendants are ever by prescription, they are thus distinguished from appurtenances, which may be created in some cases at this day. See APPURTENANCE.

APPENDANT, *Advowson.* See ADVOWSON.

APPENDANT, *Common.* See COMMON.

APPENDICULA, or APPENDIX *vermiformis*, in *Ana-*

tomy, an appendage to the intestinum cæcum, or caput coli. See the description of the INTESTINES.

APPENDICULÆ *Asteriarum, wires of asterie*, a name given by the writers on *Natural History* to certain small branches which are placed in a circular order at different distances upon the column of the asterie.

APPENDICULATUS, *Appendage*, in *Botany*, a term mostly used to express an additional small leaf.

APPENDIX, or APPENDAGE, in *Anatomy*, is a part in some measure distinct yet connected to another. Thus, the Fallopian trumpets, ovaries, &c. are called the Appendices Uteri.

APPENDIX is more particularly used in the same sense with EPIPHYSIS.

APPENDIX, or APPENDAGE, a thing necessary to, or dependant on another.

The term is chiefly used in matters of literature, for an additional discourse, placed at the end of any piece, or writing, to explain or prosecute something there left deficient, or to draw conclusions from it. In which sense the word coincides with SUPPLEMENT.

APPENSA, from *ad, and pendere, I hang to*, or APPENDED remedies, such as are outwardly applied, by hanging about the neck.

Such are divers amulets, necklaces, phylacteries, &c.

APPENZELL, in *Geography*, a town of Switzerland, and principal place of a canton to which it gives name. N. lat. $47^{\circ} 17'$. E. long. $9^{\circ} 20'$. It is supposed to have derived its name from the Latin, "Abbatis cella," and to have been originally only a religious house belonging to the abbey of St. Gal.

APPENZELL, the thirteenth canton of Switzerland, surrounded by the Rhinthal and the lands belonging to the abbey of St. Gal, is about ten leagues from east to west, and from six to seven broad. The whole country is hilly and mountainous. It is divided into twelve communities; six of which are Protestants, and six Roman Catholics. The country formerly belonged to the abbé of St. Gal; but the inhabitants, wearied with exactions and oppressions, asserted their liberty against the troops of the abbot and the Austrians sent to succour them, and sealed it with their blood. In the year 1513, it was admitted into the Helvetic league, and constituted the thirteenth canton. The population is estimated at 51,000, 13,000 being catholics, and 38,000 protestants; which is a large number in a country of not more than sixty square leagues, and composed for the most part of glaciers, inaccessible rocks and precipices. It yields, however, good pasturage; and, in some parts of it, the manufactures have of late been much encouraged. This canton is popularly divided into Innerooden, or the interior part; and Aufferooden, which comprehends the tracts situate near the borders. In the former part, pasturage is the principal employment; and whatever respects the feeding the cattle, the management of dairies, and the making of cheese, is carried to a high degree of perfection among these mountaineers. The rich and poor are cow-keepers; but the poor, having little or no grass land, employ agents through the canton to inform them where hay may be obtained; and the *fenn*, or cow-keeper, bargains for it, and drives his cattle, when they return from grass, to the places where the hay is to be had. The person who sells his hay, furnishes the *fenn* not only with stabling for his beasts, but boards and lodges him and his whole family. In return, the *fenn*, besides paying the stipulated price for the hay, allows to his host as much milk, whey, and zieggee (a kind of lean cheese), as may be used in the house, and leaves him also the manure of his cows. In the middle of April,

when nature revives, the fenn again issues forth with his herd to the meadows and fertile Alps, which he rents for the summer: so that the life of these people is a constant migration, and they enjoy with it health, content, and cheerfulness. The original breed of cattle in this canton is of a black and brown cast; but the fenns, preferring a motley herd, compose it of black, brown, and some bay cows: to produce which set a black cow with a white belly and a stripe of the same colour along the back is required. The animals are curried, dressed, and tended with the utmost care; and thus they have an appearance of sleekness, cleanliness, and health, superior perhaps to that of any other cattle in the world. The mountaineer, it is said, lives with his cows in a constant exchange of reciprocal acts of gratitude; the latter affording him almost whatever he wants; and the fenn, in return, providing for and cherishing them, sometimes more than his own children. The fine cattle, which are the pride of the cow-keeper who inhabits the Alps, are adorned with large bells suspended from broad thongs; and every fenn has an harmonious set of at least two or three bells. The whole peal, including the thongs, will sometimes be worth between 140 and 150 guilders; while the whole apparel of the fenn himself, when best attired, does not amount to the price of 20 guilders. These ornaments, however, are only worn on particular occasions; as in the spring, when the cows are driven up the Alps, or removed from one pasture to another; or when, in winter, they travel to the different farms, where the owner has contracted for the hay. The fenn, arrayed in his best garb, leads the procession, singing the *ranz des vaches*, consisting of simple tones mostly formed within the throat, and without articulate sounds or words; three or four fine goats follow, then comes the handsomest cow with the great bells, and then two others with smaller bells; these are succeeded by the rest of the cattle; and in the rear is the bull, with a one-legged milking-stool hanging on his horns; and the procession is closed by a sledge in which are the implements of the dairy. The cows themselves, as well as the keeper, seem to be pleased with their ornaments; and if the leading cow is deprived of her honours, she manifests her grief by lowing incessantly, abstaining from food, and becoming lean; and she pursues her rival, who has obtained the badge of superiority, with vengeance, butting, wounding, and persecuting her in the most furious manner. The cows, when dispersed on the Alps, are brought together by the voice of the fenn, who allures them to him by singing the *ranz des vaches*. Of the urine of the cattle, the farmers of Appenzell make salt-petre by a very simple process. Under their stables, which are built on sloping ground, so that one side of the edifice rests on the hill and the other is elevated by means of two strong polls which support it two or three feet above ground, are pits filled with sandy soil. The animal water continually oozes through the planks of the floor; and, having drenched the soil contained in the pit for two or three years, the pit is emptied, and the salt-petre is collected and refined in the usual manner.

Among the various modes of industry in Innerooden, that of feeding snails is one of the most singular. In the garden grounds along the river Sitter, such numbers of snails are kept during the summer season, that the sound caused by the motion of their denticulated jaws, while they are eating, is distinctly heard at several paces from the spot. Young snails are collected in the adjacent parts, placed in these gardens, and supplied (till, on the approach of winter, they inclose themselves, with leaves of lettuce, colewort, cabbage, and other vegetables, by which they grow and fatten to a surprising degree. Some time before Lent, the

owners pack up the closed snails in casks, and carry them for sale to the convents of Suabia, Bavaria, and Austria, and even as far as Vienna, where they are purchased as delicacies. By this traffic some have acquired a handsome fortune.

The food of the inhabitants is exceedingly simple, consisting chiefly of milk, cheese, whey, oatmeal, and potatoes. Bread is not in common use, except among the rich. Their dress is equally plain: and as there is less disparity of fortunes among them than in almost every other part of Europe, a great uniformity prevails in diet, dress, and manners; and this constitutes the main support of their civil and political equality. Some travellers, who have observed crowds of beggars in this canton, have been led to draw erroneous inferences concerning the prosperity of the people; but the fact is, that hordes of beggars, attracted by the charitable disposition of the Appenzellers, flock thither from Suabia, and other neighbouring provinces of Germany. The mountaineers of Appenzell are undisturbed and content, free from the oppression of arbitrary power and the exactions of taxes, and solely occupied with their cows and the Alps on which they graze. The government of this republic confines itself to merely granting protection, and providing for the security of persons as well as of property. The people have no desire of knowledge; and are so ignorant, that the majority of the inhabitants of Innerooden cannot read and write; and of course they have no schools, or such as are in the most deplorable state. This ignorance is necessarily attended with gross and wretched superstition. Parents, whose children are taken ill, seldom seek medical assistance, but have masses read for the purpose of obtaining from heaven their speedy dissolution. On the loss of a still-born child they are inconsolable, under an apprehension that for want of baptism it is gone to hell; but, on the death of other children, tears are scarcely ever shed; on the contrary, the parents are joyful, and their friends say to them by way of congratulation, "now you have an angel in heaven." The punishment inflicted on incontinence is not very severe; the transgressing parties only paying a fine of five guilders each, provided that both be unmarried; but if any female commits the same fault three times, she is sentenced to be publicly whipped. Yet popular opinion requires, that he who violates a virgin shall make her his lawful wife; and if they are not joined in marriage, both of them, especially the ravisher, are branded with indelible shame. The girl, in such a case, is prohibited from wearing the badge of virginity, which is a metal pin stuck into the braided hair, and is obliged to cover her head with a black or brown hood. The male offender is virtually divested of those privileges which belong in common to all citizens; an humiliation than which there is none more grievous in democratical states; for the man so stigmatized is civilly dead in his own country, having lost what is most dear to him, the advantages of a freeman. The preceding remarks pertain chiefly to Innerooden, the inhabitants of which are Roman Catholics: but in Aufferooden, and the outer parts of the canton of Appenzell, the reformed religion has been established since the middle of the sixteenth century. From that period, the manufacture of linen, muslin, and cotton-cloth has constituted the chief branch of industry among the reformed Appenzellers. The manufacturers of Appenzell have now attained to such a degree of skill, as to be able to spin out of half an ounce of flax, a thread measuring from 9 to 10,000 feet in length; whence their cambrics are in great demand on the continent. The Appenzellers, apprized of the improvements of the manufactories in Ireland and Scotland, and dreading to lose their trade, have lately begun to introduce machines for spinning and carding

wool, invented by an inhabitant of Rehetobel. Pasturage, in this district, has of course decreased; the large pasture grounds being divided into small meadows, each sufficient only for two or three cows. The people of Appenzell are industrious and persevering, in common with other Swiss; but their distinguishing feature is quickness of apprehension. They accordingly manifest particular ingenuity in inventing, imitating, and improving machines, as well as other branches of mechanics, without any assistance from instruction or books. Besides some exceedingly skilful weavers, several among them have acquired reputation by the manufacture of watches, clocks, and fire-engines. The wooden bridges of Ulrick Grubenmann, a native of the village of Teufen, are very generally known on the continent. This ingenious mechanic, it is said, offered to build an arched wooden bridge across the river of Derry in Ireland, which is 600 feet wide; but his plan was rejected.

See Schilderung dn Gebirgsvolker des Schweiz, &c. or A Description of the Tribes which inhabit the mountainous parts of Switzerland, by John Gottfried, M. D. vol. i. containing the canton of Appenzell; Svo. Leipzig, 1798.

APPERCEPTION, or ADPERCEPTION, is used by Leibnitz and his followers, for an attribute of the mind, considered as conscious of, or reflecting on its own perceptions: in which sense the word amounts to the same with what Des Cartes and others call CONSCIOUSNESS.

APPERWACK, or CAPPERWACK RIVER, in *Geography*, lies about E. S. E. from the island and city of Cayenne, on the coast of Guiana, in South America. An island extends across the entrance, which is surrounded by a sand bank, and off the river is a cluster of rocks called the Constables.

APPETITE, APPETITUS, APPETENCY, formed of *ad*, *to*, and *peto*, *I crave*, in *Physiology*, a desire of enjoying something that is apprehended to be necessary or conducive to happiness. When this inclination towards any object considered as good, is guided by reason, and results from reflection on the real value of the object, it is called *rational*; but when it proceeds from the mere impulse of the senses, without any distinct apprehension of the value of the object, it is denominated *sensitive*.

Appetite is restrained, by Hutcheson, to such of our desires as have a previous painful and uneasy situation, antecedently to any opinion of good in the object; nay so as that the object is often chiefly esteemed good only for its allaying this pain or uneasiness, or if it give also a positive pleasure, yet the uneasy sensation is previous to, and independent of this opinion of good in it. By another ingenious writer (see *Elem. Crit.* vol. i. p. 44.), appetites are represented as passions directed to general objects, in contradistinction to passions directed to particular objects, which retain their proper name. Thus we say an *appetite* for fame, for glory, for conquest, for riches; but we say the *passion* of love, of gratitude, of envy, &c. Appetite may be also distinguished from passion, since the latter has no existence till a proper object be presented: whereas the former exists first, and then is directed to an object.

Some have erroneously ascribed the appetites solely to the corporeal system or animal part of man; but this mode of representing them must appear to be a mistake on a close investigation; since, however the generality of moral writers may be inclined to regard the grosser appetites as having their seat in the body, and thence term them sensual and carnal, they never reproach the more refined species of corporeal enjoyments with these degrading epithets; nor do they accute a man of being sensually disposed, if he loves music, or receives delight from the contemplation of the beauties of nature. Dr. Reid (*Essays on the active Powers*

of Man, *Ess.* iii. p. 122, &c.), limits the term *appetite* to a particular class of desires, which belong to the animal principles of action, and which are distinguished by the following properties. Every appetite is accompanied with an uneasy sensation proper to it, which is strong or weak in proportion to the desire we have of the object. Moreover, appetites are not constant, but periodical, being satiated by their objects for a time, and returning after certain periods. He adds, those that are chiefly observable in man, as well as in most other animals, are hunger, thirst, and lust. The ends for which our natural appetites are given, are too evident to escape the observation of any man of the least reflection: two of those above enumerated are intended for the preservation of the individual, and the third for the continuance of the species. To act merely from appetite is neither good nor ill in a moral view: it is neither an object of praise nor of blame; and the person who yields to its impulse, when there is no reason to the contrary, acts agreeably to his nature. Appetites, considered in themselves, are neither social principles nor selfish. They cannot be called social, because they imply no concern for the good of others; nor can they justly be called selfish, though they be commonly referred to that class. To this purpose, Dr. Reid observes, that appetite draws us to a certain object without regard to its being good for us, or ill; nay, in some cases, self-love is sacrificed to appetite. But it may be replied, that the impulse of appetite supposes the previous apprehension of good; though this apprehension, and the appetite that results from it, may be misguided and perverted. Besides the appetites which nature hath given to us for useful and necessary purposes, we may create appetites which nature never gave. As it is therefore best to preserve our appetites in that tone and degree of strength which nature gives them, so we ought to beware of acquiring appetites which nature never gave; these are always useless, and often very hurtful. It should also be considered, that although there be neither virtue nor vice in acting from natural appetite, yet there may be much of either in the management of our appetites; and the power of self-government is necessary for their restraint and regulation.

APPETITE, in *Medicine*, is more particularly used to denote a natural periodical call or desire to eat and drink, occasioned by a certain uneasy and painful sensation, and with a view of repairing what had been wasted by the several excretions of the body. A loss or prostration of appetite is called ANOREXIA. The defect of appetite is of two kinds, and is usually divided, by medical writers, under two names, the *anorexia* and *nausea*.

The anorexia is a too great abstinence from food, which sometimes has its origin from depravation of the stomach, sometimes from other causes more remote.

The nausea is defined to be a plenary abstinence from foods, being a complaint of the same nature and origin with the anorexia, but differing in degree.

The signs are very obvious so far as a distaste to food, which is common to both; but there is this difference, that in an anorexia the patients usually eat something, though without appetite, and are troubled always with a pain and uneasiness of the stomach after it; but in the nausea there is a greater distrelsh of food of all kinds, and frequent straining to vomit. Men of idle lives, and such as drink too freely of strong liquors, are subject to *idiopathic* defects of appetite, from actual injuries in the stomach; others labouring under the different diseases before mentioned, are as often subject to the *symptomatic*. People of a languine habit, when afflicted with a loss of appetite, always find great relief in acids of the milder kind; and those of a leucophlegmatic

leucophlegmatic habit are often cured by taking small doses of *elixir proprietatis* every day before dinner. Some persons are very fond of external applications to the stomach in those cases, but these are rarely to be found of any great service. The best of them is a plaster of *tacamahaca*, with oil of mastic.

A prepossessing propensity of things not proper for food is called *PICA*; and an immoderate appetite is called *BULIMIA*, or *fames canina*. Some, however, distinguish between the *βουλιμία*, and *canine appetite*; making it the distinguishing character of the latter, that it is attended with a henty or other cæliacal flux.

APPETITE excessive. See *OREXIS*.

Dr. Cullen, in his arrangement of diseases, makes two distinct sections of erroneous and deficient appetites under the order of *dysforesia*: to the former he refers *bulimia*, *polydipsia*, *pica*, *satyriasis*, *nymphomania* or *furor uterinus*, and *nostalgia*; to the latter, *anorexia*, *adipsia*, and *anaphrodisia*.

APPIA, or *ΑΡΡΙΑ*, in *Ancient Geography*, a town of Asia, in Phrygia.

APPIADES, in *Mythology*, five divinities so called because their temples were at Rome near the fountains of Appius, viz. Venus, Pallas, Vesta, Concord, and Peace.

APPIAN, in *Biography*, a Greek historian, was a native of Alexandria, and lived under the reigns of Trajan, Adrian, and Antoninus Pius, in the former part of the second century. In the time of Trajan, he settled at Rome, and gained such reputation as an advocate, that he was chosen one of the procurators of the emperor, and had the government of a province assigned to him. In the preface to his history, he informs us, that he wrote about the 50th year of Rome, and therefore this preface must have been written about the year of Christ 147, or 148. His Roman History was comprised in 24 books, and compiled, not in the chronological order of Dionysius Halicarnassensis and of Polybius, nor in the biographical method of Plutarch, nor in a continued series like that of Livy, but in the order of the countries in which the events that are related by him happened, as Italy, Gaul, Sicily, Spain, Africa, Greece, Syria, Parthia, Egypt, and Arabia. He is charged with many errors by Bodin, Sidonius, and Scaliger; though the former allows, that he is the only historian, who gives a just and clear account of the Roman provinces, cities, and armies, and a lively description of the Roman empire. La Mothe le Vayer thinks that the principal ground of complaint against him, is his undue partiality to the Romans, so that he represents the right as well as the advantage to be always on their side, to the prejudice of all other nations, and even of his own country. He is also charged with having borrowed many passages from Polybius, Plutarch, and other authors, without acknowledgment; inasmuch that Scaliger reproachfully calls him "alienorum laborum fucum," a drone who robs the industrious bees of their labour. Photius, however, is of opinion, that he wrote with the utmost regard to truth, and that he has shewn a more accurate and extensive acquaintance with military affairs than any of the historians: while we read him, he says, we cannot but imagine that we see the battles which he describes. But his chief talent, according to this author, is displayed in his orations, in which he moves the passions as he thinks proper, either in animating the resolution of the soldiers, or repressing the impetuosity of those who were too precipitate. His style is plain and simple, without any thing turgid or superfluous. In his preface he has given a general description of the Roman empire. Of the nine first books of his "History," some fragments remain, which are preserved in Ursinus's "Excerpta de legationibus," published in Greek, at Antwerp, with notes, in 1582, 4to.; and some

of them are extant in the "Excerptæ Peirescianaæ," published by Valefius, with a Latin version and notes, at Paris, in 1634, 4to.; of the fourth book on the war with the Gauls, only an epitome remains; the sixth and seventh books, on the affairs of Spain, and the war with Hannibal, were first published, in 8vo. by H. Stephens, at Paris, in 1557; the eighth, on the affairs of Libya; the eleventh and twelfth, on those of Syria and Parthia; five books on the Civil Wars; and fragments of the twenty-third, on the affairs of Illyria; are extant. A Latin version of several parts of Appian, by Petrus Candidus, was printed at Rome, in 1472, and at Venice, in 1477 and 1492, in folio. An edition of Appian was published, in Greek, by Charles Stephens, with various readings, at Paris, in 1551, in folio; another, in Greek and Latin, was published by Henry Stephens, at Geneva, in 1592, in folio; an improved edition, by Tollius, was published at Amsterdam, in 1670, in two volumes, 8vo. Appian, Hist. Præf. Fabr. Bibl. Græc. l. iv. c. 12. § 1—4. t. iii. p. 391—396. Gen. Dict.

APPIAN Aquæduct, was so called from Appius Claudius, who was censor of Rome in the 442d year of that city. This aquæduct began seven miles from Rome, and after having run a great way under ground, discharged part of its waters between the gates Capena and Trigemina, and conveyed the rest quite to the Campus Martius; and thus the whole city was plentifully supplied. It was dug under ground, and laid very deep, says Frontinus (*De Aquæductibus*), either because the art of levelling was not then brought to perfection, or because the Roman territory was too much exposed to the incursion of its enemies, who might have destroyed the stately arches, and intercepted the water. This water was for many ages called "Aqua Appia." The principal fountain under this denomination, was placed in the forum of Cæsar, below the temple of Venus Appiades; and by a verse of Ovid it appears to have formed a jet of water:

"Appias expressis aera pulsat aquis."

APPIAN Way, a great Roman highway, constructed by Appius Claudius, censor of Rome, in the 442d year of that city. It commenced at the gate Capena, now called St. Sebastian's, and passing over the mountain called St. Angeli, crosses the plain of Valdranus, the *Palus Pompina*, and ends at Capua, which was the limit of the Roman empire.

The Appian way, called by Statius (*Sylv. i. 12.*), "the queen of roads," extended about 140 miles, and was wide enough for two chariots to go abreast without inconvenience. The stones which Appius employed in this work, were brought from a great distance, and were as hard as flints. They were previously squared and smoothed by skilful workmen, and then joined together without any cement; so that they appeared for several miles like a single stone. In the beginning of Augustus's reign, this road reached to Brundisium, that is, 238 miles farther; but it is not certain, who was the manager of this additional work. It is generally ascribed to Cæsar. Dr. Burnet, in his Letters, says, that in many places, it is still as entire as when it was first made. On each side of it was a deep ditch for receiving off and conveying away the water.

Caius Gracchus placed the small columns called *termini*, which marked the miles.

The new *Appian way* was constructed by Caracalla, from his baths to the gate Capena, where it joined the other.

APPIANI, GIUSEPPE, in *Biography*, an exquisite Italian singer, with a contralto voice, born at Milan, and always mentioned with rapture by some of our friends who heard him at Rome when he was very young; they likewise spoke of him as an excellent actor. He was in the service

service of the empress queen, when he died at Ceussa, near Bologna, in 1742, at only 23 years of age, extremely regretted. He had studied under Porpora, with the celebrated Salimbene. His style was naturally pathetic and touching, and his *adagio*, consequently, extremely admired.

APPIANO, in *Geography*, a town of Italy in the duchy of Milan, 25 miles N. N. W. from Milan.

APPIARIA, in *Ancient Geography*, a town of Europe, in Lower Masia, on the right bank of the Danube, there called Ister. It was situated between Durostorus on the east, and Nicopolis ad Istrum on the west.

APPIDEMISCHKAN, in *Geography*, a town of Prussia, nine miles south-east from Gumbinnen.

APPII FORUM, in *Ancient Geography*, *Borgo Longo*, a small town of Italy, in Latium, in the country of the Volsci. It was situated upon the Appian way, between Sueffa Pomestia to the north-west, and Terracina at some distance to the south-east. It is mentioned in the *Acts*, ch. xxviii. 15. and by Horace in his account of his journey to Brundisium :

“ —inde forum Appii
Differtum nautis, cauponibus atque malignis.”
“ To Forum Appii thence we steer, a place
Stuff'd with rank boatmen, and with vintners base.”

FRANCIS.

On the ruins of this ancient little town is situated an abbey called Fossa Nuova.

APPLANA, in *Entomology*, a small species of PHALÆNA, of the *Tortrix* family, that inhabits Kiel and other parts of Europe. The wings are depressed, brown, with three white dots in the centre. Gmelin. Obs. This is the Fabrician character in the species *Insectorum*, where it is arranged in the section *Pyralis*, t. 2. 288.; and it is also *Phalæna punctata* of Clerk. Icon.

APPLAUSE, properly signifies an approbation of something, witnessed by clapping of hands; and in this respect it differs from acclamation, which was articulate, and performed with the voice. The word comes from the verb *plaudere*, to clap the hands.

The ancient way of applauding by clapping of hands is scarcely retained any where but in theatres. Among the Romans there were three different species of applause denominated from the different noises made in them, viz. *tomus*, *imbrices*, and *testæ*; the first a confused din, made either by the hands or the mouth; the second and third by beating on a sort of sounding vessels placed in the theatres for this purpose.

Persons were instructed to give applause with skill; and there were even masters who professed to teach the art. The proficient in this way let themselves out for hire to the vain-glorious among the poets, actors, &c. and were properly disposed to support a loud applause. These they called *laudicoeni*.

At the end of the play, a loud peal of applause was expected, and even asked of the audience, either by the chorus or the person who spoke last. The formula was, *spectatores plaudite*, or *valete & plaudite*.

The *plausores*, or applauders, were divided into *chori*, and disposed in theatres opposite to each other, like the choristers in cathedrals; so that there was a kind of concert of applauses.

Seneca (*Nat. Quæst.* ii. 28.) has described the different modes of applauding with the hands: “*Aversæ inter se manus collisæ non plaudunt, sed palma cum palmâ collata, plausum facit. Et plurimum interest utrum cavæ concutiantur, an planæ et extentæ.*” The people stood up to applaud in the theatres: thus Propertius (iii. 16.);

“*Stantiaque in plausum tota theatra juvent.*”

Of the awkward applauses of the uninstructed rustics, who did not understand the art of applauding, and who disturbed the general harmony by their discordant sounds, Tacitus speaks; (*Annal.* xvi. 5.) “*cum manibus nefcis fatulentis, turbarent ignaros.*”

APPLE-TREE, *Malus*, in *Botany*, a general name applied to a cultivated orchard-tree, which produces the fruit known by the name of apple. In the system of Linnæus, it is considered as a species of the genus *pyrus*, of which there are three: the *wild-apple* or *crab*, which has a very four fruit; the *Virginian wild crab*, which produces a sweet-scented flower; and the *dwarf-apple*, frequently known by the name of *Paradise-apple*. See PYRUS MALUS.

Trees of this sort are produced in an artificial manner, by means of ingrafting the scions or shoots of such apple-trees as are valuable for their fruit, on stocks that have been raised from the seeds of crabs. Thus a scion of an apple-tree, inserted into a crab stock, occasions the crab-tree from that time to produce *apples* of nearly the same kind and quality with those from which the scion was taken. Mr. Ray, indeed, thinks, that the fruit of these trees always follows the nature of the scions.

In the nurseries, three sorts of stocks are commonly used to graft apples upon: first, *free stocks*, which are raised indifferently from the kernels of all sorts of apples, and which by some are also termed *crab-stocks*, as all those trees which are produced from the seeds before they are grafted, are termed *crabs*, without any distinction. Such stocks should, however, be preferred, as are raised from the kernels of crabs, where they can be procured. Several old writers are of this opinion. Austen, who wrote more than an hundred years ago, says the stock which he accounts best for *apple-grafts* is the *crab*, which is better than *sweeter apples* to graft on, because it is usually free from canker, and will become a large tree, and, he conceives, last longer than stocks of *sweeter apples*, and make fruits more strong and hardy to endure frosts. It is well known, however, that by frequent grafting some sorts of apples upon free stocks, the fruits have been rendered larger, but less firm, and of shorter duration.

The second sort of stock is the *Dutch creeper*; these stocks are designed to stint the growth of trees, and keep them within compass for dwarfs or espaliers. The third sort is the *Paradise apple*, which is a very low shrub, consequently only proper for trees which are kept in pots by way of curiosity, as they do not continue long. See INGRAFTING OF FRUIT TREES.

Trees of the apple kind are found in general to thrive well when planted on strong deep loamy soils, or such clayey ones as, by having a portion of gravel in their composition, are rendered not retentive of moisture. Mr. Knight, in his treatise on the Culture of the Apple and Pear, remarks, that a preference has been given to soils of opposite kinds, by planters of different ages. Those of the last century uniformly contended, he says, in favour of a light sandy loam, and on that their finest cyder fruits were grown; but at present a soil of a diametrically opposite quality, a strong red clay, is generally preferred. Much of the soil which is called clay, in the district where he resides, is, however, he observes, properly argillaceous marle; and some of it contains a large portion of calcareous earth, and effervesces strongly with acids. He has found this soil to form the substratum of some orchards much celebrated for producing fruit of the first quality. It appears, he thinks, to have the effect of mitigating the harshness of rough austere fruits; and that as the trees grow with great luxuriance in it, it is perhaps, of all soils, the best calculated to answer the wishes of the planter; but that the strongest and most highly flavoured

flavoured liquor, which has hitherto been obtained from the apple, is produced by a soil which differs from any of those that have been mentioned—the shallow loam on a limestone basis, such as is met with in the forest of Dean.

It is added, that in regard to situation, the apple-tree succeeds best in those which are neither high nor remarkably low. In the former, its blossoms are frequently liable to be injured by cold winds, and in the latter by spring-frosts, particularly when the trees are planted in the lowest part of a confined valley. A south or south-east aspect is generally preferred, on account of the turbulence of the west, and the coldness of north winds; but orchards succeed well in all: and where the violence of the west wind is broken by an intervening rise of ground, a south-west aspect will, he thinks, be found equal to any. Apple-trees are generally the most productive of fruit when they are situated near the fold-yard, and the ground, in consequence, much trod and manured by the cattle in the winter season. The soil in which old apple-trees have grown, is, however, esteemed very unfavourable to young ones.

When from contiguity to the house, an orchard is planted in this kind of ground, the pear and apple should be made to succeed each other, as has been judiciously recommended by the author of the Rural Economy of Gloucestershire. The land intended to be planted with apple-trees should be well prepared the year before, by thoroughly digging or ploughing; and if dung, in the form of compost with mould, be laid on, it will be of great utility. In choosing the trees, such as are but of two years growth from the graft, are, in general, to be preferred, and they should have strong straight stems. When the trees are planted, they should also be staked, to prevent their being shaken by the wind. For the manner of planting apple-trees, &c. see ORCHARD.

In directing the choice of fruit-trees, for particular situations, great attention should be paid to select such as are proper for the peculiar views of the planter, and sufficiently early to ripen well in them. The apple-tree being naturally very full of branches, frequently requires the operation of pruning; and when properly executed, great advantages will be found to arise from it. Mr. Knight thinks, in this business, the pruner should confine himself almost entirely to the extremities of the bearing branch, which are always too full of wood, and leave the internal part of the trees nearly as he finds it. Large branches should rarely or never be amputated.

In the garden culture of the apple, where the trees are retained as *dwarfs* or *espaliers*, the more vigorously growing kinds are often rendered unproductive by the excessive, though necessary, use of the pruning knife. The above writer has always succeeded, he says, in making trees of this kind fruitful, by digging them up, and replacing them with some fresh earth in the same situation. The too great luxuriance of growth is, he thinks, thus checked, and a disposition to bear in consequence brought on. See PRUNING OF FRUIT-TREES.

Apple-trees sometimes begin bearing at the age of two or three years; but when they are six or seven, they are for the most part found to produce the most abundantly.

The blossoms of apple-trees are liable to be injured or destroyed by various causes; as severe cold, a hazy state of the atmosphere, frosts, and insects of various kinds. And Mr. Knight has remarked, that they also fail frequently from want of impregnation, when the weather is unusually hot and dry, or when cold winds prevail, as he has often observed the *farina* to wither and die on the *anthera* in such seasons. In these cases, those trees have been found to

escape the best, that were moderately full of wood, and consequently capable of affording the blossoms the most protection.

APPLE, a well-known orchard fruit, cultivated for the purposes of the table as well as for the liquor which is prepared from its juice. The varieties of this valuable fruit are extremely numerous. Mr. Forsyth, in his treatise on the Culture and Management of Fruit-trees, mentions eight different sorts, as having been introduced from France; among which the *French rennet*, the *rennet grise*, and the *violet apple*, are most esteemed in this country; and about thirty-six sorts of our own growth, which may be considered as valuable. But the varieties of this fruit will be treated of more fully under the article *PYRUS MALUS*.

In respect to the method of preserving apples for use during the winter season, it has been recommended to let them remain upon the trees until perfectly ripe, and then to gather them by the hand in dry weather, laying them in heaps for a few weeks, in order that they may undergo a slight degree of sweating. They should then be carefully looked over, and all such as are in any way soft or decayed, be removed, the sound fruit being wiped dry, and packed in any kind of large jars that have been previously made clean and dry; the mouths or openings being closely secured, in order to exclude the air as much as possible from them. In this way apples are said to keep sound a great length of time, the flesh or pulp remaining perfectly firm and plump, which is not the case when they are constantly exposed to the action of the open air. But they may be kept perfectly well without this trouble, by being closely packed in large hampers, baskets, or bins, and placed in close dry situations.

The sort of apples that are in general held in most esteem for the table are the following, which stand in the order of their ripening: the *white juncating*, the *margaret apple*, the *summer pearmain*, the *summer greening*, the *embroidered apple*, the *golden rennet*, the *summer white calville*, the *summer red calville*, the *silver pippin*, the *aromatic pippin*, the *la reinette grise*, the *la haute bonte*, the *royal ruffet*, the *wheeler's ruffet*, the *sharp's ruffet*, the *spine apple*, the *golden pippin*, the *nonpareil*, and *l'api* or *pomme d'api*.

But for kitchen use; the *codling*, the *summer marygold*, the *summer red pearmain*, the *Holland pippin*, the *Kentish pippin*, the *courpendu*, the *Loan's pearmain*, the *French rennet*, the *French pippin*, the *royal ruffet*, the *monstrous rennet*, the *winter pearmain*, the *pomone violette*, the *Spencer's pippin*, the *stone pippin*, and the *oaken pippin*.

And for the purposes of cyder; the *stire apple*, the *bagloe crab*, the *golden pippin*, the *old red streak*, and the *woodcock*, were the favourite old cyder fruits; but most of them are now, according to Mr. Marshall, on the decline. The *muß* and the *cocagee* are, however, still in high estimation, especially the latter. Mr. Crocker, in his tract on the Art of making Cyder, observes, that in the districts of Hereford and Worcester, the following are considered as the best liquor fruits: the *Bennet apple*, *Captain Nurse's kernel*, *Elton's yellow*, *Normandy apple*, and the *yellow or forest flyre*. And that in the county of Somerset; the *Fersey*, the *white sour*, the *margill*, *vallis apple*, *barn's-door*, *crab red-streak*, *Du-ann*, *Jack Every*, *cocagee*, *Clark's primo*, *Buckland*, *Pit crab*, *Slater's pearmain*, *Slater's No. 19*, *Slater's No. 20*, *Slater's No. 21*, *Castle pippin*, *saw-pit*, and the *pomme apis*, are supposed most valuable. But that in Devonshire, the most esteemed fruits are; the *Seaverton red-streak*, the *sweet broady*, the *lemon bitter sweet*, *jossey*, *Orcheton pippin*, *wine-apple*, *marygold spice-apple*, *Ludbrook red-streak*, *green Cornish*, the *butter-box*, *red Cornish*, *broad nosed pippin*,
eat's

cal's head, brandy apple, Pine's red-streak, winter red, sweet pomme roi, and the Bickley red streak.

The best and most proper sorts of apples to be cultivated in a small garden are, according to Mr. Forsyth, the *jenet-ting, golden pippin, nonfach, Ribstone pippin, nonpareil, Queen's apple, skyhouse, golden rennet, aromatic pippin, grey ladington, scarlet pearmain, lemon pippin, pomme gee, and the French crab, with ruffetings and colings* for the purpose of baking.

It has been ingeniously suggested by Mr. Knight, in his treatise on the Apple and Pear, that the juice of these fruits might be used with great advantage in long voyages. He has frequently, he says, reduced it by boiling, to the consistence of a weak jelly; and that in this state it has remained several years without the slightest apparent change, though it has been intentionally exposed to much variation of temperature. A large quantity of the inspissated juice would, he further observes, occupy but a very small space; and the addition of a few pounds of it to a hoghead of water would probably, at any time, form a liquor a good deal similar to cyder or perry: it might also, he thinks, be used to supply the place of *rob of lemons* and *oranges*, and might be obtained at a much lower price.

It has been observed by Dr. Grew, in his Anatomy of Vegetables, that the apple is formed of four distinct parts, consisting of the *cuticle or pill*, the *parenchyma*, the *branchery*, and the *core*; that the *pill* or *skin* is only a dilatation of the outermost skin or rind of the bark of the branch on which it grew; and that the *parenchyma* or *pulp*, though tender and delicious to the taste, is only a dilatation of the *albumum*, or inner part of the bark of the same part. This is evident, he thinks, not only from the visible continuation of the bark, from the one through the pedicle or stalk to the other; but also from the structure common to both. And that the branchery, or vessels, are only ramifications of the woody part of the branch dispersed through all the parts of the *parenchyma*, the greater branches being made to communicate with each other by the medium of the smaller ones; and the *core* proceeds originally, he supposes, from the pith of the branch, the sap of which finding room enough in the *parenchyma*, to diffuse itself, quits the pith, which, in consequence, hardens into core.

APPLE is also a name given to divers fruits, bearing some resemblance in figure, rotundity, and the like, to the orchard apple.

APPLE, *Adam's*. See CITRUS, and *Pomum ADAMI*.

APPLE, *Alligator*. See ANNONA.

APPLE, *bitter*, a name sometimes given to the fruit of the COLOCYNTHIS. See CUCUMIS.

APPLE, *blad*. See CACTUS.

APPLE, *custard*. See ANNONA.

APPLE, *dwarf*. See DWARF-TREES.

APPLE-FLY, in *Natural History*, the name given by authors to a small green fly found sometimes within an apple, and hatched of a worm or maggot, very frequently found infesting that fruit.

APPLE, *love*. See SOLANUM.

APPLE, *mad*. See SOLANUM.

APPLE, *male balsam*. See MOMORDICA.

APPLE, *marcbafite*, so called by Dr. Grew on account of its figure, as being round, except on one side, where it falls in, and has a stalk like a young apple. Mus. Reg. Soc. P. iii. § 2. cap. 3.

Among the ancient ornaments of churches we read of *golden apples, poma aurea*; by which it should seem, we are to understand the globular parts of candlesticks. Du-Cange.

Some ancient customs also speak of apples of wax, *poma de cera*.

APPLE, *May*. See PODOPHYLLUM.

APPLES, *eak*, are a kind of excrecences or exudations of the nutritious juice of that tree, joined with some degree of putrefaction.

The like are sometimes also found on willows.

APPLE of the eye. See PUPIL.

APPLE, *pine*. See BRONELIA.

APPLE, *prickle*, is remarkable for the several tufts or bunches of thorns with which it is armed all round; each bunch consisting of six or eight thorns, some erect, others couched a little, and crooked outwards, of several lengths, from one inch to above two.

APPLE, *purple*. See ANNONA.

APPLE, *sap*. See SAPINDUS.

APPLE, *sour*. See ANNONA.

APPLE, *star*. See CHRYSOPHYLLUM.

APPLE, *sugar and sweet*. See ANNONA.

APPLE, *thorn*. See DATURA.

APPLE, *water*. See ANNONA.

APPLE, *Island*, in *Geography*, a small uninhabited island of north America, in the river St. Lawrence, in Canada, on the south side of the river, between Basque and Green Islands. It is surrounded by rocks, and the navigation is dangerous.

APPLEBY, a corporate and borough town, the county-town of Westmoreland, where the assizes are held, and which sends two members to parliament, is situated on the banks of the river Eden. It was formerly a considerable town, and had many privileges; but it has long ago sunk into decay, and now consists only of mean houses in one broad street, which has an easy ascent from north to south, and at the end of it the castle, almost surrounded by the river. It has two churches, a town-hall, a county gaol, a free grammar school; and an hospital for a governess and twelve widows, founded, in 1651, by a daughter of lord Clifford. It is governed by a mayor, twelve aldermen, a common council, two sergeants at mace, &c. It is distant about 32 miles from Carlisle, and 270 from London. Its market is on Saturday, and it is the best corn-market in these northern parts. N. lat. 54° 38'. W. long. 3° 32'.

APPLECROSS, a village of Scotland, seated on a bay to which it gives name, on the west coast of the county of Ross, 52 miles west of Dingwall.

APPLEDORE, a sea-port town of England, in the county of Devon, in Barnstable bay, where the Danes landed under Hubba, in the time of Alfred. The harbour divides into two branches; that to the east goes up to Barnstable, distant from it 10 miles west, and the other to Biddeford.

APPLEDORE, a town of England, in the county of Kent, on the river Rother, 9 miles W. from New Romney, and 63 E. S. E. from London.

APPLE-TOWN, an Indian village on the east side of Seneca-lake, in New York, between the townships of Ovid on the South, and Romulus on the North.

APPLICATE, APPLICATA, *Ordinate* APPLICATE, in *Geometry*, is a right line drawn across a curve, so as to be bisected by the diameter thereof.

Applicate is the same with what we otherwise and more usually call Ordinate.

APPLICATE number. See CONCRETE.

APPLICATION, the act of *applying* one thing to another by causing them to approach or bringing them nearer together. Thus a longer line or space is measured by the application of a less, as a foot or yard by an inch, &c. : and

and motion is determined by successive application of any thing to different parts of space.

APPLICATION is sometimes also used, both in *Arithmetic* and *Geometry*, for the operation of division, or for that which corresponds to it in *Geometry*. Thus 20 applied to, or divided by 4, i. e. $\frac{20}{4}$, gives 5. And a rectangle ab applied to a line c , gives the fourth proportional $\frac{ab}{c}$, or another line,

as d , which with the given line c will contain a rectangle $cd = ab$.

APPLICATION, in *Geometry*, denotes the act of placing one figure upon another in order to determine their equality or inequality. In this way Euclid, and other geometers, have demonstrated some of the primary and fundamental propositions in elementary *Geometry*. Thus it is proved, that two triangles, having two sides of the one equal respectively to two sides of the other, and the two included angles equal, are equal in all respects; and two triangles having one side and the adjacent angles of the one respectively equal to one side, and the adjacent angles of the other, are also in the same mode of application shewn to be equal. Thus also it is demonstrated, that a diameter divides the circle into two equal parts; and that the diagonal divides a square or parallelogram into two equal parts. The term is also used to signify the adaptation of one quantity to another, in order to their being compared; the areas of which are the same, but their figures different. Thus Euclid shews how, on a right line given, to apply a parallelogram that shall be equal to a right-lined figure given. See also I. vi. pr. 28. &c.

APPLICATION of one science to another, signifies the use that is made of the principles of the one for augmenting and perfecting the other. As there is a connection between all the arts and sciences, one of them may be made subservient to the illustration and improvement of the other: and to this purpose algebra has been applied to geometry, and geometry to algebra, and both to mechanics, astronomy, geography, navigation, &c.

APPLICATION of *Algebra*, or *Analysis*, to *Geometry*. After the discovery of algebra and analysis, it was natural to apply these sciences to geometry, since lines, surfaces and solids, which are the objects of geometry, are commensurable, and capable of being compared with one another, and consequently of having their relations and proportions assigned. The application of algebra to geometry is of two kinds: that which regards the plane or common geometry, and that which respects the higher geometry, or the nature of curve lines.

The first of these is concerned in the algebraical solution of geometrical problems, and the investigations of theorems in geometrical figures, by means of algebraical investigations or demonstrations. Instances of this kind of application occur in the works of the most early writers in algebra, as Diophantus, Lucas de Burgo, Cardan, Tartalea, &c. and may be found in those of authors of more modern date even to our own times. Some of the best precepts and exercises relating to this kind of application may be seen in Sir Isaac Newton's "Universal Arithmetic," and in Mr. Thomas Simpson's "Algebra" and "Select Exercises." This method of resolving geometrical problems is, in many cases, more direct and easy, than that of the geometrical analysis; but the latter method by synthesis, or construction and demonstration, is the most elegant. The algebraical solution succeeds best in such problems as respect the sides and other lines in geometrical figures; and those geometrical problems in which angles are concerned are best resolved by the geometrical analysis. See other remarks on this method of solution in Newton's treatise above mentioned. The solution

of problems in this way depends upon a previous acquaintance with the method of expressing geometrical magnitudes, as well as their mutual positions and relations, by algebraical notation: e. g. a line, whether known or unknown, is represented by a single letter: a rectangle may be denoted by the product of the two letters expressing its sides; and a rectangular parallelepipedon by the product of three letters, two of which represent its rectangular base, and the third its height. The opposite position of straight lines may be expressed by the signs $+$ and $-$; and segments of lines may be denoted by letters with these signs prefixed, as circumstances require. In order to express the positions of geometrical figures, which it will be more difficult to do, because they are infinitely various, it will be necessary to have recourse to proportions or equations, which express certain relations that depend upon their positions: and the positions of figures may again be deduced from the equations that express the relations of their parts. Thus, an angle may be expressed by the ratio of its sine to the radius; a right angle in a triangle, by making the sum of the squares of the two sides equal to the square of the hypotenuse; the position of points may be ascertained by perpendiculars let fall from them on lines given in position; the position of lines by the angles which they make with given lines, or by perpendiculars drawn to them from given points; the similarity of triangles by an equation deduced from the proportionality of their sides, &c. But it is not possible to give general rules for all the particular cases that occur. As the geometrical proposition must first be expressed in the algebraic manner, the result, when the operation is completed, must be expressed geometrically. All theorems, in which the proportions of magnitudes only are employed, and all those that express the relations of the segments of a straight line, of their squares, rectangles, cubes, and parallelepipeds, are easily demonstrated in the algebraical method. From the first proposition of the second book of Euclid, the nine following may be derived with ease in this manner; and they may be considered as appropriate examples of this most obvious application of algebra to geometry. Moreover, the algebraical demonstrations of the 12th and 13th propositions of the second book require only the 47th of the first book; and the 35th and 36th of the third book require only the third of the third book and 47th of the first.

In the solution of problems, the following general observations will be of use. When any geometrical problem is proposed for algebraic resolution, you are, in the first place, to describe a figure that shall represent the parts or conditions of the problem, and regard that figure as the true one; then, having considered the nature of the problem, you are to prepare the figure for a solution, if it be necessary, by producing and drawing such lines, as appear most conducive to that purpose. When this has been done, let the unknown line or lines that seem to be the most easily found, and any of the known ones that are requisite, be denoted by proper symbols; then proceed to the operation, by observing the relation which the several parts have to each other. As no general rule can be given for the drawing of lines and selecting the most proper quantities to substitute for them, so as always to bring out the most simple conclusions, because different problems require different methods of solution; it will be best, in order to gain experience in this matter, to attempt the solution of the same problem by several ways, and then to apply that which succeeds best to other cases of the same kind, when they afterwards occur. The following general directions will be of use.

1. In preparing the figure, by drawing lines, let them be either parallel or perpendicular to other lines in the figure,

or so as to form similar triangles; and if an angle be given, let the perpendicular be opposite to that angle, and also fall from the end of a given line, if possible.

2. In selecting proper quantities for substitution, let those be chosen, whether required or not, which lie nearest the known or given parts of the figure, and by means of which the next adjacent parts may be expressed, without the intervention of surds, by addition and subtraction only. Thus, if the problem were to find the perpendicular of a plane triangle, from the three sides given, it will be much better to substitute for one of the segments of the base than for the perpendicular, though it be the quantity required; because the whole base being given, the other segment will be given, or expressed, by subtraction only, and to the final equation come out a simple one; from whence the segments being known, the perpendicular is easily found by common arithmetic: whereas if the perpendicular were first sought, both the segments would be surd quantities, and the final equation a quadratic one.

3. Where in any problem, there are two lines or quantities alike related to other parts of the figure or problem, the best way is to make use of neither of them, but to substitute for their sum, their rectangle, or the sum of their alternate quotients, or for some line or lines in the figure, to which they have both the same relation.

4. If the area, or the perimeter of a figure be given, or such parts of it as have but a remote relation to the parts required, it will sometimes be of use to assume another figure similar to the proposed one, of which one side is unity, or some other known quantity; from whence the other parts of this figure, by the known proportions of the homologous sides, or parts, may be found, and an equation obtained.

Prob. I. "The base b , and the sum of the hypotenuse and perpendicular a , of a right-angled triangle ABC (*Plate II. Geometry, fig. 28.*) being given, to find the perpendicular." Let the perpendicular BC be denoted by x ; then the hypotenuse will be expressed by $a-x$; but (by *Eucl. 47. 1.*) $AB^2 + BC^2 = AC^2$, i. e. $b^2 + x^2 = a^2 - 2ax + x^2$; whence $x = \frac{a^2 - b^2}{2a}$ = the perpendicular required.

Prob. II. "The diagonal, and the perimeter of a rectangle, ABCD (*fig. 29.*) being given, to find the sides." Put the diagonal $BD = a$, half the perimeter, $DA + AB = b$, and $AB = x$; then will $AD = b - x$: and therefore, $AB^2 + AD^2 = BD^2$, we have $x^2 + b^2 - 2bx + x^2 = a^2$; which solved gives $x = \frac{\sqrt{2a^2 - b^2} + b}{2}$.

Prob. III. "The area of a right-angled triangle ABC (*fig. 30.*), and the sides of a rectangle EBDF inscribed therein, being given; to find the sides of the triangle." Put $DF = a$, $DE = b$, $BC = x$, and the given area $ABC = d$; then, by similar triangles, we shall have $x-b$ (CF): a (DF) :: x (BC): $AB = ax$. Consequently $\frac{ax}{x-b} \times \frac{x}{2} = d$, and therefore $ax^2 = 2dx - 2bd$, or $x^2 - \frac{2dx}{a} = -\frac{2bd}{a}$;

which, solved, gives $x = \frac{d + \sqrt{\frac{d^2 - 2bd}{aa}}}{a}$; whence AB and AC will likewise be known.

Prob. IV. "Having the area of a rectangle DEFG (*fig. 31.*) inscribed in a given triangle ABC, to determine the sides of the rectangle." Let CI be perpendicular to AB, cutting DG in H; and let $CI = a$, $AB = b$, $DG = x$, and the given area $= cc$; then it will be, as $b : x :: a : ax = CH$; which, taken from CI, leaves $a - ax = IH$;

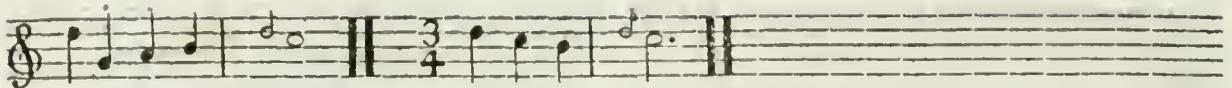
and this, multiplied by x , gives $ax - \frac{ax^2}{b} = cc =$ the area of the rectangle; whence we have $\frac{a^2x - ax^2}{b} = cc$, $x^2 - bx = -\frac{bcc}{a}$, $x - \frac{b}{2} = \pm \sqrt{\frac{b^2 - bcc}{a}}$, and $x = \frac{b \pm \sqrt{b^2 - bcc}}{2}$.

Prob. V. "To inscribe a square in a given triangle." Let ABC (*fig. 32.*) be the given triangle; and suppose DEFG to be the required square; and draw the perpendicular BP of the triangle, which will be given together with the sides. Then, the triangles BAC, BEF, being similar, the notation may be as follows; viz. the base $AC = b$, the perpendicular $BP = p$, and the side of the square DE or EF $= x$. Hence $BQ = BP - ED = p - x$; consequently, by similar triangles, $BP : AC :: BQ : EF$, i. e. $p : b :: p - x : x$; whence $px = bp - bx$; or $bx + px = bp$, and $x = \frac{bp}{b+p}$ the side of the square sought, or a fourth proportional to the base and perpendicular, and the sum of the two, making this sum the first term; or $AC + BP : BP :: AC : EF$.

Prob. VI. "The hypotenuse AC of a right-angled triangle ABC (*fig. 33.*) and the side of the inscribed square BEDF, being given; to determine the other two sides of the triangle." Let DE , or $DF = a$, $AC = b$, $AB = x$, and $BC = y$; then it will be, as $x : y :: x - a$ (AF): a (FD); whence we have $ax = yx - ya$, and consequently $xy = ax + ay$. Moreover, $xx + yy = bb$; to which equation let the double of the former be added, and there arises $x^2 + 2xy + y^2 = b^2 + 2ax + 2ay$; that is, $(x+y)^2 = b^2 + 2a(x+y)$, or $(x+y)^2 - 2a(x+y) = b^2$; whence, by considering $x+y$ as one quantity, and completing the square, we have $(x+y)^2 - 2a(x+y) + a^2 = b^2 + a^2$; whence $x+y - a = \sqrt{b^2 + a^2}$, and $x+y = \sqrt{a^2 + b^2} + a$, which put $= c$, and by substituting $c - x$ instead of its equal y in the equation $xy = ax + ay$, there will arise $cx - x^2 = ac$; whence x will be found $= \frac{1}{2}c + \sqrt{\frac{1}{4}cc - ac}$, and $y = \frac{1}{2}c - \sqrt{\frac{1}{4}cc - ac}$.

Hence it appears that c , or its equal $\sqrt{aa + bb} + a$, cannot be less than $4a$, and therefore b^2 not less than $8a^2$, because the quantity $\frac{1}{4}cc - ac$, under the radical sign, would be negative, and its square root impossible; and all squares, whether their roots be positive or negative, are positive; so that there cannot arise any such quantities as negative squares, unless the conditions of the problem under consideration are inconsistent and impossible. See *Simpson's Algebra, sect. 18, passim.*

The second branch of the application of algebra to geometry, or that which respects the higher geometry, or the nature and properties of curve lines, was introduced by Des Cartes. In this department the nature of the curve is expressed or denoted by an algebraic equation, which is thus formed. A line is conceived to be drawn, as the diameter or some other principal line of the curve, and upon this line, at any indefinite points, are erected perpendiculars, which are called ordinates, and the parts of the first line cut off by them are called abscissas. Calling the absciss x , and its corresponding ordinate y , the known nature of the curve, or the mutual relations of other lines in it, will afford an equation involving in it x and y , and other given quantities. And as x and y are common to every point in the primary line, the equation, derived in this manner, will belong to every position or value of the absciss and ordinate, and may be properly considered as expressing the nature of the curve in all points of it; and is usually called the equation of the curve. Hence



It has been well observed by M. Framery, in the *Encyclopédie Methodique*, that the appoggiatura gives a tender expression to the melody, that would injure marches and movements of spirit, which require energy and strong accents.

Appoggiaturas below the principal note, are more tender and affecting than those above; which are, however, more graceful and interesting. In recitative, though no appoggiaturas are ever written; they are as much understood and expected, as dots to the letter *i*.

Fragment of recitative, from Sacchini's opera of *Creso*.

Eccomi a piedi tu-oi; supplice io chiedo pie-tà da te, ma non rispondi?
al-trove perchè volgi il sembiante? Ah sì; costanza non hai di ri-mirar-mi in questo
sta-to in cui mi tiene an-co-ra.

This piece of *recitative* should be sung as if it were written in the following manner:

Eccomi à piedi tu-oi; supplice io chie-do pie-tà da te, ma non rispondi?
al-trove perchè volgi il sem-biante? Ah sì; cof-tan-za non hai di ri-mirar-mi in questo
sta-to in cui mi tiene an-co-ra.

M. Framery says, that the appoggiatura is the only embellishment in recitative. But Pacchierotti and Marcheli (perhaps since his article was written) have introduced graces in recitative, particularly before a close, which all the Italian singers and their imitators, who can execute them, have followed. See *RECITATIVE*.

The term appoggiatura is derived from appoggiare, to lean on. And as these little notes generally occur on the accented parts of a bar, more force is given to them by good performers, than to the principal note which they precede. In pathetic strains, the soul of the melody may be said to reside in the appoggiaturas.

APPOINTEE, a name formerly given to a foot soldier in the French army, &c. who for his long service and bravery receives pay above private sentinels.

Till the year 1670, they had also captains and lieutenants under the appellation of appointees, who, without residing in the regiment, received their pay. See *ANSPESSADES*.

APPOINTEE, in *Heraldry*, is when two or more things are placed touching each other at the points or ends.

APPOINTMENT, a pension or salary given by great lords and princes to persons of worth and parts, in order to retain them in their service. This term was chiefly used among the French in the time of their monarchy.

Appointments differ from wages, in that the latter are fixed and ordinary, being paid by the ordinary treasurers; whereas appointments are annual gratifications granted by *brevet* for a time uncertain, and are paid out of the privy purse.

APPOINTMENT, in *Law*, is used in contradistinction to a bequest. Thus, by construction of the statute 43 Eliz. c. 4. it is held, that a devise to a corporation for a charitable use is valid, as operating in the nature of an *appointment* rather than of a *bequest*. It is also held, that the statute of Elizabeth, which favours appointments to charities, supercedes and repeals all former statutes, and supplies all defects of assurances; and therefore, not only a devise to a corporation, but a devise by a copyhold tenant without surrendering to the use of his will, and a devise (nay even a settlement) by tenant in tail without either fine or recovery, if made

made to a charitable use, are good by way of appointment. Blackst. Com. b. ii. vol. ii. p. 376.

APPOMATOX, in *Geography*, is the name of a southern branch of James river in Virginia.

APPORTIONMENT, APPORTIONAMENTUM, in *Law*, a dividing of a rent into two or more parts, or portions, according as the land whence it issues is divided among two, or more proprietors.

Thus if a man, having a rent-service issuing out of land, purchase a part of the land; the rent shall be apportioned, according to the value of the land.—So if a man let lands for years, reserving rent, and a stranger afterward recover part of the land; the rent shall be apportioned.

But a rent-charge cannot be apportioned, nor things that are entire; as if one hold land by service, to pay to his lord yearly at such a feast a horse, &c.; there, if the lord purchase a part of the land, this service is totally extinct; because such things cannot be divided without hurt to the whole. But if part of the land, out of which a rent-charge issues, descends to the grantee of the rent, this shall be apportioned.

On partition of lands out of which a rent is issuing, the rent shall be apportioned. The statute 11 Geo. ii. c. 19. § 15. has in certain cases altered the law as to apportioning of rents in point of time; it being thereby enacted, "that if any tenant for life shall happen to die before, or on the day on which any rent was reserved or made payable, upon any demise or lease of any lands, tenements, or hereditaments, which determined on the death of any such tenant for life, the executors or administrators of such tenant for life, shall and may, in an action on the case, recover of and from such under-tenant or under-tenants of such lands, &c. if such tenant for life die on the day on which the same was made payable, the whole; or if before such day, then a proportion of such rent, according to the time such tenant for life lived, of the last year, or quarter of a year, or other time in which the said rent was going due as aforesaid, making all just allowances, or a proportionable part thereof respectively." Before this statute, the rent, by the death of a tenant for life, was lost; but the legislature having thus interposed in favour of tenants for life, the provisions of the statute have, by an equitable construction, been extended to tenants in tail. However, the dividends of money directed to be laid out in lands, and in the mean time to be invested in government securities, and the interest and dividends to be applied as the rents and profits would in case it were laid out in land, were held not to be apportionable, though tenant for life died in the middle of the half year. But where the money is laid out in mortgage, till a purchase could be made, the interest is apportionable. This distinction, however, may be referred to interest on a mortgage, being in fact due from day to day, and so not properly an apportionment; whereas the dividends accruing from the public funds are made payable on certain days, and therefore not apportionable. Upon this principle the Master of the Rolls decreed an apportionment of maintenance-money, it being for the daily subsistence of the infant; and the principle extending to a separate maintenance for a feme covert, such apportionment has, in such cases, been allowed at law.

A man purchases part of the land where he hath common appurtenant, the common shall be apportioned: of common appurtenant it is otherwise; and if by the act of the party, the common is extinct. Common appurtenant and appurtenant may be apportioned on alienation of part of the land to which it is appurtenant or appurtenant. Danv. Abr. 505. 507. Co. Litt. 144. 148, 149. Amb. Rep. 502. 2 P. Wms. 176. 501. 8 Rep. 79. Wood's Inst. 199.

APPOSAL of *sheriffs*, is the charging of them with money received on their account in the exchequer, 22 and 23 Car. II. c. 22.

APPOSER signifies an examiner. In the court of exchequer, there is an officer called the foreign *apposer*.

In the office of confirmation, in the first liturgy of Edw. VI. the rubric directs the bishop, or such as he shall appoint, to appose a child; and a bishop's examining chaplain was anciently called his *poser*.

APPOSITION, from *ad, to*, and *pono, I put*, the act of putting or applying one thing to another.

APPOSITION is used in *Physics*, in speaking of bodies which derive their growth from the adjunction or union of neighbouring bodies.

APPOSITION, in *Grammar*, denotes the putting two or more substantives together in the same case, and without any copulative conjunction between them.

Thus, Flanders, bloody theatre, horrible scene of war; love, enemy of human quiet; peace, parent of riches, source of faction, &c.

APPRAISER, from *ad, to*, and *pretium, value*, one who rates, or sets a value upon goods, &c. He must be a skilful and honest person. It is not a business of itself, but is practised by brokers of household furniture, to which set of men the word is chiefly applied. Yet upholsterers and other brokers are employed, or even any person or persons who are supposed to be skilled in the commodities to be appraised or valued. They are employed in cases of death, executions brought in upon goods, or of stock to be turned over from one person to another, or divided between copartners; and are called *sworn appraisers*, from their taking an oath to do justice between party and party. If they value the goods too high, they shall be obliged to take them at the price appraised, statute 11 Edw. I.

They sometimes appraise on behalf of both sides, each party agreeing to have the same appraiser or appraisers; sometimes in opposition, each part choosing one or more of a side; and sometimes by commission or deputation of trustees, masters in chancery, &c.

APPRECIATION, in *Music*, is the judging accurately of things within the power of our senses and perception. Our organ of hearing is unable to judge of sounds beyond a certain degree of gravity and acuteness. The octave below double C, the lowest note of the additional keys in the base of piano-fortes, is extremely difficult to tune; and the additional high notes seem more the production of wood than wire. However, the great mathematician, Euler, gives the extent of eight octaves to human perception; from the highest appreciable sound to the lowest: but, says Rousseau, these extremes of the scale not being very agreeable, we seldom, in practice, exceed five octaves, which the common compass of keyed-instruments furnishes. There is likewise a degree of force or loudness, which we cannot appreciate. The sound of a great bell, for instance, gives no distinct and certain tone, but a confusion of harmonies, which we cannot distinguish in the belfrey, from the fundamental. We must diminish the force by distance, ere we are sure what the real sound is. It is the same with a wind instrument overblown, and a voice that is forced beyond its natural power; so that those who try to sing loud, with a feeble voice, are always out of tune. With respect to noise, we can never reduce it to any fixed tone; and it is that which constitutes the difference between sound and noise. See BRUIT.

The abbé Feyter, taking up the subject, says, "Euler probably determined the compass of appreciable sounds, from

from the following circumstance: The largest pipe in a 72 feet organ, is an octave below the *bourdon*, or double-bale stop, and two octaves below double C in the open diapason of an organ. Now from the lowest C to the highest, on a piano-forte or harp, there is an interval of four octaves; and if we add two octaves to the bottom, and two to the top, for the low and high stops of an organ, we shall have the eight octaves in question. In order to complete the demonstration, we must have found by experiment, that a pipe less than two inches will not speak: for the most acute C in the 15th has only that length; but though birds, and the seracatto or bird-pipe, do produce more acute sounds, as we are unable to find their unison, we know not what they are.

APPREHENSION, in *Logic*, denotes the simple attention of the mind to an object presented either to our sense, or our imagination, without passing a judgment, or making any inference.

The word literally denotes the action of the hand, whereby it takes hold of, and grasps any thing: being formed of *ad*, and *prehendo*, I catch.

It is by that operation of the understanding, which is called simple apprehension, that we acquire those notions or ideas, which are the materials of all our knowledge. According to Dr. Reid, it is synonymous with conception; and like other simple operations of the mind, it cannot be logically defined. For his account of this operation of the mind, see CONCEPTION.

APPREHENSION is likewise used to express an inadequate and imperfect idea: and thus it is applied to our knowledge of God, in contradistinction to comprehension.

APPREHENSION, in *Law*, signifies the seizing a criminal, in order to bring him to justice. See ARREST.

APPRENDRE, in our *Ancient Law-Books*, a fee or profit to be taken or received. Statute 2 & 3 Edw. VI. c. 8.

APPRENTICE, from *apprendre*, to learn, one who is bound by covenant to serve a tradesman or artificer a certain time, usually seven years, upon condition of the master's instructing him in his art or mystery.

Apprentices may likewise be bound to husbandmen, or even to gentlemen of fortune and clergymen; who, as well as tradesmen, are compellable to take the children of the poor under a penalty of 10*l*. (stat. 8 & 9 Will. III. c. 30. § 5.); and the church-wardens and overseers, with the consent of two justices, may bind them till the age of twenty-one years. stat. 43 Eliz. c. 2. 18 Geo. III. c. 47. And by statute 5 Eliz. c. 4. §. 35. the justices may compel certain persons under age to be bound as apprentices, and on refusal may commit them.

Apprentices may be discharged on reasonable cause, either at their own request or that of their masters, at the quarter sessions, or by one justice, with appeal to the sessions (5 Eliz. c. 4.), who may, by the equity of the statute, if they think it reasonable, direct restitution of a rateable share of the money given with the apprentice; and parish-apprentices may be discharged in the same manner, by two justices, 20 Geo. II. c. 19. But if any, whose premium has been less than ten pounds, run away from their masters, they are compellable to serve out the time of absence, or give satisfaction for it, at any period within seven years after expiration of the original contract, 6 Geo. III. c. 26. Apprentices gain a settlement in that parish where they last served forty days, 15 & 14 Car. II. c. 12. And by the 5th of Elizabeth, c. 4 they have an exclusive right to exercise the trade in which they have been instructed, in any part of England. However, the resolutions of the courts

have in general rather confined than extended the restrictions of this statute.

No trades are held to be within the statute, but such as were in being at the making of it. For trading in a country village, apprenticeships are not requisite; and following the trade seven years, without any effectual prosecution (either as a master or a servant), is sufficient without an actual apprenticeship. See Blackstone's Com. vol. i. p. 426, &c.

By the common law, infants, or persons under the age of 21 years, cannot bind themselves apprentices, in such a manner as to enclose their masters to an action of covenant, or other action against *them* for departing from their service, or other breaches of their indentures; which makes it necessary, according to the usual practice, to get some of their friends to be bound for the faithful discharge of their offices, according to the terms agreed on. If an apprentice misbehaves himself, the master may correct him in his service, or complain to a justice of peace, to have him punished according to the statute 5 Eliz. c. 4. If any one entices an apprentice from his master's service, or harbours him after notice, the master may maintain a special action on the case against the person so doing. By the custom of London, an infant unmarried, and above the age of fourteen, may bind himself apprentice to a freeman of London, by indenture with proper covenants, which covenants, by the said custom, shall be as binding as if he were of full age. By the stat. 5 Eliz. c. 4. § 25. an apprentice must be bound by deed indented; and this must be complied with for all purposes except for obtaining a settlement. Indentures must also be enrolled in all towns corporate. 5 Eliz. c. 5. and 5 Geo. II. c. 46.; and in London, by the custom, in the Chamberlain's office there. In London, if the indentures be not enrolled before the Chamberlain within a year, upon a petition to the Mayor and Aldermen, &c. a *seire facias* shall issue to the master, to shew cause why not enrolled; and if it was through the master's default, the apprentice may sue out his indentures and be discharged: otherwise, if through the fault of the apprentice, as if he would not come to present himself before the Chamberlain, &c. for it cannot be enrolled unless the apprentice be in court and acknowledge it. Indentures are likewise to be stamped, and are chargeable with several duties by act of parliament.

With regard to the assigning of apprentices, it hath been held that an apprentice is not assignable. He cannot be bound nor discharged without deed. But though an apprentice is not assignable, yet such assignment amounts to a contract between the two masters, that the child should serve the latter. By the custom of the city of London, an apprentice may be turned over from one master to another; and if the master refuse to make him free at the end of the term, the Chamberlain may make him free; but, in other corporations, there must be a mandamus to the mayor, &c. to make him free in such case. It seems agreed, that if a man be bound to instruct an apprentice in a trade for seven years, and the master dies, the condition is dispensed with, being a thing personal; but if he be further bound to find him meat, drink, cloathing, and other necessaries; here the death of the master doth not dispense with the condition, but his executors shall be bound to perform it as far as they have assets. But if a person is bound apprentice by a justice of the peace, and the master dies before the expiration of the term, the justices have no power to oblige his executor, by their order, to receive such apprentice and maintain him. It is said, however, that the executor or administrator may bind him to another master for the remaining part of his time. In this case of the master's dying, it is said that by

the custom of London, the executor must put the apprentice to another master of the same trade. By the custom of the city of London, a freeman may turn away his apprentice for gaming: though, if a master turn away an apprentice on account of negligence, &c. equity may decree him to refund part of the money given with him. *Jacob's Law Dict.* by Tomlins, Art. *Apprentice*.

In France, the sons of tradesmen, living in their fathers' house till seventeen years of age, were reputed to have served an apprenticeship. In that country the times of serving are different in the different professions, from three years to eight. After serving out an apprenticeship, the person becomes what they call an *aspirant*, or candidate for mastership, and is to be examined by proper officers as to his skill and proficiency, and also to exhibit a *chef d'œuvre* or masterpiece in the art he has been bred to, before he be suffered to set up to practise for himself. And the custom of France, in regard to apprentices, is not unworthy the imitation of other nations.

Anciently, benchers in the inns of court were called *apprentices of the law*, in Latin *apprenticii juris nobiliores*; as appears by Mr. Selden's note on Fortescue; and so the learned Plowden styles himself. See *BENCHER*.

Sir Henry Finch, in his *Nomotechnia*, writes himself, *apprentice de ley*: Sir Edward Coke, in his *Instit. says apprenticii legis*, in pleading, are called *homines consilarii*, & *in lege periti*; and in another place, apprentices, and other counsellors of law.

APPRENTICESHIP denotes the servitude of an apprentice, or the duration of his indenture. The ingenious Dr. Smith, in his well-known and admirable work on "The Nature and Causes of the Wealth of Nations," has introduced several important and useful observations on this subject. The competition in several employments is restrained to a smaller number, than would otherwise be disposed to enter into them, partly by the limitation of the number of apprentices, which attends the exclusive privilege of incorporated trades, and partly by the long term of apprenticeship, which increases the expence of education. Seven years seem formerly to have been, all over Europe, the usual term established for the duration of apprenticeships in the greater number of incorporated trades. Such incorporations were anciently called universities, which is the proper Latin name for any incorporation whatever. The university of smiths, the university of tailors, &c. are expressions commonly occurring in the old charters of ancient towns. When those particular incorporations, which are now peculiarly called universities, were first established, the term of years during which it was necessary to study, in order to obtain the degree of Master of Arts, appears evidently to have been copied from the term of apprenticeship in common trades, of which the incorporations were much more ancient. As to have wrought seven years under a master properly qualified, was necessary to entitle any person to become a master, and to have himself apprentices, in a common trade; so to have studied seven years under a master properly qualified, was necessary to entitle him to become a master, teacher, or doctor (words anciently synonymous) in the liberal arts, and to have scholars or apprentices (words likewise originally synonymous) to study under him. By the 5th of Elizabeth, commonly called the *statute of apprenticeship*, it was enacted, that no person should for the future exercise any trade, craft, or mystery, at that time exercised in England, unless he had previously served to it an apprenticeship of seven years at least; and thus, what before had been the bye-law of many particular corporations, became in England the general and public law of all trades carried

on in market towns. To country villages the term of seven years' apprenticeship doth not extend; but the limitation of this statute to trades exercised before it was passed has given occasion to several distinctions, which, considered as rules of police, appear as foolish as can well be imagined. A coach-maker, for instance, has no right to make, or employ journeymen for making, coach wheels; but he must buy them of a master wheel-wright, this latter trade having been exercised in England before the 5th of Elizabeth. But a wheel-wright, though he has never served an apprenticeship to a coach-maker, may, by himself or journeymen, make coaches, because this trade, being of a later origin, is not within the statute. Thus also the manufactures of Manchester, Birmingham, and Wolverhampton are, many of them, upon this account, not within the statute, not having been exercised in England before the 5th Elizabeth. The regulations of apprenticeship in Ireland are upon a different footing, and somewhat less illiberal than in England. Prohibitions similar to those of the statute 5 Eliz. obtain in all corporate towns, by authority of bye-laws of the several corporations: but these prohibitions extend only to natives of Ireland; for by a regulation made by the lord lieutenant and privy council, having in this instance, by 17 & 18 Car. II. the force of a law, all foreigners and aliens, as well persons of other religious persuasions as protestants, who are merchants, traders, artificers, &c. shall, upon coming to reside in any city, walled town, or corporation, and paying twenty shillings by way of fine to the chief magistrate and common council, or other persons authorized to admit freemen, be admitted to the freedom of that city, &c. and to the freedom of guilds of their respective trades, with the full enjoyment of all privileges of buying, selling, working, &c.; and any magistrate, refusing to admit foreigners so applying, shall be disfranchised. In Scotland, there is no general law which regulates universally the duration of apprenticeships. The term is different in different corporations: where it is long, a part of it may generally be redeemed by paying a small fine. In most towns too, a very small fine is sufficient to purchase the freedom of any corporation. The weavers of linen and hempen cloth, the principal manufactures of the country, as well as all other artificers subservient to them, wheel-makers, reel-makers, &c. may exercise their trades in any town corporate without paying any fine. In all towns corporate all persons are free to sell butchers' meat upon any lawful day of the week. Three years are, in Scotland, a common term of apprenticeship, in some very nice trades; and, in general, there is no country in Europe in which corporation laws are so little oppressive. In France, the duration of apprenticeships is different in different towns and in different trades. In Paris, five years are the term required in a great number; and before any person can be qualified to exercise the trade, as a master, he must, in many of them, serve five years more as a journeyman. During this latter time, he is called the companion of his master, and the term itself is called his companionship. The institution of long apprenticeships, says Dr. Smith, can give no security that insufficient workmanship shall not frequently be exposed to sale: nor has it any tendency to form young people to industry. Apprenticeships were altogether unknown to the ancients: the Roman law is perfectly silent with regard to them. There is no Greek or Latin word which expresses the idea we now annex to the word Apprentice. Long apprenticeships are altogether unnecessary. The arts, which are much superior to common trades, such as those of making clocks and watches, contain no such mystery as to require a long course of instruction. In the common mechanic trades,

the lessons of a few days might certainly be sufficient. The dexterity of hand, indeed, even in common trades, cannot be acquired without much practice and experience. But a young man would practise with much more diligence and attention, if, from the beginning, he wrought as a journeyman, being paid in proportion to the little work which he could execute, and paying, in his turn, for the materials which he might sometimes spoil through awkwardness and inexperience. His education would generally in this way be more effectual, and always less tedious and expensive. The master, indeed, would be a loser; he would lose all the wages of the apprentice, which he now saves for seven years together. In the end, perhaps, the apprentice himself would be a loser: in a trade so easily learnt he would have more competitors; and his wages, when he came to be a complete workman, would be much less than at present. The same increase of competition would reduce the profits of the masters, as well as the wages of the workmen: the trades, the crafts, the mysteries would all be losers; but the public would be a gainer, the work of all artificers coming in this way much cheaper to market. Smith's *Nature and Causes of the Wealth of Nations*, vol. 1. p. 183—191. Irish Transf. vol. iv. pt. ii. part 59, &c.

APPRISING, in *Scots Law*, the name of the action by which a creditor formerly carried off the estate of his debtor for payment. It was thus called, because the sheriff, when no purchaser of the heritable rights could be found, *apprised*, or taxed the value of the lands by an inquest, so as to make over to the creditor lands to the value of the debt. By the act 1672, apprisings were superseded, and adjudications were substituted in their place. See ADJUDICATION.

APPROACH, *curve of equable, accessus equabilis*, was first proposed by M. Leibnitz, and has given the analysts some trouble. The curve is of such a nature, that a body descending in it by the sole power of gravity approaches the horizon equally in equal times.—This curve has been found by Bernouilli, Varignon, Maupertuis, and others, to be the second cubical parabola so placed as that its point of regression or vertex is uppermost, and the descending body must commence its motion in it with a certain determinate velocity. M. Varignon rendered the question general, by investigating the curve which a body might describe in vacuo, so as to approach towards a given point through equal spaces in equal times, according to any law of gravity. Maupertuis also resolved the same problem, in the case of a body descending in a medium, the resistance of which is proportioned to the square of the velocity. Vide Hist. Acad. R. Sciences, an. 1699. p. 82. Idem, an. 1730. p. 129. Mem. p. 333.

APPROACH, in *Gardening*, is used in speaking of the method of inarching or INOCULATING, which is called GRAFTING by *approach*.

Some physicians also speak of a method of curing diseases by touching or *approach*. See APPROXIMATION.

APPROACHES, in *Fortification*, the several works made by the besiegers for advancing or getting nearer to a fortress, or place besieged. Such are trenches, mines, saps, lodgements, batteries, galleries, epaulements, &c.

APPROACHES, or *Lines of Approach*, are particularly used for trenches dug in the ground, and their earth thrown up on the side next the place besieged; under shelter or defence whereof the besiegers may approach, without loss, to the parapet of the covered way, and plant guns, &c. wherewith to cannonade the place.

The lines of approach are to be connected by PARALLELS, or lines of communication.

The besieged frequently make *COUNTER-approaches*, to interrupt and defeat the enemies' approaches.

The ancients made their approaches towards the place besieged much after the same manner as the moderns. M. de Folard shews, that they had their trenches, their saps, parallels, &c. which, though usually held of modern invention, appear to have been practised long before by the Greeks, Romans, Asiatics, &c. Vide Polyb. t. ii. p. 161.

APPROACHES, *Method of*, in *Mathematics*, a name given by Dr. Wallis, in his *Algebra*, to a method of resolving certain problems relating to square numbers, &c., by first assigning certain limits to the quantities required, and then approaching nearer and nearer till a coincidence is obtained. In this sense, the double rule of false position may be considered as a method of approaches. See APPROXIMATION.

APPROACH, in *Fowling*, expresses the devices made use of to get within shot of shy birds. There are many contrivances practised for this purpose: a very common one is by means of circular pieces of wood or hoops surrounded with boughs, not unlike a chimney-sweeper's or milkmaid's garland, within which the fowler conceals himself with his gun, and steals on the birds, who are completely deceived, imagining the machine a tree, and its approach effected by their own motion towards it: it is therefore necessary that the fowler's approach should be very slow, and his motions very uniform; for any ruffle or shake would alarm the birds, and put them to flight. This mode is successfully practised on water-fowl when they are feeding on marshy grounds or basking on the sides of the water. But when these birds confine themselves principally to the middle of wide rivers, or in moors and lakes, this leafy covering must be placed in a boat; or a tall screen made of straw is sometimes set upright in it, behind which the sportsman remains concealed, and either gently paddles himself near the birds, or permits the boat to drift towards them.

In moonlight nights when water-fowls come on shore to feed, they are approached by the fowler, concealing himself behind a horse, who is made to move gently towards the birds, and this practice has given rise to an artificial figure called a stalking-horse, behind which the sportsman endeavours to gain on the fowls; but this is a less certain method, as they are fearful even of horses, cows, and sheep, as well as of man.

In deep snows, birds are approached by concealing every part of the person in a white dress; and even the gun must be clothed likewise. By this means hares, partridges, and moor-game are killed in abundance: but this device is not held fair in sporting language, because these are less wary animals, and, moreover, because there are regular methods in constant practice to entrap them. When bustards were plentiful on Salisbury plain, it was usual to hunt and approach them in a kind of covered cart with loopholes through which the fowler could see and take aim at them; but cultivation and increased population have nearly destroyed these birds in England.

APPROBATION, a state or disposition of the mind wherein we put a value upon, or become pleased with, some person or thing. Moralists are divided on the principle of approbation, or the motive which determines us to approve and disapprove. The Epicureans will have it to be only *self-interest*; according to them, that which determines any agent to approve his own action, is its apparent tendency to his private happiness; and even the approbation of another's action flows from no other cause but an opinion of its tendency to the happiness of the approver, either immediately or remotely. Those, who incline to this system,

reason thus: having experienced, in some instances, a particular conduct to be beneficial to ourselves, or observed that it would be so, a sentiment of approbation rises up in our minds, which sentiment afterwards accompanies the idea, or the mention of the same conduct, although the private advantage which first excited it no longer exist. Others resolve approbation into a moral sense, or a principle of benevolence, by which we are determined to approve every kind affection, either in ourselves or others, and all publicly useful actions, which we imagine to flow from such affection, without any view to our own private happiness.

Dr. Adam Smith thinks it needless to introduce any new power of perception, in order to account for the principle of approbation; and apprehends that sympathy is sufficient to account for all the effects ascribed to this peculiar faculty. This system places virtue in utility; and accounts for the pleasure with which the spectator surveys the utility of any quality from sympathy with the happiness of those who are affected by it. This sympathy, he observes, is different both from that by which we enter into the motives of the agent, and from that by which we go along with the gratitude of the persons who are benefited by his actions; and he says, it is the same principle with that by which we approve of a well-contrived machine.

Dr. Smith does not reject entirely from his system that principle of utility, the perception of which in any action or character constitutes, according to Mr. Hume, the sentiment of moral approbation. That no qualities of the mind are approved of as virtuous, but such as are useful or agreeable, either to the person himself or to others, he admits to be a proposition that holds universally; and he also admits, that the sentiment of approbation with which we regard virtue, is enlivened by the perception of this utility, or, as he explains the fact, by our sympathy with the happiness of those to whom the utility extends. Nevertheless he insists, that it is not the view of this utility which is either the first or principal source of moral approbation. To sum up the whole of his doctrine in a few words: when we approve of any character or action, the sentiments which we feel are derived from four different sources. First, we sympathize with the motives of the agent; secondly, we enter into the gratitude of those who receive the benefit of his actions; thirdly, we observe that his conduct has been agreeable to the general rules by which these two sympathies generally act; and, lastly, when we consider such actions as making a part of a system of behaviour which tends to promote the happiness either of the individual or of society, they appear to derive a beauty from this utility, not unlike that which we ascribe to a well-contrived machine. These different sentiments, he thinks, exhaust completely, in every instance that can be supposed, the compounded sentiment of moral approbation. "After deducting," says he, "in any one particular case, all that must be acknowledged to proceed from some one or other of these four principles, I should be glad to know what remains; and I shall freely allow this overplus to be ascribed to a moral sense, or to any other peculiar faculty, provided any body will ascertain precisely what this overplus is."

When we approve of good actions, and disapprove of bad, this approbation and disapprobation, when we analyse it, says Dr. Reid, "Essays on the active Powers of Man," (ch. vii. p. 244.) appears to include not only a moral judgment of the action, but some affection, favourable or unfavourable, towards the agent, and some feeling in ourselves. Dr. Ferguson, in "Principles of Moral and Political Science," agrees in the main with Lord Shaftesbury, Dr. Hutcheson, Dr. Reid, and Buffier, in regarding moral ap-

probation as a specific sentiment, incapable of resolution into any other sentiment or principle.

According to Dr. Clarke and others, reason or the understanding, the same faculty by which we distinguish between truth and falsehood, enables us to distinguish between what is fit and unfit, amiable and odious, both in actions and affections; and they argue, that such are the natures of certain actions, that when perceived as they are by a reasonable being, there must result in him certain emotions and affections. An excellent writer adds, that in contemplating the actions and affections of moral agents, we have both a perception of the understanding and a feeling of the heart; and the latter, or the effects in us accompanying our moral perceptions, are deducible from two springs. They partly depend on the positive constitution of our natures; but the most steady and universal ground of them is the essential congruity between the object and the faculty. Hutcheson's Inquiry, &c. tract iv. sect. vi. and Ess. on Pass. p. 207. Smith's Theory of Mor. Sent. Parts iv. and vi. Cudworth's Immut. Mor. b. i. Price's Review, &c. ch. ii. Paley's Philosophy, vol. i. p. 14.

APPROBATION, in *Civil Law*. It is a maxim among civilians, *approbare dicitur qui non improbat. He is judged to approve who does not disapprove.*

By the civil law, a mere approbation of a crime after commission does not make a person guilty; but an approbation attended with fact is equivalent to a command.

APPROBATION is more particularly used in speaking of recommendations of books given by persons qualified or authorized to judge of them.

Those appointed to grant licences and imprimaturs, frequently express their approbation of books.

Books were formerly subjected to a licenfer in England, see 13th Car. II. c. 33. which act is long since expired; and being incompatible with the noble principles of the revolution, has never since, and we hope never will be revived.

APPROPRIARE *ad honorem*, in *Law*, signifies to bring a manor within the extent and liberty of such an honour.

APPROPRIARE *communam*, signifies to discommon, i. e. to separate and inclose any parcel of land, which before was open common.

APPROPRIATE, APPROPRIATED, in *Philosophy*, is understood of something which is indeed common to several; yet, in some respects, is peculiarly attributed to one.

APPROPRIATION, in *Law*, denotes the annexing of an ecclesiastical benefice to the proper and perpetual use of some religious house, bishopric, college, or spiritual person, to enjoy for ever; in the same way as *impropriation* is the annexing of a benefice to the use of a lay person or corporation; that which is an appropriation in the hands of religious persons being usually called an *impropriation* in the hands of the laity. It is computed, that there are in England 3845 impropriations.

This contrivance seems to have sprung from the interested policy of the monastic orders, who begged and bought, for masses and obits, and sometimes even for money, all the advowsons within their reach, and then appropriated the benefices to their own corporation. But, in order to complete such appropriation effectually, the king's licence and the bishop's consent must first be obtained; because both the king and the bishop might some time or other have an interest, by lapse, in the presentation to the benefice, which can never happen if it be appropriated to the use of a corporation, which never dies. The consent of the patron is also necessarily implied, because the appropriation can be originally made to none but to such spiritual corporation as

is also the patron of the church; the whole being, indeed, nothing else but an allowance for the patrons to retain the tithes and glebe in their own hands, without presenting any clerk, they themselves undertaking to provide for the service of the church. When the appropriation is thus made, the appropriators and their successors are perpetual parsons of the church, and must sue and be sued, in all matters concerning the rights of the church, by the name of parsons. This appropriation may be severed, and the church become disappropriate, two ways: as first, if the patron or appropriator present a clerk who is instituted and inducted to the parsonage; for the incumbent so instituted and inducted is, to all intents and purposes, complete parson; and the appropriation, being once severed, can never be re-united again, unless by a repetition of the same solemnities. And when the clerk so presented is dillined from the vicar, the rectory then vested in him becomes what is called a *sine-cure*; because he hath no cure of souls, having under him a vicar to whom that cure is committed. Also, if the corporation which has the appropriation is dissolved, the parsonage becomes disappropriate at common law; because the perpetuity of person is gone, which is necessary to support the appropriation.

In this manner may appropriations be made at this day; and thus were most, if not all, of the appropriations at present existing originally made; being annexed to bishoprics, prebends, religious houses, nay even to nunneries, and certain military orders, all of which were spiritual corporations. At the dissolution of the monasteries by statutes 27 Henry VIII. c. 28. and 31 Henry VIII. c. 13. the appropriations of the several parsonages, which belonged to those religious houses, amounting to more than one-third of all the parishes in England, would have been, by the rules of the common law, disappropriated; if a clause in those statutes had not intervened, by which they were given to the king in as ample a manner as they were before held by the abbots, &c. The alien priories had, in former reigns, been dissolved and given to the crown. From these two sources have sprung all the lay appropriations or secular parsonages in the kingdom; they having been afterwards granted out from time to time by the crown. Blackstone's Com. vol. i. p. 384, &c.

APPROUAGE, or APPROUAK, in *Geography*, a river of South America, in the country of Guiana, which discharges itself into the sea; N. lat. $4^{\circ} 20'$. W. long. $52^{\circ} 46'$.

APPROUAGE, or Approouak, a town of South America, in Guiana, situate at the mouth of the river of the same name.

APPROVEMENT, APPROVEAMENTUM, or APPROVIAMENTUM, is sometimes used in *Ancient Law Writers*, for an improvement, or rise of the value and worth of a thing.

Thus to *approve, approbare*, is to make the best benefit of a thing, by increasing the rent, &c. *Cum omnibus approviamentis, et aliis pertinentiis suis, &c.*

Hence, in some ancient statutes, bailiffs of lords in their franchises are called their approvers. A bailiff is not to think it below him to *approve, approbare*, his master's goods; but of his barley to make malt, of his wool to make cloth, &c.

APPROVEMENT is more particularly used where a man hath common in the lord's waste, and the lord incloseth part of the waste for himself, leaving sufficient common, with egress and regress, for the commoner. Reg. Jud. 8, 9. This inclosure, when justifiable, is called in law *approvalment*, an ancient expression signifying the same as *improvement*. Accordingly, it is provided by the statute of

Merton, 20 Hen. III. c. 4. that the lord may approve, or inclose, and convert to the uses of husbandry, which is a melioration or improvement, any waste grounds, woods, or pastures, in which his tenants have common appendant to their estates, provided he leaves sufficient common to his tenants, according to the proportion of their land.

APPROVER, in our *Laws*, one who, being indicted for treason or felony, and arraigned for the same, doth confess the fact before plea pleaded, and appeals or accuses others his accomplices of the same crime, in order to obtain his pardon; and this confession is called *approvement*.

He is called an approver, or prover, *probator*, because he must prove what he hath alleged in his appeal. This proof was anciently either by battle, or by the country, at the choice of the appellee; and the form of this accusation may be found in Ciomp. Just. 250. See also Bracton, lib. iii. Staundf. Pl. Cor. 52.

If the appellee were vanquished, or found guilty, he must suffer the judgment of the law, and the approver have his pardon *ex debito justitiæ*. On the other hand, if the appellee were conqueror, or acquitted by the jury, the approver must receive judgment to be hanged, upon his own confession of the indictment; for the condition of his pardon has failed, viz. the conviction of some other person, and therefore his conviction remains absolute. It is purely in the discretion of the court to permit the approver thus to appeal, or not; and, in fact, this course of admitting approvements hath been long disused. But we have, in cases of burglary and robbery on the highway, what seems to amount to the same by statute; it being ordained, that where persons charged with such crimes out of prison, discover two others concerned in the crime, they shall have a pardon, &c. stat. 5 Anne, c. 31. Blackst. Com. vol. iv. p. 329.

APPROVERS of the king, are those who have the letting of the king's demesnes in small manors, &c. stat. 51 Hen. III. ff. 5.

In the statute of the 1st of Ed. III. c. 8. sheriffs are called the king's approvers.

APPROVER is particularly used, in *Ancient Law Writers*, for a bailiff or land-steward, appointed to have the care of a manor, franchise, or the like, and improve and make the most of it for the benefit of his master.

In this sense, the word is also written *approvare*.

APPROXIMATION, from *ad*, and *proximus*, near to, in *Arithmetic* and *Algebra*, a continual approach still nearer and nearer to a root or quantity sought, without a possibility of ever arriving at it exactly.

Methods of continual approximation for the square roots and cube roots of numbers have been employed by Algebraists and Arithmeticians, from Lucas de Burgo, and perhaps a much earlier period, to the present time. For the roots of higher powers, and of all simple equations, and also for the roots of all compound equations whatever, we have various approximations by Wallis, Raphson, Halley, and later writers, especially Newton, De Lagny, &c. all of them forming serieses infinitely converging, or approaching still nearer to the quantity required, according to the nature of the series.

It is evident, that if a number proposed be not a true square, it is in vain to hope for a just quadratic root thereof, explicable by rational numbers, whether integers or fractions; whence, in such cases, we must content ourselves with approximations, somewhat near the truth, without pretending to accuracy: and so for the cubic root, of what is not a perfect cube, and the like for superior powers.

This the ancients were aware of, and accordingly they had their methods of approximation; which, though scarcely applied by them beyond the quadratic, or perhaps the cubic

APPROXIMATION.

and thus he proceeded from one correction to another, employing always the first proposed equation to find them, instead of the successive near equations used by Newton.

E. G. Let it be required to find the root of the equation $x^3 - 5x = 31$ or $x^3 - 5x - 31 = 0$: here the root x is evidently equal to 8 nearly: and therefore for x take $8 + z$, and substitute $8 + z$ for x in the given equation, and the terms will be as follow:

$$\begin{aligned} x^3 &= 64 + 16z + z^3 \\ -5x &= -40 - 5z \\ -31 &= -31 \end{aligned}$$

the sum is $-7 + 11z + z^3 = 0$. Then, rejecting z^3 , we have $-7 + 11z = 0$, and $z = \frac{7}{11} = .6363$, &c. or $.6$ nearly. Next assume $z = .6 + y$, then

$$\begin{aligned} z^3 &= .36 + 1.2y + y^3 \\ 11z &= 6.6 + 11y \\ -7 &= -7 \end{aligned}$$

the sum $-.04 + 12.2y + y^3 = 0$, and rejecting y^3 , $12.2y = .04$, and $y = \frac{.04}{12.2} = .003278$ nearly. Assume $y = .003278 - v$, then

$$\begin{aligned} y^3 &= .000010745284 - .006556v + v^3 \\ 12.2y &= .0399910 - 12.2v \\ -.04 &= -.04 \end{aligned}$$

the sum $.000002345284 - 12.206556v + v^3 = 0$, and $v = \frac{.000002345284}{12.206556} = .000000192133$.

Hence, collecting all the assumed differences, with their appropriate signs, we shall have $x = 8 + z + y - v = 8.6 + .003278 - .000000192133 = 8.600327807867$ the required root of the equation proposed, according to the method of Newton.

Raphson's process is as follows: assume $x = 8 + z$, then

$$\begin{aligned} x^3 &= 64 + 16z + z^3 \\ -5x &= -40 - 5z \\ -31 &= -31 \end{aligned}$$

the sum $-7 + 11z + z^3 = 0$; hence $z = \frac{7}{11} = .6$ nearly. Assume $x = 8.6 + y$; then

$$\begin{aligned} x^3 &= 73.96 + 17.2y + y^3 \\ -5x &= -43 - 5y \\ -31 &= -31 \end{aligned}$$

the sum $-.04 + 12.2y + y^3 = 0$; hence $y = \frac{.04}{12.2} = .003278$ nearly; and $x = 8.6 + y = 8.603278$ nearly.

Assume $x = 8.603278 - v$; then

$$\begin{aligned} x^3 &= 74.016392345284 - 17.206556v + v^3 \\ -5x &= -43.016390 + 5v \\ -31 &= -31 \end{aligned}$$

the sum $.000002345284 - 12.206556v + v^3 = 0$; hence $v = \frac{.000000192133}{12.206556}$; consequently $x = 8.600327807867$ as before.

For the cubic equation e. g. $y^3 - 2y - 5 = 0$, Newton proceeds thus:

y is nearly 2 ; assume therefore $y = 2 + p$; then,

$$\begin{aligned} y^3 &= 8 + 12p + 6p^2 + p^3 \\ -2y &= -4 - 2p \\ -5 &= -5 \end{aligned}$$

the sum $-1 + 10p + 6p^2 + p^3 = 0$; hence $p = \frac{1}{10} = .1$ nearly.

Assume $p = .1 + q$; then,

$$\begin{aligned} p^3 &= .001 + 0.03q + 0.3q^2 + q^3 \\ +6p^2 &= 0.06 + 1.2q + 6q^2 \\ +10p &= 1 + 10q \\ -1 &= -1 \end{aligned}$$

the sum $0.061 + 11.23q + 6.3q^2 + q^3 = 0$; hence $q = -.0054$ nearly.

Assume $q = -.0054 + r$; then,

$$\begin{aligned} q^3 &= -.000000157464 + 0.00008748r, \text{ \&c.} \\ +6.3q^2 &= +0.000183708 - 0.06804r, \text{ \&c.} \\ +11.23q &= -0.060642 + 11.23r \\ +0.061 &= +0.061 \end{aligned}$$

the sum will be $+0.000541550530 + 11.16204748r$; hence $r = -.000048517$, &c. Consequently,

$$\begin{aligned} y &= 2 + p + q + r \\ &= 2 + 0.1 - 0.0054 - 0.000048517 \\ &= 2.094551483, \text{ the root of the equation, } y^3 - 2y = 5. \end{aligned}$$

In the same manner Newton performs the approximation for the roots of literal equations, that is, equations having literal coefficients; thus, the root of this equation,

$$\begin{aligned} y^3 + axy + a^2y - x^3 - 2a^3 &= 0, \text{ is} \\ y &= a - \frac{x}{4} + \frac{x^2}{64a} + \frac{131x^3}{512a^2} + \frac{509x^4}{16384a^3}, \text{ \&c.} \end{aligned}$$

Vid. De Analysis per AEquationum infinitas, cap. iv. § 1 and 2. apud Oper. Newton, t. i. p. 270, &c. Geometria Analytica, cap. n. ibid. t. i. p. 374, &c. Ed. Horsley. Raphsoni Analysis AEquationum Universalis. Phil. Trans. Abr. v. i. p. 81, &c. Saunderson's Algebra, vol. i. p. 722, &c. See a memoir on this method of the resolution of equations by the marquis de Courtivron, in the Mem. de l'Academie for 1744. For M. de la Grange's method of approximation for all the roots of a determinate numeral equation, see Mem. of Berlin, tom. xxiii. and xxiv.

Other particular methods of approximation, applicable to various purposes, have been given by many other persons: as for instance, methods of approximating, by series, to the roots of cubic equations belonging to the irreducible case, by Nicole, in the Memoires de l'Academie above cited; by M. Clairaut, in his "Algebra"; and by Dr. Hutton, in vol. i. of his "Tracts." Besides, the methods of infinite series by Wallis, Newton, Gregory, Mercator, Maclaurin, &c. may be considered as approximations in quadratures, and other branches of the mathematics, many instances of which may be seen in Wallis's Algebra, the Philosophical Transactions, and other books on the subject. To this head may be also referred the methods of exhaustions of the ancients, by which Archimedes and others have approximated to the quadrature and rectification of the circle, &c. which was performed by continually bisecting the sides of polygons, both inscribed in a circle, and circumscribed about it; by which means the sums of the sides of the similar polygons approach continually nearer and nearer to each other, and the circumference of the circle is nearly a mean between the two sums. See EQUATION.

APPROXIMATION, in *Medicine*, denotes a magnetical kind of cure or method of transplanting a disease into some other subject, whether animate or vegetable, by bringing it in immediate contact with the patient.

APPROXIMATION, in *Surgery*, APPROPINQUATIO, ENGY-SOMA, ENGISOMA OSSIUM CRANII. Fr. *Approximation des os du crane*; Germ. *Die Uebereinander schiebung der Hirnschalknochen*. This term is applied to those wounds of the head, in which, the scull being fractured, one or more of the splinters are forced under the sound part of the bone, so as to occasion a compression of the dura mater. In the delivery of a child, this occurrence with the bones of the cranium, one lapping over the other, is a natural circumstance.

APPUI, in the *Manege*, q. d. rest or stay upon the hand, is the reciprocal effort between the horse's mouth and the bridle-hand; or the sense of the action of the bridle on the hand of the horseman.

A just appui of the hand, is the nice bearing up or stay of the bridle; so that the horse, being awed by the sensibility and tenderness of his mouth, dares not rest too much upon

upon the bit-mouth, nor check or beat upon the hand to withstand it.

A dull appui, is when a horse has a good mouth, but his tongue is so thick that the bit cannot work, or bear upon the bars; the tongue not being so sensible as the bars: though the like effect is sometimes owing to the thickness of his lips. A horse is said to have no appui, when he dreads the bit-mouth, is too apprehensive of the hand, and cannot bear the bit. He is said to have too much appui, when he rests, or throws himself too much, or too hardly, upon the bit. Horses designed for the army ought to have a full appui upon the hand. See HAND.

APPULSE, from *ad*, and *pulso*, *I ad on*, in a general sense, a thing's being brought to, or in contact with another.

Articulation is either by appulse, i. e. when one of the moveable organs touches and rests on some of those which are immoveable; or without appulse, only by inclination of the moveable organ to the immoveable.

APPULSE of cattle, *appulsus pecoris*, in the *Civil Law*, the right of driving them to water.

APPULSE, in *Astronomy*, the approach of any planet to a conjunction with the sun, or a star; so that they may be seen within the same field of the telescope: or, as some authors have defined it, the actual contact of two luminaries.

The appulses of the planets to the fixed stars have always been of great use to astronomers, in order to fix the places of the former. The ancients wanting an easy method of comparing the planets with the ecliptic, which is not visible, had scarce any other way of fixing their situations, but by observing their track among the fixed stars, and remarking their appulses to some of those visible points. *Hist. Acad. Scienc. an. 1710, p. 417.*

Dr. Halley has published a method of determining the places of the planets, by observing their near appulses to the fixed stars. *Phil. Transf. N^o 369.* See also *Phil. Transf. N^o 76. p. 361.* and *Mem. Acad. Scienc. for 1708*, where Flamsteed and de la Hire have given observations of the moon's appulses to the Pleiades.

For discovering the longitude at sea, observations of the appulses of the moon to the fixed stars afford an excellent method. See LONGITUDE.

Of all the celestial observations hitherto made, none are capable of so perfect an exactness, as the near appulses of the moon and planets to the fixed stars; for though the places of the stars have not as yet attained their ultimate precision, yet such observations are ever good, the places of the planets being thereby ascertained in proportion to the correctness of any catalogues that may be made hereafter. But the ordinary number of stars, with which the planets may be thus compared, being small, the opportunities of observing are consequently rare; whence appears the great use of a full catalogue of all the telescopic stars within the zodiac, viz. that thereby opportunities of observing appulses may be more frequent. Since the royal observatory at Greenwich was put under Dr. Halley's care, he endeavoured to put himself in a condition to supply the many and great vacancies to be met with in the present zodiac; and for the service of astronomy, published a map or planisphere of the starry zodiac; wherein are accurately laid down all the stars to which the moon's appulse has ever been observed in any part of the world. *Phil. Transf. Abr. vol. vi. p. 170.*

His successors in that department, and particularly the present astronomer royal, Dr. Maskelyne, have contributed, in a very high degree, to the facility and use of such observations. See *Nautical ALMANAC*, and LONGITUDE.

APPURTENANCES, or APPERTINANCES, in *Common Law*, signify things belonging to some other as their principal.

The word is formed of *ad*, to, and *pertinere*, to belong. Appurtenances may either be things corporeal, as houses belonging to a chief manor, and common of pasture, &c.; or incorporeal, as liberties and services of tenants. See APPENDANT, and COMMON.

APREMONT, in *Geography*, a town of France, in the department of Vendée, and chief place of a canton, in the district of Sables d'Olonne, 5 leagues N. of Sables d'Olonne, and $2\frac{1}{2}$ S. E. of Challans.

APRES, a fictitious or heraldic animal, drawn as a bull with a short tail, like that of a bear; it is borne as the sinister supporter to the arms of the company of Muscovy merchants.

APRES-LÈS-VEYNE, in *Geography*, a town of France, in the department of the Higher Alps, and chief place of a canton in the district of Gap. The place contains 897, and the canton 5,300 inhabitants: the territory includes 245 kilometres and 9 communes.

APREY, a town of France, in the department of the Upper Marne, and chief place of a canton in the district of Langres, 8 miles S. W. of Langres.

APRI, in *Natural History*, a species of TAENIA that infests the liver of the boar. *Goeze Eingezw.—Gmelin.*

APRI, is also the specific name of another kind of *vermes* that inhabits the intestines of the boar; it is of the TRICHOCEPHALUS genus, and is thus described. Tail furnished on each side with crooked scales. *Goeze Eingezw.* This is of the same size as *T. hominis*, which infests the human body.

APRI, a third kind of *vermes*, also belonging to the ASCARIS genus. It is found in the lungs of the boar; is viviparous, brittle, tapering to a point at each end; slender as a fine thread, and an inch in length.

APRICARIUS, in *Ornithology*, a species of CHARADRIUS, about the size of the golden plover, that inhabits the northern parts of Europe; as Sweden, Denmark, Iceland, and Greenland; and feeds on worms, and the buds of the black-berried heath in the latter. The flesh is delicious.

The specific character is, the chin and abdomen black; body brown, dotted with white and yellow; legs cinereous. Linn. To which may be added, the length of the bill is one inch, its colour black; the eyes large, irides brown, eyelids black; at the base of the upper mandible, the feathers black; forehead, between the eyes, white, a line of which is continued over each eye, down the sides of the neck, and unites on the breast in the form of a transverse bar. The vent is spotted with white; secondaries, quills, and tail, barred with black and brown; legs black.—The male is distinguished by having a black patch on the temples.

This is *pluvialis aurca freti Hudsonis* of Brisson; *pluvier doré à gorge noire* of Buffon; spotted plover of Edwards; and alwargrim plover, *Arct. Zool. & Lath. Gen. Syn.*

APRICOT, in *Botany*. See PRUNUS.

APRICOT, in *Gardening*, a general name applied to a fruit-tree of the plum kind. This tree, we are told by different writers on gardening, came originally from Armenia, whence it takes the name of *Armeniaca*. It was introduced into this country, according to Mr. Forsyth, in 1562. The same writer also remarks, that though the apricot will not take upon the cherry-stock, it will succeed upon all sorts of plums, except the Brussels. The following selection of apricots is recommended as the most suitable for a small garden. *The Masculine*, the *Roman*, the *Orange*, the *Breda*, and the *Moor Park*. The most proper time for planting trees of this sort, the above author observes, is in autumn, as soon as the leaf begins to fall; such trees being chosen for this purpose as have the strongest and cleanest stems, and if such as have been headed down, and are of two

two or three years growth, they will bear and fill the walls much sooner than those which have not been so treated. He thinks they should only have one stem; or if they have two, one of them should be cut off; for by planting those with two stems, the middle of the tree is apt to be left naked, and of course one-third of the wall remains uncovered by the branches. The writer, however, seems fully aware, that it is the practice of many to make choice of trees with the smallest stems; but these, he thinks, always produce weaker shoots than such as he has recommended. The *Breda* is supposed the best and the richest flavoured for a standard, although the *Brussels* is frequently preferred; but Mr. Forsyth would by no means recommend planting more than three trees of each sort in a garden, as standards; as it is not one year in ten, he says, that a tolerable crop is produced from them. He thinks the *Breda*, the *Brussels*, and the *Moor Park*, should always be planted on an east or west aspect. A few trees for an early supply may be planted on a south aspect, according to the size of the garden, and the demand there may be for the supply of the family; but a west aspect is far preferable for the general crop. Those who wish for a late supply, may also have some trees planted on an east aspect.

In planting the trees, it is recommended, where the borders are new, that they should be made two feet and a half or three feet deep of good, light fresh loam; and that in old borders, where the earth has been injured by the roots of the former trees, it will be necessary to take out the old mould at least three feet deep and four feet wide, filling up the hole with fresh loam, taking care to plant the trees about eight inches higher than the level of the old border, to allow for the sinking of the earth, and that they may not afterwards be too deep in the ground. But the propagation, culture, and management of apricot trees, will be more fully treated of under the article PRUNUS.

The produce of the apricot tree is highly valuable as a summer fruit, for different purposes; while green and young, for tarts, pies, &c.; when ripe, it is a fine table fruit, provided it be gathered before it become soft and mealy; and when preserved in sugar, is an excellent sweetmeat.

APRIES, in *Biography* and *Ancient History*, succeeded his father Psammis or Psammutis, as king of Egypt, in the year before Christ 594, and is supposed to have been the Pharaoh-Hophra of Jeremiah, ch. xxxvii. 5.; and Ezekiel, xvii. 15. Herodotus (l. iv. c. 161.) and Diodorus (l. i. p. 62.) give him the character of a martial prince; and speak of successful wars which he carried on against the Tyrians, Sidonians, and Cypriots. Having taken Sidon by storm, and made himself master of the isle of Cyprus, he returned with immense spoil into Egypt. In the first year of his reign, he entered into a league with Zedekiah king of Judah, against the king of Babylon; and about two years after, attempted to relieve Jerusalem, which was closely besieged by Nebuchadnezzar; but as the Babylonians approached, he and his Egyptian army fled, and left the Jews to the merciless rage of their enemies. Towards the latter end of his reign, the Libyans applied to him for succour against the Cyrenzans, a Greek colony of Africa, by whom they were invaded; but the powerful army which he sent to their relief, being defeated with great slaughter, a discontent, which terminated in a civil war, took place among his own subjects. Amasis, who was employed to quell the tumult, betrayed Apries, and was proclaimed king. In a battle near Memphis, Apries was vanquished and made prisoner, and after some time was strangled; having reigned, according to Herodotus, 25 years, but 22 according to Diodorus. *Anc. Un. Hist.* v. i. p. 312.

APRIGLIANO, in *Geography*, a town of Italy, in the

kingdom of Naples, and province of Calabria Citra, 7 miles S. E. of Cosenza.

APRIL, the fourth month of the YEAR, according to the common computation; but the second, reckoning from the vernal equinox.

The word is derived from *Aprilis*, of *aperio*, *I open*; because the earth, in this month, begins to open her bosom for the production of vegetables; or, as others say, from *Αφροδιτη*, the Greek appellation of Venus.

In this month the sun travels through parts of the signs Aries and Taurus.

APRILE GUISEPPE, in *Biography*. See TENDUCCI, and CANTARE.

APRILINA, in *Entomology*, a species of PHALÆNA, in the *Noctua* family, described by Linnæus, and Fabricius. Both authors, it must indeed be remarked, have made great confusion between this and another species of the same family; viz. RUNICA: and Entomologists have been under considerable doubts respecting the identity of either. These are natives of Great Britain, and as such fully noticed by Mr. Donovan, in his "Natural History of British Insects;" from which it appears that the Linnæan species named *Aprilina*, is the same as Fabricius calls *Runica*; and, on the contrary, the *Runica* of Linnæus is the *Aprilina* of Fabricius: to reconcile the difficulties arising from this confusion, the two insects are thus defined.

Phalena Aprilina: thorax crested; wings deflexed, green; a black mark and transverse band; and a single row of black triangular dots near the apex. Vol. x. p. 57.

Phalena Runica: thorax crested; first wings greenish, with black marks; and a row of triangular dots behind. Vol. x. p. 75.

And it is further observed, that the two black femicircles on the thorax, and double row of triangular spots at the ends of the posterior wings, are mentioned as peculiarities of the species *Runica*, by some writers; the latter is, however, liable to considerable variations, the spots being in general crowded in a confused series, and forming an irregularly interrupted line. It may be easily distinguished from the *Phalena Aprilina*, by its superior size; the colours are less vivid, and it is destitute of the broad transverse bar, which is conspicuous on the upper wings of *Phalena Aprilina*. Vide Don. Brit. Inf.

APRILIS, or PRILIS Lacus, in *Ancient Geography*, *Lago de Castiglione*, a lake of Italy, belonging to Etruria, to the west of Rusellæ.

APRIO, in *Geography*, a town of European Turkey, in the province of Romania, the see of a Greek archbishop; situate on the Larissa, between Trajanapolis and Rhodolto. It was anciently called *Theodosiopolis*, from its being a favourite residence of Theodosius the great; and afterwards *Apris* or *Apro*.

A PRIORI *Demonstration*. See DEMONSTRATION.

APRON, in *Naval Architecture*, is a piece of curved timber fixed behind the lower part of the stern, immediately above the foremost end of the keel.

APRON is also a name given to a platform or flooring of plank, raised at the entrance of a dock, against which the dock gates are shut.

APRON, in *Gunnery*, a piece of lead which caps or covers the vent or touch-hole of a cannon.

APROS, in *Ancient Geography*, a river of Gaul, in the country of the Oxybiaus; supposed by M. D'Anville to be the present *Loup*.

APROSIO, ANGELICO, in *Biography*, a learned Augustine monk, was born at Ventimiglia in Genoa, in 1607. In Genoa he taught philosophy for five years, and he afterwards settled at Venice, where he lectured on polite literature.

ature. Of the library of the Augustines, founded by him in his native place, he published a catalogue, under the title of "Bibliotheca Aprobiana," printed at Bologna, in 1673, 12mo.; which contains an account of his own life, and of various authors. He wrote many satirical or humorous pieces under fictitious names. He died about the year 1682. Gen. Dict. Nouv. Dict. Histor.

APRUSA, in *Ancient Geography*, a river of Italy, placed by Pliny in Umbria, and supposed by Hardouin to be the present *Avafa*.

APRUSTUM, APRIGLIANO, a town of Italy, in Bruttium, south-east of Consentia; and supposed by Hardouin to be the *Abufteron* of Ptolemy.

APRUTIUM, a town of Italy, now *Teramo*.

APSALUS, a town placed by Ptolemy in Macedonia.

APSINES, in *Biography*, a sophist and rhetorician of Athens, was born at Gadara of Phœnicia, and flourished about the year 236. Philostratus was his friend, and celebrates his accuracy as a writer, in the last book of his sophists. His remains are to be found in Manutius's Collection of Rhetoricians, published at Venice in 1608. fol. Fabr. Bib. Græc. l. iv. c. 31. § 16.

APSINTHII, in *Ancient Geography*, people who inhabited the southern part of Thrace, towards the coasts, east of the river Melas, and west of the Hebrus. They took their name from the river Apſinthus, which traversed their country.

AP SIS, or APSIS, signifies the bowed or arched roof of a house, room, or oven, &c. as also the ring or compass of a wheel.

AP SIS, in *Ecclesiastical Writers*, denotes an inner part in the ancient churches, wherein the clergy sat, and where the altar was placed. It is supposed to have been thus called, because covered with an arch or vault of its own, by the Greeks called *απισ*, and by the Latins *apsis*. Isidore, with less probability, imagines it so called, as being the most luminous part; from *απτω*, to give light.

Apsis, in this sense, amounts to the same with what is otherwise called *choir*, *concha*, *camera*, and *presbyterium*; and stands opposite to the *nave* or body of the church.

AP SIS is more particularly used for the bishop's seat, or throne, in ancient churches. This was more peculiarly called *apsis gradata*, because raised on steps above the ordinary stalls. It was also denominated *exedra*, and in later times *tribune*.

AP SIS is also used for the reliquary, or case, wherein the relics of saints were anciently kept. It took the name *apsis* from its being round, or arched at the top; or perhaps from the place where it was kept. The *apsis* was commonly placed on the altar; it was usually of wood, sometimes also of gold and silver, with sculptures, &c.

AP SIS, in *Astronomy*, is applied to either of the two points in the orbits of planets, wherein they are at the greatest, and the least distance from the sun, or earth. The *apsis* at the greatest distance is called the *higher* or *summa apsis*; that at the least distance, the *lower*, *apsis ima*, or *infima*. The two *apsides* are also called *auges*. The higher *apsis* is more particularly denominated the *aphelion*, or *apogee*; the lower, the *perihelion* or *perigee*. The diameter which joins these two points is called the *line of the apsides*, and this passes through the centre of the orbit of the planet, and the centre of the earth or sun. In the modern astronomy, this line makes the longer or transverse axis of the elliptical orbit of the planet. Such is the line AQ (*Plate I. Astron. fig. 9.*) drawn from the *aphelion* A to the *perihelion* Q. The eccentricity is reckoned in the line of the *apsides*; being the distance between the centre of the orbit of the planet C, and the centre of the sun or earth, S, according as the Copernican or the Ptolemaic system is followed.

These definitions suppose that the lines of the greatest and least distances form one and the same right line; but this is not always precisely the case; as they sometimes make an angle with each other, which is greater or less than 180 degrees; and the difference from 180° measures the motion of the line of the *apsides*. When this angle is less than 180°, the motion of the *apsides* is said to be contrary to the order of the signs; and when it exceeds 180°, the motion is according to the order of the signs. Astronomers have proposed various methods for estimating the motion of the *apsides*, several of which are recited and explained in the "Astronomy" of Keil and that of Monnier. Newton, in his "Principia," has given an excellent method for determining the motion of the *apsides* of a planet, occasioned by the attraction of another, on the supposition that the planetary orbit is little different from a circle. He shews, that, if the sun be immovable, and all the planets gravitate towards him, in the inverse ratio of the squares of their distances, the motion of the *apsides* will be nothing; or the lines above mentioned will make an angle with each other of 180°, or form one straight line. But, on account of the mutual gravitation of the planets towards one another, their gravitation towards the sun is not precisely in that ratio, and consequently their *apsides* are not always exactly in a right line with the sun: and Newton has given a very elegant method of determining the motion of the *apsides*, on the supposition that we know the force which is thus added to the gravitation of the planet towards the sun, and that this additional force is always directed towards the sun, which is not precisely the case. For the motion of the *apsides*, see APHELION, APOGEE, and PLANET.

Kepler discovered, from observation, that the velocities of the planets in their *apsides*, are inversely as their distances from the sun; whence it follows, that they describe, in these points, equal areas about the sun in equal times. And although he could not prove, from observation, that the same was true in every point of the orbit, yet he had no doubt that this was the case. He therefore applied this principle to find the equation of the orbit, and, finding that his calculations agreed with observations, he concluded it was true in general, "that the planets describe about the sun equal areas in equal times." This discovery was, perhaps, the foundation of the "Principia," as it probably might suggest to sir Isaac Newton the idea that the proposition was true in general, which he afterwards proved it to be.

APSORRUS, or APSARUS, in *Ancient Geography*, a river in the district of Colchis, which fell into the Euxine sea, to the east of Athenæ.

APSORRUS was also the name of a town in Asia, on the coast of the Euxine sea.

APSUS, now *Crevasfa*, a river of Europe, in Macedonia, which rose in mount Tomarus, and ran into the Adriatic sea, at some distance to the south of Dyrrachium. This river watered a valley, which the ancients compared to that of Tempé. The Roman and Macedonian armies encamped on the banks of this river, in the war against Philip.

APSYCHIA, from *α*, privative, and *ψυχη*, soul, in *Medicine*, a swooning or fainting away, called also *hypopsychia* and *apopsychia*.

APSYCTOS, from *α*, and *ψυχω*, I cool, a word used by the ancients, as the name of a stone found in Arcadia, and of the colour of iron, the quality of which they say was, that when once heated red-hot, it would never grow cold again.

We have some stones indeed in England, that when once heated, will retain a warmth for a long time, but all the other accounts seem groundless; our warming-stone, used in Cornwall and Yorkshire to lay at the feet of people's beds, will retain warmth eight or ten hours; and there is a sort of red
stones.

stone cut out of the salt mountains near Cordova, and formed into broad tiles called *ruggiols* by the Italians, which being once well heated, will retain a sensible warmth twenty-four hours; but these do not all come up to the qualities of this imaginary stone of the ancients, the accounts of which must be fabulous.

APSYNTHIUS, in *Ancient Geography*, a town of Thrace, the same, according to Stephan. Byz. with *Ænus*, situate at the mouth of the Hebrus.

APSYRTIDES, the name of four islands of the Adriatic sea, at the entrance of the gulf of Flano.

APSYRTUS, in the *Materia Medica* of the ancients, a name given to the common *marrubium*, or horehound; a plant at that time, as well as now, esteemed very good in coughs, and other complaints of the breast.

APT, in *Geography*, a town of France, and principal place of a district in the department of Vaucluse; the see of a bishop, suffragan of Aix, before the revolution; the cathedral is said to be the oldest in France, and a council was held here in 1365. It is situated on the river Calavon, 9 leagues E. of Avignon, and 7 N. of Aix. N. lat. 43° 52'. E. long. 5° 56'.

APTA JULIA, in *Ancient Geography*, called also *Civitas Aptensium*, a town of Gallia Narbonensis; now APT.

APTENODYTES, in *Ornithology*, a genus of the order ANSERES. The bill is straight, rather compressed, and sharp along the edges; the upper mandible is obliquely sulcated lengthwise; feet palmated, shackled; wings sin-shaped, and without quill feathers.—Gmelin, &c. This is the genus PINGVIN of Dr. Latham's synopsis; his character of it is more copious, and is as follows: bill strong, straight, more or less bending towards the point, furrowed on the sides; nostrils linear, placed in furrows; tongue covered with strong spines, pointing backwards; wings small, more like fins, covered with no longer feathers than the rest of the body, useless in flight; body clothed with thick short feathers, having broad shafts, and placed as compactly as scales; legs short and thick, placed very near the vent; toes four, all placed forwards, the interior loose, the rest webbed; tail very stiff, consisting of broad shafts scarcely webbed.

"This genus of birds," adds Dr. Latham, "seems to hold the same place in the southern parts of the world as the awks do in the northern, and are by no means to be confounded the one with the other, however authors may differ in opinion in respect to this matter. The penguin is seen only in the temperate and frigid zones, on that side of the equator which it frequents; and the same is observed of the awk in opposite latitudes; and neither of the genera has yet been observed within the tropics. The awk has true wings and quills, though small; the penguin, mere fins only, instead of wings. This last has four toes on each foot; but the former only three. The penguin, while swimming, sinks quite above the breast, the head and neck appearing only out of the water; rowing itself along with its finny wings, as with oars; while the awk, in common with most other birds, swims on the surface. Several other circumstances, peculiar to each, might be mentioned, if these were insufficient to characterize this genus.

"The bodies of the penguin tribe are commonly so well and closely covered with feathers, that no wet can penetrate; and as they are in general excessively fat, these circumstances united secure them from cold. They have often been found above seven hundred leagues from land; and frequently on the mountains of ice, on which they seem to ascend without difficulty, as the soles of their feet are very rough, and suited to the purpose." Gen. Syn. vol. iii. p. 2.

The birds called by Buffon and some others penguin or pinguin, belong to the ALCA genus of Gmelin.—The last

author describes the following species of the APTENODYTES genus; chrysoconic, parachonica, papua, antarctica, magellanica, demersa, cataractes, torquata, minor, chilensis, and chilensis.

APTERA, from α and $\pi\tau\epsilon\rho\omega\nu$, wing, in *Entomology*, the seventh and last order of insects in the Linnæan system. The definition of the order is simply this: aptera, wings none; and the genera are divided into the three following sections:

* Legs six; head distinct from the thorax: comprehending the LEPTURA, PODURA, TERMES, PEDICULUS, and PULEX, genera.

** Legs from eight to fourteen, inclusive; head and thorax united: comprehending the ACARUS, HYDRACHNE, ARANEA, PHALANGIUM, SCORPIO, MONOCULUS, and ONISCUS, genera.

*** Legs numerous; head distinct from the thorax: comprehending the two last genera, SCOLOPENDRA, and JULUS.

It must, however, be observed, that this arrangement, though preferable to that of Fabricius in some respects, is not entirely free from objection; for there are abundant instances of apterous insects that can only be referred to the other classes, unless we separate the two sexes of many individual species, as we shall have occasion to notice in the articles FORMICA, MUTILLA, and others hereafter. Brunniche, in his system of entomology, has arranged every insect wanting wings, under his apterous order, without regarding those in which one sex has wings, and the other is destitute of them. Thus, for example, the apterous aphid, the female coccus, the neuters of ants, and the apterous mutillæ, are separate from their own species, and arranged amongst insects that have no affinity with them; and, to complete the disorder and confusion, the pupa of the grylli, creatures in a state yet imperfect, is included with the apterous order also.

No insect can be referred to the apterous order in the Linnæan system, unless both sexes, when arrived at their last state of being, are destitute of wings: although the term *apterous* is used in a general manner, by entomologists, to signify any insect without wings, when complete, whether it be the females of those winged males that belong to the other orders, or not; and even for coleopterous and hemipterous insects that have a hard shelly covering or elytra, and have no wings under them. It is often used, by Linnæus himself, in this manner, as the following examples fully prove.

APTERA, a species of BLATTA; it is apterous, brown, and punctured; posterior margins of the abdominal segments, and legs livid; wings (wing-cases) ferruginous; shanks spinous. Linn. and Gmel.

APTERA, a species of CICADA; apterous and black; wing-cases abbreviated; shanks and antennæ pale. Linn. & Gmel.

APTERA, in *Ancient Geography*, a town of Lycia.

APTERA, or *Apteria*, was also a town of the isle of Crete, situate in the western part to the north-west of Cydonia, and having for its port Cissamos or Kissamos. Near this town, according to Stephan. Byz., the Sirens challenged the Muses to a musical contest, but having been vanquished, they plucked off their wings, and leaped into the sea, whence fable reports its name; but Eusebius, in his Chronicon, says, that it was so called from one Apteras, king of Crete, the supposed founder of it. Here was also a temple or chapel dedicated to Venus Urania. This town is now called *Apteria* or *Paleocastro*.

APTERUS, in *Entomology*, the specific name of an insect in the PTINUS genus, described by Linnæus. The head is brown, and emarginated in front; wing-cases, legs, and antennæ rufous; thighs clavated; shank ciliated. Lesc. p. 7. n. 130.

APTERUS, is likewise the name of a species of **HISTER**, of a fulvous colour, and without wings. It is a native of Italy, and described by Scopoli (ent. carn.). Gmelin.

APTERUS, is a name also given to one of the curculiones, **CURCULIO APTERUS**: thorax spinous, impressed with a cruciform mark; wing-cases dotted with ferruginous brown. Fabr. Obs. The beak is short, legs unarmed, body black, and punctured on the belly. It is the **CURCULIO CRUCIATUS** of Degeer, is of a large size, and inhabits the Cape of Good Hope.

APTERUS is, lastly, a species of **CIMEX** found in Europe. It is variegated with red and black; elytra red with two black spots: no wings. Fab. and Gmel.

AP-THANES, an ancient term for the higher nobility in Scotland. See **THANE**.

APTITUDE, from *aptus, fit*, the natural disposition any thing hath to serve for such or such a purpose. Thus oil hath an *aptitude* to burn, and water to extinguish fire.

APTITUDE, or **APTESS**, is often used in speaking of the talents of the mind, for a promptitude or disposition to learn things with ease and expedition.

In which sense aptness amounts to the same with what the Greeks call *επιβολη*, and the Latins *bona incholes*, and we sometimes *docility*.

Charlton divides aptness into three parts, viz. *acuteness*, *facility*, and *memory*.

APTOTE, derived from *α priv.* and *απτωσις, casus*, in *Grammar*, a noun indeclinable, or which is without any variation or case.—Such are the words *fas*, *nefas*, &c.

APULEIUS, **LUCIUS**, in *Biography*, a Platonic philosopher, was born of a respectable family at Madaura in Africa, and lived in the 2d century, under the Antonines. He prosecuted his studies at Carthage, Athens, and Rome; at which latter place he acquired the knowledge of the Latin tongue without a master: and of these studies he gives the following curious account. “Our first cup of knowledge, which we receive from the hand of the teacher of letters, removes entire ignorance; the second furnishes us with the learning of the grammarian; the third arms us with the eloquence of the rhetorician; and as much as this is drunk by most persons: but at Athens I drank other cups from the deceitful fountain of poetry, from the clear stream of geometry, from the sweet waters of music, from the rough current of dialectics, and from the nectareous but inexhaustible deep of universal philosophy.” In the early period of life he spent his patrimony, which was considerable, in acts of liberality to his instructors and to the indigent, and in his travels, which he undertook for the acquisition of knowledge, and chiefly for gaining information concerning the religious opinions and ceremonies of different countries. With this view he obtained admission into their several mysteries; being initiated, in Greece, into several solemn rites; and devoting himself, at Carthage, to the worship of Æsculapius, their tutelary divinity, and performing the honourable office of Antistes, or chief conductor of the ceremonies, in the college of his priests. Upon his return to Rome, his patrimony was so completely exhausted, that he is said to have pawned his clothes in order to defray the expence of the inaugural ceremonies of his introduction into the fraternity of Osiris. In order to gain a subsistence, he assumed the profession of a pleader, from the exercise of which he derived considerable profit; but with a view of more speedily repairing his fortune, he married Pudentilla, a rich widow of Oea, whose principal attraction was her wealth. This connection involved him in a law-suit with the brother of her former husband, who charged him with employing magical incantations to gain her affection: but

he found no difficulty in proving to the satisfaction of his judges, that the only witchcraft by which he accomplished his purpose were the attractions of his person. The apology which he delivered on this occasion is still extant, and is much admired. In consequence of this unfounded accusation, and without any other evidence, Apuleius was ranked among the professors of magic; and after his death miracles were ascribed to him, which were placed in competition with those of Jesus Christ. Accordingly Lactantius, in the beginning of the 4th century, expresses his surprize that the author whom he confutes, had omitted Apuleius, of whom many wonderful things were reported: and Augustine, in the fifth century, was requested by Marcellinus to exert his utmost efforts in refuting those who falsely asserted that Christ did nothing more than was done by other men, and who produced their Apollonius, Apuleius, and other masters of the magical art, whose miracles they maintained to have been greater than his. Apuleius seems, indeed, to have been no mean proficient in those arts of imposture, which he had learned from priests of different countries; but the idle report above-mentioned was the only ground of the opinion circulated after his decease, that he possessed or exercised miraculous powers. This opinion, probably, originated in an absurd misapprehension of his fable of the “Golden Ass,” for true history. The work is a satirical romance, in which a Milesian fable, on the metamorphosis of Lucius into an ass, invented by Lucius of Patras, and abridged from him by Lucian, is enlarged and embellished. Although there be no sufficient evidence that Apuleius pretended to work miracles, and for instituting any comparison between him and Jesus Christ, yet it is not improbable that in some passages of the fable of the golden ass, he intended to ridicule the Christians; and bishop Warburton was, perhaps, right in his conjecture, founded on a passage in Apuleius’s Apology, that Æmilianus, the brother of Pudentilla’s first husband, who prosecuted him for magic, was a Christian. But there seems to be no sufficient ground for the supposition of this learned writer (see Div. Leg. b. iv. § 4.), that the design of the fable of the golden ass was “to recommend the Pagan religion as the only cure for all vice in general.” The author himself calls it a Milesian tale, and a Greek fable; and the ancients always so understood it. Mosheim and Lardner have examined the hypothesis of Dr. Warburton, and urged against it objections that are unanswerable. The true character of this work seems to be that which Barthius and Bayle have given it, viz. “that it is a perpetual satire on magical delusions, the tricks of priests, and the crimes of adulterers, thieves and robbers, committed with impunity.” This work was published with large notes by Beraldus, at Venice, in 1504, folio; reprinted at Paris, in 1510, folio, and in 1536, 8vo. The beautiful Epitome to it, intitled, “The Loves of Cupid and Psyche,” has been repeatedly translated into various languages. The Apology, or “Oratio de Magia,” was published separately by Casaubon, in 1594, 4to.; and at Leyden, in 1608, 8vo.; and by Pricæus with notes, &c. at Paris, in 1635, 4to. In philosophy, Apuleius wrote a treatise, “De habitudine doctrinarum et nativitate Platonis Philosophi,” in 3 books: the first on the speculative doctrines of Plato; the second on his morals; and the third on his logic. He also wrote a Latin translation of Aristotle’s treatise, “De Mundo;” an oration “De Deo Socratis,” discussing the question concerning his dæmon; and a work intitled, “Florida,” which, though rather rhetorical than philosophical, serves in many particulars to illustrate the history of philosophy. Another botanical work, intitled, “De Herbis, sive de nominibus ac virtutibus Herbarum,” has been ascribed to Apuleius;

but Johnson, the translator of Gerard, supposed it to be a translation of a Greek writer of the 8th century. Fabricius, however, thinks that this is an improbable conjecture. The first edition of the works of Apuleius was printed at Rome under the care of Cardinal Bessarion, in 1469, folio; they have since passed through various other editions, as those of H. Stephens, in 1585, 8vo.; of Elmenhorst, at Frankfort, in 1621, 8vo.; of Scriverius, at Leyden, in 1624, 12mo.; "Variorum" edition, at Gouda in Holland, in 1650, 8vo.; and another, "In Usum Delphini," 2 vols. 4to. at Paris, in 1688. Apuleius by his writings ought to be classed among the wits rather than the philosophers of his age. His writings, the view of Plato's doctrines excepted, are too florid and sportive, and in many parts too loose and wanton, to comport with the gravity of philosophy. Fabr. Bib. Latin. lib. iii. c. 2. tom. ii. p. 17. Gen. Diet. Lardner's Works, vol. vii. p. 459—465. Brucker's Hist. Phil. by Enfield, vol. ii. p. 53.

APULIA, now PUGLIA, in *Ancient Geography*, denoted that large district of Magna Græcia in Italy, which extended along the Adriatic sea from the river Frento or Fronto to the north-west, as far as the cape Japygium to the south-east, and comprehended Daunia, Peucetia, and Messapia. Its boundaries were, on the north and east, the Adriatic sea; on the south, Sinus Tarentinus, or the gulf of Tarentum, and part of Lucania; and on the west, Samnium. The principal mountains were, Garganus to the north, and Vultur to the south: its chief rivers were, Fronto, Aufidus, Cerbalus, and Bradanus; and its principal cities were, Teanum, Apulum, Sipontum, Arpi, Luceria, Aculum, Venusia, Acherontia, Canusium, Butuntum, and Barium; and Messapia, eastwards, Brundisium, and Hydruntum; and in the gulf, Tarentum and Callipolis. M. Freret supposes that the Apulians were a party of the Liburni, of Illyrian origin, who penetrated into Italy about the 6th century before Christ, and established themselves between the Alps and the river Athesis, whence they proceeded to that part which the Romans called Apulia and Japygia.

APULO-BAMA, in *Geography*, a jurisdiction of South America, consisting of missions belonging to the Franciscans, subject to the bishop of Cusco, 60 leagues from that city, in the empire of Peru, and comprehending seven towns of converted Indians.

APULUS, in *Entomology*, a species of SPHINX that inhabits Surinam. The wings are indented; anterior pair fulvous, with two golden-coloured spots; posterior wings white. antennæ feathered. Fabricius and Gmelin.

APURIMA, or APURIMAC, in *Geography*, a very rapid river of South America, rising near the town of Arequipa in Peru, on the west of the Great Lake Titicaca, S. lat. 16° 30', and running into the Ucaial. The Apurimac, in the map of La Cruz, appears to be the original and proper river of the Amazonas, and forms the remotest branch of the Ucaial, which must be regarded as the ancient or genuine Maranon.

APURWACA, or PIRAGUE, a river of South America, in Guiana, which is one of the most considerable rivers in the country.

APUS, *Ævis Indica*, in *Astronomy*, a constellation of the southern hemisphere, placed near the pole, between the Triangulum Australe and the Chameleon, supposed to represent the bird of paradise.

The apus is supposed to be one of those birds called *apodes*, as having no feet.

The stars contained in this constellation, according to Sharp's catalogue, annexed to the British, are eleven; in

Bayer's charts, twelve; but more numerous in La Caille's catalogue. The principal star is of the 5th magnitude; and in 1750, its right ascension was 214° 32' 45", and its southern declination 77° 57' 6".

APUS, in *Entomology* a species of MONOCULUS. The antennæ trifid, and the tail bifid. F. b. Spec. Inf. The shell is rather compressed, retuse in front, truncated behind, and tail terminating in two bristles. Linn. Syst. Nat. Found in stagnant waters.

The synonymous terms for this creature are numerous. It is the binoculus cauda bifida of Geoffroy; binoculus (palustris) oculus superis, testa postice truncata, cauda bifida of Mull. Zool. Dan.; limulus palustris, Mull. Entom.; & apus caneriformis, Scæff.

APUS, in *Ornithology*, the species of HIRUNDO, well known by the name of swift or black martin. The colour is black; throat white; all the toes placed forwards, Linn. This is *hirundo apus* of Aldrovandus, &c.; martinet noir of Bessou; and also grand martinet of the same author.

The length of this bird is eight inches; the wings remarkably long, and measuring from tip to tip, when expanded, no less than eighteen inches; the legs and claws black. The female is rather smaller than the male; the plumage inclines more to brown; and the white on the throat is less distinct.

This bird arrives in England later and departs sooner than either of the other swallows, from whence it is supposed to take a longer journey than the others. It has only one brood in the year; so that the young ones have time to gain strength enough to accompany the parent birds in their distant excursions. They inhabit the whole of the European continent, and have been also noticed at the Cape of Good Hope, and Carolina in North America. Swifts are almost constantly on the wing; they fly higher and with more rapidity than the swallows, and never associate with them. They seldom alight, and if by accident they should fall upon the ground, raise themselves up again with great difficulty. They are said to avoid heat as well as cold, and therefore remain in their holes in the daytime, and fly chiefly in the morning and evening in search of prey; their nests are built in elevated places, such as lofty steeples and high towers; the nest is composed of a variety of materials, as dry grass, moss, hemp, shreds of silk, linen, gauze, feathers, and other light substances. They lay five white eggs, which are rather of a longish form; the young are hatched about the latter end of May, begin to fly about the middle of June, and shortly after the nests are abandoned. Swifts begin to assemble, previously to their departure, early in July; their numbers daily increase, and large bodies of them appear together, they soar higher in the air, with shriller cries, and continue at times to assemble together in greater numbers till the beginning or middle of August, when they leave the island of Britain altogether.

APUTASY, in *Botany*, a name given by the people of Guinea to a tree, a decoction of which is in great use among them for washing the mouth to cure the leucopy in the gums, and preserve the teeth. Phil. Trans. N° 237.

APYCNI, in the *Ancient Music*, was used for such chords or sounds of the scale, as could never enter the spissum. They were fixed, or itables.

APYCNON, from α and $\pi\upsilon\kappa\upsilon\sigma$, *non spissimum, rarum*, in the *Ancient Music*, was applied to those two conjunct intervals of a tetrachord, which taken together were greater than the third.

This happened only in the two diatonic genera.

APYRENOS, in *Botany*, properly signifies without kernels.

APYREXY, formed of the privative α , and $\pi\upsilon\rho$, *ignis*, heat, in *Medicine*, the intermission of a fever, or ague.

APYROI, in *Antiquity*, a denomination given to **ALTARS** whereon sacrifice was offered without fire.

In which sense, the word stands contradistinguished from *empyroi*.

APYROMETALLUM, in *Metallurgy*, a name by which some authors have called gold, from its resisting the force of fire.

APYROUS, in *Chemistry*, is a word applied to denote that property in some bodies, by which they resist the most violent fire, without any sensible alteration.

AQUA, in *Natural History*, *Physics*, *Chemistry*, *Medicine*, **WATER**, &c. which see.

The word is Latin, and supposed to be compounded of *a* and *qua*, q. d. *from which*; alluding to the opinion that water is the basis, or matter of all bodies.

AQUA fortis. The workers in metals, &c. distinguish two kinds of aqua fortis, the double and single, or prima and secunda: the former of these is common **NITROUS acid**, the latter is nitrous acid diluted with an equal bulk of water.

AQUA marina, **AQUA marine**, in *Mineralogy*. See **BERYL**.

AQUA regia, or **AQUA regalis**. This is a combination in various proportions of nitric and muriatic acids. It was formerly known by the name aqua regia, from its being at that time the only acid capable of dissolving gold. In the new nomenclature it has attained the appellation of **NITRO-MURIATIC acid**.

AQUA secunda. This is nothing else but aqua fortis diluted with much pure water. It is employed in several arts, to clean the surface of metals and of certain stones, and for various other purposes.

AQUA sulphurata, *sulphur water*, formerly called *gas sulphuris* by Van Helmont, is at present known by the name of liquid **SULPHUREOUS acid**.

AQUA vite, water of life, *eau de vie* of the French, *usquebaugh* of the Irish, *whisky* of the Scotch, is a name familiarly applied to native distilled spirits. Hence grape wine being the material from which the common spirits are mostly procured on the continent, the French *eau de vie*, the Italian *acqua vite*, the German *brandwein*, are strictly synonymous, and correspond to the English word *brandy*. But fermented barley, rye, &c. being the material made use of in Scotland, Ireland, Holland and England, the terms *usquebaugh*, *whisky*, and *Hollands*, are more properly synonymous with the English **MALT spirits**.

AQUA, in *Pharmacy*, is a term prefixed to a variety of liquid preparations, in which water is the principal liquid vehicle. These are of two kinds, one the *distilled waters*, consisting of water impregnated with the medicinal virtue of various vegetables, through the medium of distillation; and the other kind is simply a solution of various saline substances, in known proportions of water, to ensure a greater accuracy in prescription.

We shall briefly notice the several aqueous preparations which are either actually in use, or have acquired a certain celebrity.

Aqua distillata, Pharm. Lond. **Aqua destillata**, Ph. Edin. Simple distilled water. To prepare this, any quantity of spring water is to be distilled in clean vessels. The first portions are to be rejected, and the process continued, till about two thirds are distilled off, which are to be kept for use in clean glass vessels.

No other water but distilled is allowed by the college to be used in the aqueous preparations. It is particularly requisite in some of the saline solutions, as, for instance, in

that of sugar of lead, which is perfectly clear with distilled water, but milky with pump or river water.

Aqua distillata, P. Lond. **Aqua stillatiæ**, P. Edin. *The distilled waters of Pharmacy*.

The general rule for preparing these waters is to put the plants, or parts of plants employed, into a tinned copper still, to cover them with water, and to distil it off with a gentle heat, as long as the liquor retains sufficient flavour of the plant. The process must be stopped before all the water is evaporated, otherwise the plant would be burned, and would give a disagreeable burnt taste to the liquor. See the articles **DISTILLATION**, **SPIRITS DISTILLED**, and **OILS ESSENTIAL**.

The number of plants submitted to distillation by former pharmaceutical chemists, is almost endless; and in the older pharmacopœias, we find numerous compound waters made of ingredients, many of which are either inert in themselves, or whose virtue is not capable of uniting with water through the medium of distillation. Of this kind are the daisy, bugloss, water-cress, &c. which have been prescribed for distillation; but in the present pharmacopœias, all these useless materials are omitted, and those only are retained that will give some sensible flavour or smell to water distilled of them.

The following are retained at present. **Aqua anethi**, (distilled water of dill)—**cinnamoni**, (of true cinnamon)—**faniculi**, (of fennel)—**mentha piperitides**, (of peppermint)—**mentha sativæ**, (of spearmint)—**pimento**, (of allspice)—**pulegii**, (of pennyroyal)—**rosæ**, (of rose leaves)—**corticis limonium**, (of lemon peel)—**corticis aurantiorum hispalensium**, (of Seville orange peel)—**castia lignæ**, (of cassia cinnamon.)

About a pound of the dry barks and seeds, and a pound and a half of the fresh plants, are sufficient for a gallon of the distilled waters; but three or four pints of water more must be employed to prevent burning, and to allow of that quantity to be distilled off.

It should be remembered that the term *distilled water* is now strictly confined to those preparations in which no other liquid than water is employed to extract the virtue of the plant; but formerly it was extended to those that were prepared with a mixture of ardent spirit and water, or even with pure spirit. Thus the *aqua lavenderæ*, (lavender water) is a *spirituous water*, prepared by distilling a mixture of spirits of wine and water from the lavender.

A few of the most celebrated distilled waters or spirituous waters, may be mentioned.

Aqua epidemica, *plague water*, is prepared by distilling the roots of masterwort (*imperatoria*), the seeds of angelica and elder flowers, in French brandy.

Aqua Regine Hungaria, *Hungary Water*.

The genuine Hungary water is a pure spirit distilled from the rosemary, and strongly scented with the rich perfume of this aromatic plant. The French is reckoned the best.

Aqua odorifera, *honey water*, *eau de miel*.

This is a compound aromatic spirit, prepared by distilling spirit of wine with honey, coriander seeds, vanilloes, cloves, nutmegs, lemon-peel, storax, benzoin, to which are added spirituous rose-water, and orange-flower water.

Aqua Vulneraria, *Arquebuse Water*, is a distilled spirit prepared from a great variety of aromatic plants, such as thyme, origanum, balm, lavender, rosemary, &c.

The reader will find the recipes for the above-mentioned waters, and a great number of others (many of which are now obsolete) in *Beaumé's Elements de Pharmacie*.

The medicinal virtues of the distilled aromatic waters and spirits have, perhaps, been much over-rated, and numerous distinctions between them with regard to their effects, have been made, without much foundation.

All of them are cordial and stimulating, and as such have

considerable efficacy in sudden faintings, sickness, and languor; but the difference of effect between the simple aromatic waters and the spirituous waters is so great, that much of the virtue of the latter is to be ascribed to the ardent spirit. They are largely used in medicine; and from their agreeable flavour and fragrantcy, they will conceal the nauseous taste and smell of many of the most unpalatable drugs. The consumption of the fragrant aromatic spirits is perhaps still greater, as perfumes for the toilet; and the flavoured spirits, more than all, as drams and cordials.

The other kinds of *waters* in pharmacy are simple solutions of various salts, as we have already mentioned. The following are retained in the London and Edinburgh pharmacopœias.

Aqua aluminis composita (formerly *Aqua aluminis Bateana*), is a solution of half an ounce of alum, and half an ounce of vitriolated zinc, in two pints of water.

Aqua cupri ammoniati (formerly *Aqua sapphirina*, or *aqua caelestis*), is prepared by mixing one dram of muriated ammonia with a pint of lime water, and suffering them to stand in a copper vessel till the solution has acquired that beautiful blue colour by which it is distinguished. The same effect takes place in glass vessels, if some thin pieces of copper are added. This preparation is a very weak solution of copper in the caustic ammonia, which is separated from the sal ammoniac by means of the lime water. It is used as a gentle escharotic in surgery, and it also forms a conspicuous ornament to the druggist's shop. See COPPER.

Aqua lithargyri acetati composita, is a mixture of two drams of the aqua lithargyri (or Goulard's extract), with two pints of distilled water, and two drams of proof spirit of wine.

Aqua zinci vitriolati cum camphora, is a solution of half an ounce of vitriolated zinc, in two pints of distilled water, to which half an ounce of camphorated spirit is added, and the whole filtered, to separate most of the camphor which is precipitated by the mixture. Enough of the camphor remains to give its strong smell to the solution.

Aqua ammoniac et aqua ammoniac puræ. See AMMONIACAL preparations.

Aqua ammoniac acetate. See ACETITE of Ammoniac.

Aqua kali preparati (formerly *lixivium tartari*), is a saturated solution of carbonate of potash in water, made by the spontaneous deliquescence of this alkaline salt, when kept for some time in a moist place.

Aqua kali puri (formerly *lixivium saponarium*), is a solution of potash made caustic by means of lime. See POTASH.

Aqua calcis, lime water. See LIME.

Aqua phagedænicæ, a preparation often used in surgery, is a solution of half a dram of corrosive sublimate of mercury, in one pint of lime water. The lime water here decomposes the mercurial salt, and makes a turbid brick-coloured liquor, of great efficacy as an escharotic in foul wounds or obstinate ulcers.

Aque Minerales. See WATERS MINERAL.

AQUA, or *Agua*, in *Geography*, a province of Africa in Guinea, on the Gold Coast, bounded on the south by Fantin, on the north-east by Dinkira, and on the west by the river of Chama, or St. John.

AQUA Augusta, in *Ancient Geography*, called likewise *Alfaina*, from the lake of that name, about 14 miles from Rome, near the Claudian way, was a stream of water brought to the city, and entering it at the porta Esquilina, now the gate of St. Laurence. It was not fit to drink, and served merely to water gardens, and to supply the Naumachie.

AQUA crabra, in *Ancient Geography*, a river which passed by the villa of Cicero at Tusculum, supposed by Cluvier and

M. D'Anville to be that which is now called Maranna: but the abbé Chauppy is of opinion that these were different rivers.

AQUA Julia, a river about 12 miles from Rome, in the Via Latina, brought by Agrippa to Rome during his exile, A. U. C. 721. Its source was called *Caput Julæ*, and it is now known by the name of *Capo d'Aqua*. It enters the city near the Esquiline gate, and had its name, according to Frontinus, from one Julius, who discovered the spring that supplies it.

AQUA Marcia, a stream of water which was conveyed through a considerable distance under ground, near the Tiber. This was also called *Aufalia*, and is said to have been first brought to Rome by the prætor Q. Marcius, from a spring near the Valerian way, upwards of 30 miles distant from the city, which it enters near the Esquiline gate. This was, and still is, reckoned the best water for drinking in Rome.

AQUA Paulina. See AQUEDUCT.

AQUA Tepula, a river formed by the union of several streams, which had its source about ten miles from Rome, in the Via Latina, and was conveyed thither by Agrippa; now known by the name of *Pesori*, near Frascati.

AQUA Virginica, a stream of water; so called, from a country girl's shewing the spring to some soldiers who were ready to perish with thirst; which enters Rome at the gate Pinciana, and was brought thither by Agrippa, A. U. C. 735. At present it issues from the fountain in the Piazza di Spagna, which represents a slip, and from that of Trevi, so called from the Trivium, where three streets meet.

AQUA VIVA, a place in Etruria, north of Rome.

AQUÆ, a small place in Brutium, near the sea; north-east of Scylla.

AQUÆ, baths of mineral waters in Mauritania Cæsariensis; mentioned by Ptolemy, and placed by Antonin in his Itinerary, 25 Roman miles from Cæsarea. The city was once a Roman colony and episcopal see.

AQUÆ Caralægas, a small ancient town situate in Hispania Tarragonensis.

AQUÆ, a small place of Italy, in Picenum, south-west of Alculum.

AQUÆ Albenfes, a town of Africa in Bizacium; also a town of Africa, in Mauritania Setifensis, which had been an episcopal see.

AQUÆ Angitia, a small place of Italy, in Brutium, upon the western coast.

AQUÆ Apollinares, a place of Italy, in Etruria, between Tarquinii on the north-west, and Cære to the south-east.

AQUÆ Augule, or *Tarbellicæ*, a city of Gaul, in Novempopulana, and capital of the Tarbelli. It is now *Acs*, or *Dax*. See ACS.

AQUÆ Billicus, *Vasserbilich*, a town of Gaul, belonging to the Sunuci; and placed by Martin south-east of Orolaunum, and west of Augusta Treverorum.

AQUÆ Bilibitanorum, *Banosse Athama*, a famous place of Hispania Tarragonensis, between Bilbilis to the east, and Anacum to the west.

AQUÆ Borvonis, *Bourbon-l'Archambaut*, a place of Gaul, belonging to the Bituriges Cubi, in Aquitania prima, between Tinconciun to the north-west, and Sitillia, belonging to the Boii, to the east.

AQUÆ Borvonis, *Bourbonne les Bains*, a place of Gaul, belonging to the Sequani, between Andometurum, or Lingones, to the west, and Dittatium to the east.

AQUÆ Calentes, a place of Gaul, belonging to the Averni, situate southwards.

AQUÆ Calide, *Bagni di Ballicano*, baths of Italy, three miles from Plaiscon.—Also, a town of Africa, in Numidia Propria,

Propria, wholly destroyed:—also, *Aigue-Perse*, a place of Gaul:—also, Bath in Somersethire:—also, *Calide Cilinorum*, a town of Hispania Tarragonensis, north of Barcino, belonging to the Laetani:—also, *Calide* or *Tibilitana*, in Africa, about ten leagues south-west of Hippo Regius, now called *Hamam*, or the baths, lying to the east of the Hamam-Meskouteen, on the north side of the river Sci-boufe, in the district of the Bookalwan, of the province of Constantina:—also, *Calide Colonia*, now the *Hamam* or the baths of Mereega, in the African province of Tlemsan, eight miles east-north-east of Maliana, between the river Sheliff and the sea; the largest and most frequented of these (says Shaw, *Travels*, &c. p. 30), is a basin of 12 feet square, and four deep; and the water, which bubbles up with a degree of heat scarce tolerable, after it has filled this cistern, passes on to a much smaller one, which is made use of by the Jews, who are not permitted to bathe in company, or in the same place, with the Mahometans; resorted to by a great concourse of people in the spring, the season of these waters, which are accounted very efficacious for curing the jaundice, rheumatic pains, and some of the most inveterate distempers: near this bath are the ruins of an old Roman town, and tombs and coffins of stone, said to be of an unusual size.—*Calide, Vichi*, a place of Gaul, south of Vorogium, and north-east of Angulstometum, or Averni.

AQUÆ CERETANÆ, a place of Etruria, north-west of Cære.

AQUÆ CILENORUM, a place of Spain, south-east of the river Iria Flavia.

AQUÆ CONVENARUM, *Capbern* according to M. D'Anville, south-east of Turba and north-west of Lugdunum, or Convenæ. Some authors have assigned its situation to that of the present Bagneres; but this does not correspond to the measures given in the Itineraries.—*Convenarum*, or *Onesiorum*, *Cominge*, a town of Gallia Narbonnensis.

AQUÆ CUMANÆ, baths near Cumas in Italy.

AQUÆ CUTILIAE, *Pozzo Ratinano*, a lake of Italy, in the country of the Sabines. Pliny, Seneca, and Varro report, that in this lake there was a moving island, and the latter says, that it was the centre of Italy. Vespasian used these waters every summer, and died in this place. By some they are called *Aquæ Sabine*; and by Strabo, *Aquæ Cutiliæ*.

AQUÆ DURÆ, *Alcala del Rio*, a place of Spain, in Bætica.

AQUÆ FLAVIÆ, *Cbiaves*, a town of Hispania citerior, belonging to the Callaici, and situate to the north-east, in the interior part of the country. Trajan built a bridge on the river now called Tamaga, the ruins of which indicate its former grandeur.

AQUÆ HELVETIÆ, *Baden*, a town of Gaul, belonging to the northern Helvetii, between Vindonissa to the west and Vitodurum to the east.

AQUÆ LATINATÆ, *Sardara*, a town in the island of Sardinia.

AQUÆ LÆÆ, a town of Spain, at the mouth of the Mincius.

AQUÆ MEROM, supposed to be the lake called by Josephus Samachonitis, in Upper Galilee, into which the river Jordan falls before it arrives at the sea of Genesareth. Here Jabin, king of Hazor, encamped, when he was defeated by Joshua. See Josh. ch. xi. 5.

AQUÆ NEAPOLIANÆ, a town of the island of Sardinia.

AQUÆ NERÆ, or *Neri*, *Neris*, a place of Gaul, belonging to the Bituriges Cubi, and situate between Mediolanum to the north-east, and Cantilia to the south-east.

AQUÆ NISIVÆ, or *Nilinei*, *Bouron-Lamy*, a place of Gaul, belonging to the Ædui, south-east of Decetia, and west of Telonnum.

AQUÆ ONOSÆ. See *AQUENSIS VIENS*.

AQUÆ ORIGINES, a place of Spain in the country of the Callaici, upon the Mincius, north-east of Tyde.

AQUÆ PANNONIÆ, baths of Aultria, now called *Baden*.

AQUÆ PASSARIÆ, a place of Italy, in Etruria.

AQUÆ PATAVIÆ, baths in the territory of Venice, near Padua, called *Fontes Aponi* by Livy and Martial, now *Bagni d'Abano*.

AQUÆ PISANÆ, a small place of Etruria, north-east of Pisa.

AQUÆ POPULONIÆ, a small place of Etruria, between Salebro to the south-east, and Manliana to the north-west.

AQUÆ QUERQUERNÆ, a place of Spain, belonging to the Callaici, between Aquæ Origines and Nometobriga.

AQUÆ QUINTIANÆ, a place of Spain, in the country of the Callaici, south-east of Lucus Augusti.

AQUÆ REGIÆ, a town of Africa, situate some miles south of Turzo; the ruins of which still remain.

AQUÆ REGIÆ, baths of Epirus, near Aeroceraunia.

AQUÆ SALVIÆ, a famous place in Italy, three miles from Rome. It was the see of a bishop, suffragan to the archbishop of Carthage.

AQUÆ SEGESIÆ, *Ferrières*, a place belonging to the Senonenses, between Genabum to the south-west and Agedincum to the north-east:—also *Segesle*, *Aissumin*, a place of Gaul belonging to the Seguliani; placed by M. D'Anville near Liger, and south of Forum Segulianorum.

AQUÆ SEXTIÆ, *Aix*, a town in Gaul, in Narbonnensis Secunda, to the north of Massilia. See *AIX*.

AQUÆ SICCÆ, probably *Seiches*, a place of Gaul, situate, according to M. D'Anville, south-west of Tolosa, and near it, and north-east of Vernosol.

AQUÆ STIACIÆ, or *Statiellorum*, a town of Italy in Liguria, now Acqui, in Montserrat.

AQUÆ TACAPITANÆ, a place of Africa in Bizacium, now called *El-Hammah* of Gabs, i. e. the baths of Gabs, or Tacape. These baths are sheltered from the weather by low thatched hovels; and their basons are about the size of those at Mereega. See *AQUÆ CALIDÆ*. One of these baths is called the bath of the lepers, and below it the water stagnates and forms a pool; the same, perhaps, with the lake of lepers, mentioned by Leo.

AQUÆ TAURI, hot baths of Etruria in Italy, three miles from the sea, said to be discovered by a bull, whence their name; now *Aquapendente* in Orvieto.

AQUÆ VACONIS, a place of Spain, south-east of Gerunda.

AQUÆ VOLATERRANÆ, a place of Italy in Etruria, south of Volaterræ, and on the other side of Cecina.

AQUÆ ET IGNI INTERDICTIO. See *INTERDICTION*.

AQUÆ BAJULUS, an ancient name for the clerk officiating under the chief minister, whose business was to assist him in carrying the holy water. The office corresponding to it at present is that of the *PARISH CLERK*.

AQUÆ HÆUSUS, in the *Civil Law*, a right of drawing water, and carrying it through another's ground.

AQUÆ PAVOR, is used by some to denote the *HYDROPHOBIA*. Phil. Trans. N° 147.

AQUÆDUCTUS, *AQUÆDUCTUS*, q. d. *ductus aquæ*, a conduit of water, in *Architecture* and *Hydraulics*, is a construction of stone or timber, built on an uneven ground, to preserve the level of water, and convey it by a canal, from one place to another. Some of these aquæducts are visible, and others subterraneous. Those of the former sort are constructed at a great height across vallies and marshes, and supported by piers and ranges of arches. The latter are formed by piercing the mountains, and conducting them below the surface of the earth. They are built of stone, brick,

brick, &c. and covered above with vaulted roofs or flat stones, serving to shelter the water from the sun and rain. Of these aqueducts, some are double, and others triple; that is, supported on two or three ranges of arches. Of the latter kind are the *pont-du-gard* in Languedoc, supposed to have been built by the Romans to carry water to the city of Nîmes; that of Constantinople; and that which, according to Procopius, was constructed by Cosires king of Parthia, near Petra in Mingrelia, and which had three conduits in the same direction, each elevated above the other. Some of these aqueducts were paved, and others conveyed the water through a natural channel of clay; and it was frequently conducted by pipes of lead into reservoirs of the same metal, or into troughs of hewn stone.

Aqueducts of every kind were reckoned among the wonders of ancient Rome; their great number, and the immense expence of bringing water, 30, 40, or 60, and even 100 miles, either upon continued arches, or by means of other works, when it was necessary to penetrate mountains and rocks, may well astonish us. He, says Pliny (Hist. Nat. l. 36. c. 15.), we consider the incredible quantity of water brought to Rome for the uses of the public, for fountains, baths, fish-ponds, private-houses, garden and country-seats; if we represent to ourselves the arches constructed at a great expence, and carried on through a long distance, mountains levelled, rocks cut through, and vallies filled up, it must be acknowledged that there is nothing in the whole world more wonderful. For 440 years the Romans contented themselves with the waters of the Tiber, and of the wells and fountains in the city and its neighbourhood. But when the number of houses and inhabitants was considerably augmented, they were obliged to bring water from remote places by means of aqueducts. Appius commenced this scheme of improvement. See *APPIAN aqueduct*. About 39 years after him, M. Curius Dentatus, who was censor with Papirius Cursor, brought water from the neighbourhood of the city of Tibur; and applied towards defraying the expence, part of the sums taken in the spoils of Pyrrhus. After them Lucius Papirius, Caius Servilius Cepion, Lucius Longinus Craffus, Quintus Marcius (who brought water to Rome from a spring at the distance of sixty-one miles), Marcus Agrippa, Augustus, and others, signalized themselves by their noble aqueducts. Even Tiberius, Claudius, Caligula, and Caracalla, though in other respects not of the best character, took care of the city in this useful article. There are still to be seen in the country about Rome wonderful remains of the ancient aqueducts, some elevated above the ground by arches continued and raised one above the other, and others subterraneous passing through rocks; such is that seen at Vicovaro beyond Tivoli, in which a canal pierces a rock to the extent of more than a mile, and about five feet deep and four broad. With what attention these immense works were constructed, will appear by inspection of the 128th plate in the 4th volume of Montfaucon's Antiquities. At certain distances vents were provided, so that the water which was accidentally obstructed in its passage, might be discharged, till its ordinary passage was cleared; and in the canal of the aqueduct itself there were cavities into which the water was precipitated, and where it remained till its mud was deposited, and ponds in which it might purify itself. In the construction of these aqueducts, there was a considerable variety: that called the *Aqua Marcia* had an arch of sixteen feet in diameter; it was constructed of three kinds of stone, and was formed with two canals one above the other: the most elevated was supplied by the waters of the Tiverone, *Anio novus*, and the lowest by the *Claudian* water. The entire edifice was 70 Roman feet high. The arch of the aquæ-

duct which brought to Rome the *Claudian* water was constructed of beautiful hewn stone. This is represented by Pliny (Hist. Nat. l. 36. c. 15.), as the most beautiful of all that had been built for the use of Rome. It conveyed the water through a vaulted canal, through the distance of 40 miles, and was so high that it supplied all the hills of the city. According to him, and the computation of Budæus, the charge of this work amounted to 1,85,500 crowns. This aqueduct was begun by Caligula, and finished by Claudius, who brought its waters from two springs called *Cæruleus* and *Curtius*. Vespasian, Titus, Marcus Aurelius, and Antoninus Pius, repaired and extended it: it is now called *Aqua Felice*. The aqueduct that conveyed the *Aqua Neroniana* to Rome, was built of brick; this, as well as the former, was 62 Roman feet high. The aqueduct that brought the *Aqua Marcia* into the city was repaired by Agrippa, who laid pipes from it to several parts of the city. The *Aqua Marcia*, *Aqua Julia*, and *Aqua Tepula* (see *AQUA*), entered Rome in one and the same aqueduct divided into three ranges or stories; in the uppermost of which flowed the *Aqua Tepula*, in the second the *Aqua Julia*, and in the lowest the *Aqua Marcia*. This accounts for the extraordinary height of this aqueduct, which far surpassed that of any other in Rome. From the ruins of this fabric, which still subsist, and are called "Il castel del *Aqua Marcia*," it appears to have been a very superb structure. The aqueducts were under the care and direction, first of the censors and ædiles, and afterwards, of particular magistrates called "Curatores Aquarum," instituted by Agrippa, to whom the aqueducts of Rome were objects of particular attention. Messala was one of these curatores in the reign of Augustus, and Frontinus held the same office in that of Nerva. Augustus caused all of them to be repaired. Procopius reckons only fourteen aqueducts in ancient Rome; but Victor has enlarged the number to twenty. Frontinus, a man of consular dignity, and who had the direction of the aqueducts under the emperor Nerva, mentions nine that emptied themselves through 13,594 pipes, of an inch diameter. Vigenere has observed, that in the space of twenty-four hours, Rome received from these aqueducts no less than five hundred thousand hogheads of water. The three chief aqueducts now in being are those of the *Aqua Virginea*, *Aqua Felice*, and *Aqua Paulina*. The first was repaired by Pope Paul IV. The second was constructed by Pope Sixtus V. and is called from the name which he assumed before he was exalted to the papal throne. It proceeds from Palæstrina at the distance of twenty-two miles, and discharges itself at the Fontana di Termini, which was also built at his expence, and consists of three arches, supported by four Corinthian pillars, and the water gushes out through three large apertures. Over the middle arch stands a beautiful statue of Moses striking the rock with his rod; over another arch is a basso-relievo of Aaron leading the people to the miraculous springs in the wilderness; and the third exhibits Gideon trying his soldiers by their drinking water. Round it are four lions, two of marble, and the other two of oriental granite, said to be brought thither from a temple of Serapis. All the four lions eject water; and on the front is an inscription, importing that this aqueduct was begun in the first and completed in the third year of the pontificate of Sixtus V. 1588. The third was repaired by Pope Paul V. in the year 1612. This divides itself into two principal channels, one of which supplies Mount Janiculus, and the other the Vatican and its neighbourhood. It is conveyed through the distance of thirty miles, from the district of Bracciano, and three of its five streams are not inferior to small rivers, and sufficient to turn a mill.

After recounting the ancient and modern aquæducts of Rome, we might mention those constructed by the Romans in other countries: one of the principal of these is the aquæduct of Metz, of which a great number of the arcades still remain. These arcades crossed the Moselle, which is broad and deep; and the copious waters of Gorze furnished water sufficient for the representation of a sea-fight. The water was collected in a reservoir, whence it was conducted by a subterraneous canal formed of hewn stone, and so lofty that a man might walk in it erect; and it then traversed the Moselle, at the distance of two leagues from Metz. This aquæduct was so accurately wrought and firmly cemented, that its parts have in a great degree resisted the floods of the most severe seasons. From the arcades that crossed the river, other aquæducts conveyed the water to the baths of Metz, and also to the place where the naumachia was exhibited. Of the aquæduct of Segovia, there still remain 159 arcades, consisting of stones of an enormous size, and joined without mortar. These arcades are 102 feet high, and are disposed in two ranges, one above the other. The aquæduct traverses the city, and passes under a considerable number of houses. The famous aquæducts of Constantinople, about six miles from the village of Belgrade, were built by Valentinian the first, Clearchus being præfect, and afterwards repaired by Solyman the magnificent, who emptied twelve adjacent Greek villages from the customary tribute of the empire, in consideration of their keeping these aquæducts in repair. Of these the most remarkable are three large and lofty fabrics, built over so many valleys betwixt the adjoining hills, of which the longest has many but less arches, and may possibly (says Chishull, Travels, &c. p. 43.), be the entire work of Solyman. The other two have the appearance of a more ancient and regular architecture, consisting of two rows of arches one over the other; and those of the second were inclosed by pillars cut through the middle, so as to render the fabric both passable like a bridge, and useful for the conveyance of water. The more considerable of these two consists of only four large arches, each twenty yards long, and somewhat above twenty high, supported by octangular pillars of about fifty-six yards in circumference towards the bottom. For an inquiry into the nature and construction of the aquæducts of the Romans, see Governor Pownall's Notices and Descriptions of Antiquities of the Provincia Romana, of Gaul, 4to. 1788. The aquæduct built by Lewis XIV. near Maintenon, for carrying the river Eure to Versailles, is perhaps the greatest now in the world. It is 7000 fathoms long, and its elevation 2560 fathoms; containing 242 arcades. Vide Phil. Trans. ap. Lowth. Abr. vol. i. p. 594.

AQUÆDUCTUS Fallopii, a name improperly given by Fallopius to the bony canal through which the firm portion of the auditory nerve passes out of the cranium.

AQUÆDUCTUS Cottennii, are real aquæducts serving to carry off redundant water from the labyrinth of the ear. For a more full account of each of these articles, see the description of the EAR.

AQUÆDUCTUS Sylvii, the iter a tertio ad quartum ventriculum, or canalis medius. See BRAIN.

AQUÆMANILIS, from *aqua*, water, and *manus*, hand, is particularly used, in Ecclesiastical Writers, for a kind of basin or laver, anciently placed in the vestibules of churches, serving to wash the hands in.

Aquæmanilis stood contradistinguished from *urceolus*, as the former was placed under the hands, the latter above them, from whence the water trickled down by a cock. The priest also, after celebrating mass, washed his fingers in an *aquæmanilis*.

In the inventories of church plate, we frequently find

mention of *aquæmanilis*, *aquaminilia*, *aquiminalia*, of silver gilt, wrought, &c. Du-Cange.

AQUAFFO, in Geography, a town of Africa on the Gold coast, where is held a slave market, to the west of Cape-coast-castle.

AQUAFORT, a settlement on the east side of the south-eastern extremity of Newfoundland island. N. lat. 47° 10'.

AQUAGE, a water-course.

AQUALICULUS, in Anatomy, a name given by some to the region of the body wherein the trunk terminates, and the thighs commence, and in which also the privities are placed.

The *aqualiculus* is the same with what others call *pubes*, others the *hypogastrium*, *fumen*, *imus venter*, &c.

AQUALLA, in Geography, a town of Africa, in the country of Soko, on the Gold-coast.

AQUAMBOE, a kingdom of Africa on the Gold-coast, bounded on the east by the river Volta, and on the west by Agonna. That part of Aquamboe which lies on the coast is called Acra, and might formerly have been an independent state; but it is now dependent and tributary. Aquamboe is one of the most extensive and powerful monarchies on the coast of Guinea; its maritime dominions extending twenty miles along the coast, and ten times as far into the inland parts. The territory towards the coast is said to be divided into a number of petty royalties, but all of them subject to the king of Aquamboe, who exercises an unlimited and indiscriminate authority over them as his meanest subjects; whence it has become a proverb, that in Aquamboe there are only two ranks of men, the royal family and the slaves. The natives of this country are haughty, turbulent and warlike; and their power is formidable to all the neighbouring kingdoms, except Achem. All the tributary nations are grievously infested by the incursions of the Aquamboans. It has been thought that the king and his nobility are richer in gold and slaves, and possess greater treasures than all the kingdoms on the coast of Guinea, at least on the Gold coast; and the extensive commerce of the maritime part of Acra would be much enlarged, if it were not obstructed by perpetual quarrels between the natives of Aquamboe and Achem. The sovereign of the former claims an annual tribute from the latter, the refusal of which excites frequent dissensions; but the former, sensible of the superiority of the latter, diverts the storm by creating discord in the councils of Achem, and thus he artfully contrives to preserve the tranquillity and trade of his realm. The chief business of the people is trade, agriculture, and war; and war in this country promotes trade and husbandry, by increasing the number of slaves and prisoners, who are obliged to labour for the Aquamboans, while they are maintained by them. Of course, they are by interest and inclination much addicted to war. Though the soil is fertile, yet before the expiration of the year, they are under a necessity of seeking supplies from other countries. The Aquamboans, disdain the employments of fishing and making of salt, leave them to the maritime negroes, who are very numerous, and carry on a great trade with the European shipping. The number of slaves sold here is at least equal to what is disposed of on the whole coast beside, not excepting Anamaboa. In time of war, every man fit to bear arms enters the field; and a certain number is detached to cultivate the ground and sell the prisoners, while the rest are engaged in opposing the enemy. Among the fishermen on the coast there are few warriors; for as they live under the protection of the Europeans, and are defended on the north by their more warlike countrymen, they are seldom attacked, or compelled to change the hook and net for the sword and buckler.

bykler. The countries of Labadde, Ningo, and Soko, all of which have parts on the sea coast, are merely divisions of the great kingdom of Aquamboe.

AQUA-NEGRA. See ACQUA-NEGRA.

AQUANILE, a river of Calabria, supposed by Swinburne (*Travels in the two Sicilies*, vol. ii. p. 175.), both on account of its name and position, to be the Hyllas, anciently the limit between Sybaris and Croton. On its banks the Crotoniates gained the victory which made them masters of the Sybaritan territory.

AQUAPENDENTE. See ACQUAPENDENTE.

AQUAPULCO. See ACAPULCO.

AQUARIA. See ACQUARIA.

AQUARIANS, in *Ecclesiastical History*, a sect, toward the close of the second century, who, instead of wine, used nothing but water in the sacrament.

It is said the occasion of the abuse was owing to the persecution which prevailed in those times: for the Christians, being then obliged to celebrate the sacrament in the night, found it necessary to make use of water, lest the smell of the wine should betray them to the heathens. But they afterwards went farther, and actually forbid the use of wine in the eucharist, even when it might be used with safety.

Epiphanius tells us, the Aquarians were the followers of Tatian; and were so called from the word *aqua*, *water*, because they abstained wholly from wine, and did not use it even in the eucharist.

AQUARIUS, in *Astronomy*, the eleventh sign in the zodiac, reckoning from Aries; from which also the eleventh part of the ecliptic takes its name.

The sun moves through Aquarius in part of the months of January and February: it is marked thus, ♒.

The poets feign that Aquarius was Ganymede, whom Jupiter ravished under the shape of an eagle, and carried away into heaven, to serve as a cup-bearer in the room of Hebe and Vulcan; whence the name.—Others hold, that the sign was thus called, because, when it appears in the horizon, the weather usually proves rainy.

The stars in the constellation Aquarius, in Ptolemy's catalogue, are 45; in Tycho's, 41; in Hevelius's, 47; in Flamsteed's *Britannic Catalogue*, 108.

AQUARTIA, in *Botany*, a plant so named by Jacquin, in honour of his friend B. Aquart, merchant in Martinico, who assisted him in his botanical researches. Linn. Gen. 136. Schrebt. g. 176. Jacq. Amer. 15. Juss. 126. Class, *tetrandria monogynia*. Nat. Order, *Solanee* Juss. Gen. Char. *Cal.* perianth monophyllous, permanent; tube, bell-shaped; limb, subquadricid, expanding; two opposite divisions obsolete. *Cor.* monopetalous, rotate; tube, very short; limb, quadricid; divisions linear, spreading. *Stam.* filaments short; anthers erect, very large, linear. *Pist.* germ. ovate; style, filiform, bending, the length of the corolla; stigma simple. *Per.* a berry, globular, one-celled. *Seeds*, very many, compressed.

Ess. gen. char. *Cal.* bell-shaped; *corolla*, wheel-shaped, with linear divisions; *berry*, many-seeded.

Species, 1. *Aquartia aculeata*. This is a perennial spinous plant, with alternate, ovate, obtuse, petioled leaves. Jacquin observes that it rises with a shrubby branched stem, to the height of four feet, producing white flowers, and yellow shining fruit, about the size of a pea. It has the appearance of a solanum, and Swartz thinks that it ought to be considered as one of that genus, with four stamens. A native of the West-Indies, and of South America. Jacq. ed. 2. Am. pict. t. 15.

AQUA-SPARTA, in *Geography*. See ACQUA-SPARTA.

AQUATANIO, or AQUA D'ACIO; a small river of Italy, which runs into the Tiber about a mile from Rome.

AQUATIA, in *Middle Age Writers*, a right of fishing three days in the year. Du-Cange.

In ancient deeds we find divers grants of this privilege of *aquatia*, or *aquatura*; sometimes also called *aquaria*.

In some writings *aquatia* seems also to have signified a fee, or other service, paid for the privilege of fishing.

AQUATIC, something which lives, breeds, or grows on or about the water. Thus we have aquatic plants, and aquatic animals. Trees which grow peculiarly on the banks of rivers, or in marshes, &c. are also called *aquatics*.

The ancient Romans had also their *aquatic* or *aquatile* gods, *di aquatiles*, called by Catullus, *di horales*; concerning whom we have an inscription in Reinsius, SEPTUO ET DIIS AQUATILIBVS.

To this class belonged the Tritons, the ministers of Neptune.

AQUATIC MANURE, in *Agriculture*, a term applied to such manure as is formed in consequence of the dissolution or decay of various aquatic vegetables, and deposited at the bottoms of ponds, ditches and other similar places. It has been observed by Mr. Marshall, in the *Rural Economy of the Midland Counties*, that he dressed two lands with the aquatic manure (raised two or three years before out of a fish-pool, and afterwards turned up into a heap of digests), the rest of the piece being manured with yard dung, the quantity of each about eight loads an acre, the two lands dressed with the aquatic manure were obviously the better crop of turnips; the plants were, he says, not more numerous but larger and cleaner-skinned, and what was remarkable, while the crop of the piece in general was full of cellock and chick-weed, which arose after the hoeing, the two lands where this sort of manure was applied, were in a manner entirely free from these weeds.

AQUATINTA, in the *History of the Arts*, a method of producing engravings very much resembling drawings in Indian ink.

The principle of this process consists in corroding the copper with aquafortis, in such a manner, that an impression from it has the appearance of a tint laid on the paper. This is effected by covering the copper with a powder or some substance which takes a granulated form, so as to prevent the aquafortis from acting where the particles adhere, and by this means cause it to corrode the copper partially and in the interstices only. When these particles are extremely minute, and near to each other, the impression from the plate appears to the naked eye exactly like a wash of Indian ink. But when they are larger, the granulation is more distinct: and as this may be varied at pleasure, it is capable of being adapted with great success to a variety of purposes and subjects.

This powder or granulation is called the aquatinta grain, and there are two general modes of producing it.

We shall first describe what is called the powder grain, because it was the first that was used. Having etched the outline on a copper plate prepared in the usual way by the copper-smith, (for which see the article ETCHING) some substance must be finely powdered and sifted which will melt with heat, and when cold adhere to the plate, and resist the action of aquafortis. The substances which have been used for this purpose, either separately or mixed, are, asphaltum, Burgundy pitch, rosin, gum copal, and gum mastic; and in a greater or less degree all the resins and gum resins will answer the purpose. Common resin has been most generally used, and answers tolerably well; though gum copal makes a grain that resists the aquafortis better. The substance intended to be used for the grain must now be distributed over the plate, as equally as possible; and different methods of performing this essential part of the operation have been used

by different engravers, and at different times. The most usual way is to tie up some of the powder in a piece of muslin, and to strike it against a piece of stick held at a considerable height above the plate. By this, the powder that issues falls gently, and settles equally over the plate. Every one must have observed how uniformly hair powder settles upon the furniture after the operations of the hair dresser: this may afford a hint towards the best mode of performing this part of the process. The powder must fall upon it from a considerable height, and there must be a sufficiently large cloud of dust formed. The plate being covered equally over with the dust or powder, the operator is next to proceed to fix it upon the plate, by heating it gently, so as to melt the particles. This may be effected by holding under the plate lighted pieces of brown paper rolled up, and moving them about till every part of the powder is melted. This will be known by its change of colour, which will turn brownish. It must now be suffered to cool, when it may be examined with a magnifier; and if the grains or particles appear to be uniformly distributed, it is ready for the next part of the process.

The design or drawing to be engraved must now be examined, and such parts of it as are perfectly white, are to be remarked. Those corresponding parts of the plate must be covered, or stopped out, as it is called, with turpentine, or what is better, mastic varnish, diluted with turpentine to a proper consistence to work freely with the pencil, and mixed with lamp-black to give it colour; for, if transparent, the touches of the pencil would not be so distinctly seen. The margin of the plate must also be covered with varnish. When the stopping out is sufficiently dry, a border of wax must be raised round the plate in the same manner as in etching, and the aquafortis, properly diluted with water, poured on. This is called biting in; and it is that part of the process which is most uncertain, and which requires the greatest degree of experience. When the aquafortis has lain on so long that the plate, when printed, would produce the lightest tint in the drawing, it is poured off, and the plate washed with water, and dried. When it is quite dry, the lightest tints are stopped out, and the aquafortis poured on as before; and this is repeated as often as there are tints to be produced in the plate.

Although many plates are etched entirely by this method of stopping out and biting in alternately, yet it may be easily conceived that in general it would be very difficult to stop round and leave out all the finishing touches, as also the leaves of trees, and many other objects, which it would be impossible to execute with the necessary degree of freedom in this manner.

To overcome this difficulty, another very ingenious process has been invented, by which the touches are laid on the plate with the same ease and expedition as they are in a drawing in Indian ink. Fine washed whiting is mixed with a little treacle or sugar, and diluted with water in the pencil so as to work freely, and this is laid on the plate covered with the aquatint ground, in the same manner and on the same parts as ink on the drawing. When this is dry, the whole plate is varnished over with a weak and thin varnish of turpentine, asphaltum, or mastic, and then suffered to dry, when the aquafortis is poured on. The varnish will immediately break up in the parts where the treacle mixture was laid, and expose all those places to the action of the acid, while the rest of the plate remains secure. The effect of this will be, that all the touches, or places where the treacle was used, will be bit in deeper than the rest, and will have all the precision of touches in Indian ink.

After the plate is completely bit in, the bordering wax is taken off by heating the plate a little with a lighted piece of

paper; and it is then cleared from the ground and varnish by oil of turpentine, and wiped clean with a rag and a little fine whiting, and then it is ready for the printer.

The principal disadvantages of this method of aquatinting are, that it is extremely difficult to produce the required degree of coarseness or fineness in the grain, and that plates so engraved do not print many impressions without wearing out. It is therefore now very seldom used, though it is occasionally of service.

We next proceed to describe the second method of producing the aquatint ground, which is generally adopted. Some resinous substance is dissolved in spirits of wine, as for instance common resin, Burgundy pitch, or mastic, and this solution is poured all over the plate, which is then held in a slanting direction till all the superfluous fluid drains off, and it is then laid down to dry, which it does in a few minutes. If the plate be then examined with a magnifier, it will be found that the spirit in evaporating has left the resin in a granulated state, or rather that the latter has cracked in every possible direction, still adhering firmly to the copper. A grain is thus produced with the greatest ease, which is extremely regular and beautiful, and much superior for most purposes to that produced by the other method. After the grain is formed, every part of the process is conducted in the same manner as above described.

Having thus given a general idea of the art, we shall mention some particulars necessary to be attended to, in order to ensure success in the operation. The spirits of wine must be rectified, and of the best quality: what is sold in the shops contains camphor, which would entirely spoil the grain.

Resin, Burgundy pitch, and gum mastic, when dissolved in spirits of wine, produce grains of a different appearance and figure, and are sometimes used separately, and sometimes mixed in different proportions, according to the taste of the artist, some using one substance and some another.

In order to produce a coarse or fine grain, it is necessary to use a greater or smaller quantity of resin; and to ascertain the proper proportions, several spare pieces of copper must be provided, on which the liquid may be poured, and the grain examined before it is applied to the plate to be engraved.

After the solution is made, it must stand still and undisturbed for a day or two, till all the impurities of the resin have settled to the bottom, and the fluid is perfectly pellucid. No other method of freeing it from those impurities has been found to answer. Straining it through linen or muslin fills it with hairs, which are ruinous to the grain.

The room in which the liquid is poured on the plate must be perfectly still, and free from dust, which, whenever it falls on the plate while wet, causes the grain to form a white spot, which it is impossible to remove without laying the grain afresh.

The plate must be previously cleaned with the greatest possible care, with a rag and whiting, as the smallest stain or particle of grease produces a streak or blemish in the grain.

All these attentions are absolutely necessary to produce a tolerably regular grain; and after every thing that can be done by the most experienced artists, still there is much uncertainty in the process. They are sometimes obliged to lay on the grain several times before they procure one sufficiently regular. The same proportions of materials do not always produce the same effect, as it depends in some degree upon their qualities, and it is even materially affected by the weather. These difficulties are not to be surmounted but by a great deal of experience: and those who are daily in the habit of practising the art are frequently liable to the most unaccountable accidents. Indeed it is much to

be lamented, that so elegant and useful a process should be so delicate and uncertain.

It being necessary to hold the plate in a slanting direction in order to drain off the superfluous fluid, there will naturally be a greater body of the liquid at the bottom than at the top of the plate. On this account, a grain laid in this way is always coarser at that side of the plate that was held lowermost. The most usual way is, to keep the coarsest side for the foreground, being generally the part that has the deepest shadows. In large landscapes, sometimes various parts are laid with different grains, according to the nature of the subject.

The finer the grain is, the more nearly does the impression resemble Indian ink, and the sifter it is for imitating drawings. But very fine grains have several disadvantages. For they are apt to come off before the aqua fortis has lain on long enough to produce the desired depth; and as the plate is not corroded so deep, it sooner wears out in printing. Whereas coarser grains are firmer, the acid goes deeper, and the plate will throw off a great many more impressions. The reason of all this is evident, when it is considered, that in the fine grains the particles are small and near to each other, and consequently the aqua fortis, which acts laterally as well as downwards, soon undermines the particles, and causes them to come off. If left too long on the plate, the acid would eat away the grain entirely.

On these accounts, therefore, the moderately coarse grains are more sought after, and answer better the purpose of the publisher, than the fine grains which were formerly in use.

Although there are considerable difficulties in laying properly the aquatint grain, yet the corroding of the copper, or biting in, so as to produce exactly the tint required, is still more precarious and uncertain. All engravers allow, that no positive rules can be laid down, by which the success of the process can be secured: nothing but a great deal of experience and attentive observation can enable the artist to do it with any degree of certainty.

There are some hints, however, which may be of considerable importance to the person who wishes to attain the practice of this art.

It is evident, that the longer the acid remains on the copper, the deeper it bites, and consequently the darker will be the shade in the impression. It may be of some use, therefore, to have several bits of copper laid with aquatint ground of the same kind that is to be used in the plate, and to let the aqua fortis remain for different lengths of time on each; and then to examine the tints produced in one, two, three, four minutes, or longer. Observations of this kind frequently repeated, and with different degrees of strength of the acid, will at length assist the judgment in guessing at the tint which is produced in the plate. A magnifier is also useful to examine the grain and to observe the depth to which it is bit. It must be observed, that no proof of the plate can be obtained till the whole process is finished.

If any part appears to have been bit too dark, it must be burnished down with a steel burnisher; and this requires great delicacy and good management not to make the shade streaky; and the beauty and durability of the grain are always somewhat injured by it, so that it should be avoided as much as possible.

Those parts which are not dark enough must have a fresh grain laid over them, and be stopped round with varnish and subjected again to the aqua fortis. This is called *re-biting*, and requires peculiar care and attention. The plate must be very well cleaned out with turpentine before the grain is laid on, which should be pretty coarse, otherwise it will not

lie upon the heights only, as is necessary in order to produce the same grain. If the new grain is different from the former, it will not be so clear nor so firm, but rotten.

We have now given a general account of the process of engraving in aquatinta; and we believe that no material circumstance has been omitted, that can be communicated without seeing the operation. But after all, it must be confessed, that no printed directions whatever can enable a person to practise it. Its success depends upon so many niceties and attention to circumstances apparently trifling, that the person who attempts it must not be surprized if he does not succeed at first. It is a species of engraving simple and expeditious, if every thing goes on well; but it is very precarious, and the errors which are made are rectified with great difficulty.

It seems to be adapted chiefly for imitations of sketches, washed drawings, and slight subjects: but does not appear to be at all calculated to produce prints from finished pictures, as it is not susceptible of that accuracy in the balance of tints necessary for this purpose. Nor does it appear to be suited for book plates, as it does not throw off a sufficient number of impressions. It is therefore not to be put into competition with the other modes of engraving. If confined to those subjects for which it is calculated, it must be allowed to be extremely useful, as it is expeditious, and may be attained with much less difficulty than any other mode of engraving. But even this circumstance is a source of mischief, as it occasions the production of a multitude of prints that have no other effect than that of vitiating the public taste.

Engraving in aquatinta was invented by Le Prince, a French artist, who kept his process for a long time secret: and it is said he sold his prints at first as drawings. But he appears to have been acquainted only with the powder grain, and the common method of stopping out. The prints which he produced are still some of the finest specimens of the art. Mr. Paul Sandby was the first who practised it in this country, and it was by him communicated to Mr. Jukes. It is now practised very generally all over Europe, but no where more successfully than in this kingdom.

AQUATULCO. See **AQUATULCO.**

AQUAVIVA, CLAUD, in *Biography*, the son of Andrew Aquaviva, duke of Atri in Naples, was born in 1542, and at the age of 25 admitted among the Jesuits. In 1581. he was advanced to the office of general of the fraternity, and in the exercise of it was distinguished by his prudence and mildness. He drew up an order under the title of "Ratio Studiorum," printed at Rome in 1586, 8vo.; which much offended the Jesuits, and was suppressed by the inquisition; but it was reprinted in a mutilated state, in 1591. This ecclesiastic has left "Letters" in French and Latin, "Meditations on the 44th and 93d psalms," and also a treatise intitled "Industria ad curandos animæ morbos," printed in 1606, 12mo. *Nouv. Dict. Hist.*

AQUAVIVA, in *Geography*. See **AQUAVIVA.**

AQUEDOCHTON, the outlet of lake Winnipicogee in New Hampshire, North America, N. lat. 43° 40': whose waters pass through several smaller ones in a south-west course, and empty into Merrimack river between the towns of Sanburn and Canterbury.

AQUELAOR, one of the Lacadives islands; N. lat. 10° 45'. E. long. 73° 25'.

AQUENSIS COLONIA, in *Ancient Geography*, the town of AIX.

AQUENSIS, the name of an episcopal see of Africa, in Mauritania Cæsariensis: also, an episcopal see in Bizacium.

AQUENSIS VICUS, or *Aque Onofia*, is the ancient name of the present Bagneres.

AQUEOUS, **AQUOSUS**, something that partakes of the nature of WATER, or abounds therewith.

AQUEOUS bath. See BATH.

AQUEOUS humour, in *Anatomy*, is the front humour of the eye, which occupies the space between the cornea and the crystalline lens, and across which the iris may be considered as floating. See EYE.

AQUETTA, a name for a kind of liquid poison made much use of by the Roman women, under the pontificate of Alexander VII.

This poison was prepared, and sold in drops, by Tophania, or Toffania, an infamous woman, who resided first at Palermo, and afterwards at Naples. From her they obtained the name of *aqua Tophania*, *aqua della Toffana*, and also *acquetta di Napoli*. It is said, that she distributed her preparation to wives who wished to have other husbands, and that it was secretly administered in many cases, which rendered the removal of obnoxious persons desirable; and that five or six drops were sufficient for destroying a man, and that the dose might be so proportioned as to operate in a certain time. This woman was imprisoned at Naples, and was living there in 1730, when Keyser visited the city. This traveller says, that since it has been discovered that lemon-juice is an antidote to it, the composition is sunk into disrepute. He adds, that Dr. Branchaletti wrote a book expressly on the remedies or antidotes against these stygian drops, which continued to be privately made and vended at the period above mentioned. (Keyser's Travels, vol. iii. p. 37.) Tophania (says Labat in his Travels through Italy, vol. iv. p. 33.) distributed her poison in small glass phials, with this inscription, *Manna of St. Nicholas of Bari*, under a pretence that it was a miraculous oil which dropped from the tomb of that Saint at Bari in the kingdom of Naples, and that it was effectual for the cure of many diseases. Upon being put to the rack, this woman acknowledged her wickedness, and impeached several ecclesiastics by whom she was protected. She was afterwards strangled. This art of administering secret poison was much practised in France and Italy about the close of the 17th and commencement of the 18th century. It was communicated by Godin de Sainte Croix, a dissipated young man of respectable family in France, to the Marchioness de Brinvillier, with whom he had intrigues. St. Croix was suffocated in his laboratory, whilst he was preparing his poison; and the Marchioness, whose whole life had been singularly infamous, and who confessed her horrid crimes, was executed at Paris, July 16th, 1676, and afterwards beheaded and burned. Garelli, physician to the emperor Charles VI. who was king of the two Sicilies when Toffania was arrested, in a letter to the celebrated Hoffman, in 1718 or 1719, says, that the slow poison administered by this wretch to the destruction of 600 persons, was nothing else than crystallized arsenic, dissolved in a large quantity of water by decoction, with the addition, for some purpose unknown to him, of the herb *cymbalaria*. Hoffman. Med. Ration. System. t. ii. p. 2. c. 2. § 19. p. 185. Hala 1729. 4to. It has been concluded also from the effects produced by the poisons of Toffania and Brinvillier, that they were arsenical mixtures; though some have maintained, that they were composed of opium and cantharides. This mixture is represented as a liquor, no less limpid than rock-water, and altogether insipid. Its effects were slow and almost imperceptible, and a few drops of it were administered in tea, chocolate, or other dietetic liquid.

AQUI, or **AQUITA**, in *Geography*, a town and province of Japan, in the southern part of the island of Nippon, near the straits of Sanguar.

AQUIABENSIS, in *Ancient Geography*, an episcopal see of Africa, in Bizacium.

AQUIDNECK, the ancient name of Rhode island.

AQUIFOLIUM. See ILEX.

AQUIGUI, or **ACQUIGNI**, in *Geography*, a town of France in the department of the Eure, one league from Louviers.

AQUILA, in *Astronomy*, a constellation of the northern hemisphere; usually joined with Antinous.

The stars in the constellations, Aquila and Antinous, in Ptolemy's catalogue, are 15; in Tycho's, 19; in Hevelius's, 42; in the Britannic catalogue, 71: but in Aquila alone, Tycho reckons 12 stars, and Hevelius 23: the principal star being Lucida Aquila, between the first and second magnitudes.

AQUILA, in *Chemistry*, has several significations, according to the epithets joined with it.

AQUILA alba is a name given to a combination of corrosive sublimate with fresh mercury, called *mercurius dulcis*.

AQUILA, in *Ancient Geography*, a river of Scythia, near mount Caucasus.

AQUILA, anciently *Avia* or *Avella*, in *Geography*, a city of Italy, and the capital of Abruzzo ultra, situate on a hill near the river Pescara; is the see of a bishop, and was once fortified, but now quite dismantled. In 1703, it suffered much from an earthquake, which damaged a great part of the town, and destroyed 24,000 persons, and dangerously wounded 1500; on this occasion, 800 were swallowed up, together with the church, to which they had fled for refuge. The territory of Aquila formerly furnished Italy, almost exclusively, with saffron; but since that plant has been so much cultivated in Lombardy, it has declined in Abruzzo. Aquila is 50 miles NE. of Rome, and 93 N. of Naples. N. lat. 42° 19'. E. long. 14° 20'.

AQUILA, in *Biography*, a native of Sinope, a city of Pontus, flourished at the beginning of the second century, under Adrian, and was employed by him as superintendent of the public buildings, and particularly of the new city called *Ælia*, which the emperor was erecting on the site of the ancient Jerusalem, destroyed by Titus. Here he became a proselyte to Christianity, and was baptized; but his attachment to astrology offended the Christians, and they excluded him from their communion. Disgusted by this treatment, he renounced Christianity, joined the Jews, and became a disciple of the rabbi Akibha. At their request, being previously instructed in the Hebrew language, he undertook, about the year 128 or 129, a new Greek version of the Hebrew scriptures. In this translation, which was very acceptable to the dispersed Jews, and which was read in their synagogues, he proposed to adhere more literally and accurately to the Hebrew text than the Septuagint; but he has been charged, both by ancient and modern writers, with perverting the original text, in order to render his version less favourable to the Christians. On the other hand, it has been alleged in favour of its accuracy and fidelity, that it was not only adopted by the Jews in their synagogues, but mentioned with approbation by many Christian writers, and frequently cited by the Christian fathers, instead of the Hebrew text, which few of them were capable of reading. This version was corrected and improved by Aquila, in a second edition; the public use of which was prohibited, as some have thought, in Justinian's Novella 146, under the title of *Δεσπερσιον*: but others have supposed, with greater probability, that this prohibition refers to a distinct work, framed by Aquila, from the instructions of his master Akibha; and containing the traditional institutions of the Jews. Of Aquila's version, some few fragments only are extant. See HEXAPLA.

Eusebius Eccl. Hist. l. v. c. 8. p. 173. Cave, Hist. Lat. vol. 1. p. 54. Fabr. Bib. Græc. l. iii. c. 12. t. ii. p. 332, &c.

AQUILA and PRISCILLA were natives of Pontus, and converted to the Christian faith by the apostle Paul. They lived at Corinth, being obliged to quit Rome and remove thither by the edict of Claudius, which banished all Jews from that city; and here Paul lodged with them. When the apostle left this city, Aquila and Priscilla accompanied him to Ephesus, A. D. 56, where they exposed their own lives to danger for preserving him. When the apostle wrote his epistle to the Romans, A. D. 58, they were at Rome, as he distinguishes them in this epistle by his salutations. We find them again at Ephesus, when St. Paul wrote his second epistle to Timothy, A. D. 61., but what became of them afterwards is not known. These early converts were tent-makers; and as they had, probably, a considerable number of servants in their house, who were instructed by them in the Christian faith, they had, by means of these, "a church in their house," wherever they settled. Acts, xxvii. 2. &c. Rom. xvi. 4. 2 Tim. iv. 19. The Greeks call Aquila, bishop and apostle, and honour him July 12. The festival of Aquila and Priscilla is placed, in the Roman calendar, July 8.

AQUILA, FRANCESCO FARABONE, an engraver of some eminence, who flourished from 1691 to 1722, was born at Palermo, but chiefly resided at Rome. His engravings are numerous, and many of them esteemed. His style of engraving, in general, is rather neater than that of Pietro, but much inferior in drawing and expression. Strutt.

AQUILA, PIETRO, an eminent engraver, was born at Palermo, and flourished about the year 1696, and resided at Rome. As a designer and painter, he stands high in the estimation of the curious; but he is more generally, and perhaps more deservedly known, as an engraver. He drew admirably, and etched in a bold free manner, finishing his lights and harmonizing his shadows with small dots. His general faults are want of effect from scattering his lights, and what by the artist is called "manner" in his drawing. In all his works he manifests much scientific knowledge. Strutt.

AQUILÆ Arbor, in Botany, a name given by some authors, to the tree whose wood is the *agallochum*, or lignum aloes of the shops.

AQUILANO, SERAFINO, in Biography, so called from Aquila in Abruzzo, the place of his nativity, was born in 1466; and obtained great reputation as an "improvvisatori," or extemporaneous maker of verses, which he recited with enthusiasm, and accompanied with the strains of his lute. In consequence of his performances in this way, he was patronized by many Italian princes; and his written poems also gained considerable applause. A collection of his sonnets, eclogues, epistles, &c. was printed at Rome in 1503, 8vo. The sonnets have obtained the highest reputation, and some have preferred them even to those of Petrarch; but the works of Serafino have now sunk into oblivion. He died at Rome in 1500. Nouv. Dict. Hist.

AQUILANUS, SEBASTIANUS, supposed to have taken his name from Aquila, the place of his birth, was professor of medicine at Padua, in the latter part of the fifteenth century. He is one of the early writers on the venereal disease, his account of which "De Morbo Gallico," dedicated to Lewis de Gonzaga, bishop of Mantua, was published, Alruic supposes, in 1489. It now stands first in Lufinus's collection of writings on the subject. He was acquainted with the use of mercury in the cure of the disease, and cautions us against employing it in weak and debilitated habits. His work passed through several editions. He also wrote "Questio de febre sanguinea,"

first printed at Basil, in 1537. Alruic de morbo Gallico, p. 578, and Haller's Bib. Med. Pract.

AQUILARIA, in Botany, from *Aquila*, an eagle, a large tree affecting a lofty situation. Lin. gen. Schreb. 1753. Juss. 439. Cavanill. Diff. 7. p. 377. t. 224. *Alcesylva*, Loureiro Cochinch. 274. Class, *decandria monogynia*. Gen. char. Cal. perianth. one-leaved, permanent; tube, bell-shaped; limb, five-cleft; clefts ovate, acute, flat, spreading. Cor. none; nectary one-leaved, pitcher-shaped, of the length of the tube of the calyx, half five cleft; clefts bifid, obtuse. Stam. filaments ten, alternating with the clefts of the nectary; anthers oblong, versatile. Pist. germ ovate superior; style none; stigma simple. Per. capsule on a very short pedicel, obovate, woody, two-celled, two-valved; with the partition contrary, and bipartite. Seeds solitary, oblong.

Ess. gen. char. Cal. five-cleft. Cor. none; nect. pitcher-shaped, half five-cleft; clefts bifid; capsule superior, woody, two-celled, two valved. Seeds, solitary.

Species, 1. *Aquilaria ovata*; leaves alternate, ovate, mucronate. This is a large tree covered with greyish bark. Its leaves are entire, smooth, veined, about eight inches long, and stand on short hairy footstalks. The flowers terminate the branches, on many-flowered peduncles. A native of the mountains of Malacca and Cochin-China. The wood of this tree has been long used as a perfume; and was formerly an article of the materia medica, under the name of *agallochum*, lignum aloes, or aloes wood. This wood in its natural state is white and inodorous. That which possesses the peculiar *aroma* for which it is valued, is supposed to be the consequence of a diseased process in the tree, causing the oleaginous particles to stagnate and congregate into a resin, in the inner parts of the trunk and branches; by which the natural appearance of the wood is altered, so as to become of a darker colour, and of a fragrant smell. At length the tree dies, and when split, the resinous part is taken out. The perfumes which this wood affords, are highly esteemed by the oriental nations; and from the bark of the tree is made the common paper which the Cochin-Chinese use for writing; in the same manner the Japanese make use of the bark of a species of mulberry (*morus papyrifera*). This perfume is said to be useful in vertigo and palsy: given in the form of powder, it is recommended to restrain vomitings and alvine fluxes. To us, however, it seems to contain little else than that camphoraceous matter common to many other vegetable substances. From its bitter taste, it has the name of aloes, although no otherwise allied to it.

AQUILARIA, in Ancient Geography, *Lowbareab*, a town of Africa, east-north-east of Nisua, or Seedy Doude, and south-west of the promontory of Mercury. In this place, says Cæsar (De Bell. Civil. l. ii. 21.), Cæsar disembarked his troops, which were afterwards cut in pieces by Sabura. Many fragments of antiquities are still extant in this place. Shaw's Trav. p. 88.

AQUILEGIA, in Botany, also called *Aquilina* (from *Aquila*, an eagle; the nectaries being fancied to resemble an eagle's claws), the plant named columbine, from a supposed resemblance the same parts of the flower bear to the head of a pigeon (*columba*). Lin. gen. 684. Schreb. 934. Juss. 234. Gært. t. 118. Class, *polyandria pentagynia*. Nat. order, *multistigæ, ranunculaceæ*, Juss. Gen. char. Cal. none. Cor. petals five, lanceolate-ovate, flat, spreading, equal; nectaries five, equal, alternate with the petals, horned, gradually broader upwards, with an oblique mouth, attached to the receptacle; each produced below into a long attenuated tube, with an obtuse top. Stam. filaments thirty or forty, subulate, the outer ones shorter; anthers oblong, erect, the height of the nectaries. Pist. germs five, ovate-oblong, ending in subulate

ulate styles, longer than the stamens; stigmas erect, simple; chaffs ten, wrinkled, short, separate, involving the germs. *Per.* capsules five, distinct, cylindric, parallel, straight, acuminate, one-valved, gaping from the tops inward. *Seeds* very many, ovate, keeled, annexed to the gaping future.

Ess. gen. char. *Cal.* none; petals five; nectaries five, horned between the petals. *Capsf.* five, distinct.

Species, 1. *A. viscosa*; clammy columbine; stem almost naked, with viscid hairs, and one or two flowers; leaves subtrilobate. It rises about a foot high, covered with glutinous hairs. Radical leaves palmate, three-lobed; stem leaves commonly one, sometimes two, ternate; peduncles one-flowered. A native of the south of France. 2. *A. vulgari*; common columbine. It grows three feet high, producing its flowers, which are blue, from the tops of its naked branches. The lower leaves are petiolate, biternate, smooth, glaucous underneath; the upper digitate. This plant grows wild in England, and in most parts of Europe; and varies much not only in the colour of its flowers, but in the number of its pistils and nectaries. The varieties to be found in gardens, are α . single garden columbine; β . double-flowered columbine; γ . double inverted columbine; δ . rose columbine; ϵ . *A. degener virescens* of Ray, Parkinson, &c.; ζ . Harry columbine; η . Siberian columbine. The common columbine has been esteemed for its medicinal virtues; and for this purpose every part of the plant has been used: but judging from its sensible qualities, there seems little or no foundation for its supposed medical properties, although Linnæus has affirmed that children have lost their lives by an over dose of it. 3. *A. alpina*; Alpine columbine; nectaries straight, shorter than the lanceolate petal. It has been doubted by some botanists, whether or not this is a variety of the *A. vulgari*, from which it differs in having larger flowers, though its stem and leaves are smaller than those of the common columbine. A native of the Alps, and also said to have been found in Westmoreland; cultivated by Miller, in 1731. Biennial. 4. *A. Canadensis*; Canadian columbine; nectaries straight; stamens longer than the corolla; root perennial; stems very slender, reddish; lower leaves biternate, irregularly divided, the extreme lobes blunt; the upper lobes simply ternate, toothed, or perfectly entire; the uppermost simple, lanceolate, acuminate; the corollas yellow within and red on the outside. A native of the northern parts of America. Miller, fig. t. 47. Introduced here by Mr. John Tradescant, sen. before the year 1640. 5. *A. viridiflora*; green-flowered columbine; nectaries straight, thickened, and a little bent at the tip; stamens nearly equal to the corolla; root perennial; stems a foot high or more, slightly angular, villose; petals pale green, wrinkled, shorter than the borders of the nectaries; which are of a greenish yellow within, and brownish on the outside; stamens only half the length of the corolla; styles longer than the corolla. A native of Siberia, where it was found by Pallas.

Propagation and culture. These plants are all raised by sowing the seeds, or parting the old roots, but the former is chiefly practised; for the old roots are very apt to degenerate, and produce plain flowers. The seeds should be sown in August or September, in a nursery-bed. The spring following the plants will appear, when they should be constantly cleared from weeds, and occasionally refreshed with water. Towards the latter end of May, these plants will be strong enough to transplant into a bed of good fresh earth; and in the following autumn, the roots should be carefully taken up and planted in the borders of the flower-garden, where they will flower the succeeding spring. To prevent the

plants from degenerating, the flower stem should be cut off as the flowers begin to wither. In order to keep up a succession of good flowers, fresh seeds should be sown every year, observing, not to sow those that are produced from plain flowers. See Miller's Dict. by Martyn.

AQUILEIA, in *Ancient Geography*, *Aquilea*, an ancient and a large city of Italy, situate on the sea coast at the entrance of the Sinus Tergetinus, or gulf of Trieste, was built, according to Strabo (l. v.), by the Romans, in order to restrain the barbarians; and a Roman colony was conducted thither between the first and second Macedonian wars. It was washed, says Pliny (H. N. l. iii. c. 18.), by the two rivers Natifo and Turrus. It was augmented, according to Livy (l. xliii. c. 17.), by 1500 families, by a decree of the senate; and afterwards, as Herodian (l. vii. c. 11) informs us, became a celebrated emporium. Julian ascribes its name to the augury of an eagle (*aquila*) at the time of building it: Vossius deduces it from the abundance of its waters, as if it were "Aquilegia;" but the appellation was more probably derived from aquila, the eagle, which was the standard of the Romans, who had long encamped in this place. Strabo (ubi supra) says, that the harbour, at the mouth of the Natifo, was at the distance of 60 stadia from the city, so that ships of burden were towed up the river. This city was of such importance, that it was one of the first places which the partisans of Vespasian took possession of A. D. 69. In the year 166, the emperors Marcus Aurelius and Verus wintered there, previously to their taking the field against the Marcomanni; who, having defeated Vindex, the prætorian prefect, in 170, entered Italy, and approached Aquileia. In 278, it was besieged by the troops of Maximin, who demolished its suburbs and beautiful vineyards, and employed the timber of the buildings, in the engines and towers with which the city was on every side assaulted. It was defended, however, by the invincible constancy of the citizens, and the army of Maximin was repulsed in repeated attacks: his machines were destroyed by showers of artificial fire; and the generous enthusiasm of the Aquileians was exalted into a confidence of success by the opinion that Belenus, their tutelary deity, combated in person in the preservation of his distressed worshippers. The Celtic deity, supposed to be Apollo, received, under that name, the thanks of the senate; and a temple was likewise erected to Venus the bald, in honour of the women of Aquileia, who had parted with their hair to make ropes for the military engines. In 452, Attila invaded Italy, and besieged Aquileia with an innumerable host of barbarians. On this occasion, the walls of the city were assaulted by a formidable train of battering rams, moveable turrets, and engines that threw stones, darts, and fire; and the monarch of the Huns employed the forcible impulse of hope, fear, emulation, and interest, to subvert this only barrier which delayed his conquest of Italy. Aquileia was, at that period, one of the richest, the most populous, and the strongest of the maritime cities of the Adriatic coast. After an ineffectual siege of three months, Attila was compelled, by the want of provisions, and the clamours of his army, to relinquish the enterprise, and to issue orders for this purpose; but as he rode round the walls, pensive, angry, and disappointed, he observed a stork preparing to leave her nest in one of the towers, and to fly with her infant family towards the country. He seized, with the ready penetration of a statesman, this trifling incident which chance had offered to superstition, and exclaimed, in a loud and cheerful tone, that such a domestic bird, so constantly attached to human society, would never have abandoned her ancient seats, unless those towers had been devoted!

devoted to impending ruin and solitude. The favourable omen inspired an assurance of victory; the siege was renewed and prosecuted with fresh vigour; a large breach was made in the part of the wall from whence the flock had taken her flight; the Huns mounted to the assault with irresistible fury; and the succeeding generations could scarcely discover the ruins of Aquileia. Gibbon's Hist. vol. vi. p. 122—124.

This place, formerly so rich and flourishing, is now known only by its ruins; and is reduced into a mean village, whence the patriarch of Aquileia derives his title: but as the territory of Aquileia belonged to the house of Austria, this house, and also the Venetians, pretended to nominate the patriarch. However, in 1751, the pope suppressed this patriarchate, and erected Udine, where the patriarch had used to reside, into an archbishopric for the Venetians, and Gorizia, or Goritz, a town of Carniola, into an archbishopric for the house of Austria. Aquileia is distant 18 miles S. S. W. from Goritz, and 20 S. from Friuli. N. lat. 45° 55'. E. long. 13° 30'.

AQUILEIA, *Aquapendente*, a small town of Italy, in Etruria, S. E. of Florentia. The name of *Aquileia* has been also sometimes applied to Forum Julii (Civitas del Friuli), the more recent capital of the Venetian province.

AQUILICIA, in *Botany*. See LEEA.

AQUILICIUM, or AQUÆLICUM, in *Antiquity*, a sacrifice celebrated among the Romans, in time of excessive droughts, to obtain rain of the gods.

Danet calls this *aquiliciana*. The priests who officiated at it were denominated *aquilices*, *quia aquam eliciebant*, because they brought down water: but where he finds this new order of priests, he does not tell us.

AQUILIFER, from *aquila*, eagle, and *fero*, I bear, among the Romans, an ensign-bearer, who carried the standard on which the eagle was represented.

AQUILINE, something belonging to an eagle. Hence, aquiline nose denotes an hooked nose, or such as is like the beak of an eagle; called also a hawk's nose.

AQUILO, is used by Vitruvius for the north-east wind; or that which blows at 45° from the north towards the east point of the horizon.

The poets gave the name *aquilo* to a stormy wind dreaded by the mariners.

AQUILONDA, in *Geography*, a large lake of Africa, in Ethiopia, at the foot of the mountains of the sun, on the confines of Congo and Angola.

AQUILONIA, in *Ancient Geography*, a town of Italy, in Apulia, situate in the road from Beneventum to Venusia. It belonged to the Samnites. This is also the name of another town in Apulia, in the road from Beneventum to Canusium, between Æquus Tullicus to the south-west, and Æce to the north-east.

AQUILUS, among the *Ancients*, a dark or dusky colour, approaching to black.

Hence some of the heathen gods were called *dii aquili*, q. d. *nigri*.

AQUIMINARIUM, in *Antiquity*, a kind of lustral vessel wherein the Romans carried their holy water for expiation, and other religious offices.

AQUINAS, THOMAS, in *Biography*, a famous scholastic divine, a descendant of the illustrious family of Aquino in the Terra di Lavoro, in Italy, was born at Aquino in the year 1224. He was sent, at five years of age, for education to Mount Cassino, and from thence he was removed to the university of Naples. Here he acquired that strong predilection in favour of a retired and studious life, which in-

duced him to enter himself, without the knowledge of his parents, among the Dominicans, in the order of the preaching friars. His mother was peculiarly solicitous to divert his design, and wished to obtain an interview with him for this purpose; but the monks were as anxious to retain him; and in order to prevent the effect of his mother's persuasion, removed him from one place to another, that she might have no opportunity of seeing him. At length, whilst they were conducting him to Paris, her other sons seized him and conveyed him to her castle, where he was confined for two years. Notwithstanding all his mother's importunities, his purpose was fixed; and for the accomplishment of it, he let himself from a window by night; and aided by his Dominican brethren, he escaped to Naples. In the year 1244, he was conducted by the master of the Teutonic order to Paris; and after some stay there, he removed to Cologne, and became a disciple of the famous Albert. Under this eminent preceptor, he was assiduous in his application, and made great attainments. His science, however, and apparent stupidity, induced his fellow-students to call him by the contemptuous appellation of the "dumb ox;" but Albert, more penetrating than they, said, "this ox, if he begin to bellow, will fill the whole world with his roaring." Accompanying Albert to Paris in 1246, he remained as a student in that university till 1248. At length Aquinas, having made himself master of the dialectics, philosophy, and theology of the age, became, at 24, an eminent teacher at Paris; and in 1255, obtained the degree of doctor in divinity. Such was his distinguished reputation, that he was honoured by the peculiar attention of princes and of popes. On one occasion, as he was dining with Louis IX. of France, called St. Louis, his thoughts were busily employed on the objections of the New Manichæans against the orthodox faith, and striking the table with his hand, after musing a long time in science, he suddenly exclaimed, "this is a decisive answer to the Manichæans." Upon a visit to Rome, whilst he was in the closet of pope Innocent IV., an officer brought in a bag of money, procured by the sale of absolutions and indulgences: "You see, young man," said the pope, "the age of the church is past, in which she said, *silver and gold have I none*:" Aquinas, replied, "True, holy father; but the age is also past, in which she could say to a paralytic, *rise up and walk*." In 1263, he returned to Italy, and was appointed rector of his order in the Roman province; and he continued to distinguish himself as a public preceptor in scholastic theology in several of the chief universities of that country. He was offered the archbishopric of Naples by pope Clement IV., but declined accepting a charge so weighty; and when the university of Paris, at a general chapter of the order held at Florence in 1272, demanded his return, he was detained by Charles, king of the Sicilies, and appointed professor of theology at Naples, with a monthly allowance of an ounce of gold as his pension. Being summoned to a general council held at Lyons in 1274, in order to present a book which he had written by order of pope Urban IV. for refuting the errors of the Greek church, he was seized, in his way through Campania, with a violent disorder; and died in the monastery of Fossa Nova, in the diocese of Terracina, in the year 1274. After his decease, the whole western world began to load him with honours. The Dominican fraternity removed his body to Toulouse; pope John XXII. canonized him; Pius V. gave him the title of "The fifth doctor of the church;" by others he was denominated "the angel of the schools," "the eagle of divines," and "the universal and angelic doctor;" and the

the vulgar believed that many miracles were wrought at his tomb; and it was said that the soul of Augustine had passed into Thomas Aquinas. His writings were held in the highest estimation; and his name was assumed, in the next century, by a sect, who, under the appellation of Thomists, long occupied the field of controversy with the Scotists, followers of Duns Scotus, in various metaphysical and theological questions.

Notwithstanding all the extravagant praises and honours which were lavishly bestowed on Thomas Aquinas, it is certain, that his learning was almost wholly confined to scholastic theology, and that he was so little conversant with elegant and liberal studies as not to be even able to read the Greek language. For all his knowledge of the Peripatetic philosophy, which he so liberally blended with theology, he was indebted to the defective translations of Aristotle, which were supplied by the Arabians; but he obtained from some unknown person a more accurate version of his philosophical writings. Adopting the general ideas of the age, that theology is best defended by the weapons of logic and metaphysics, he mixed the subtleties of Aristotle with the language of scripture and of the Christian fathers; and, after the manner of the Arabians, framed abstruse questions without end upon various topics of speculative theology. Upon the whole, his talents and industry, which under better direction might have been usefully employed, were misapplied to subtleties, which tending neither to enlighten the understanding nor to improve the heart, must be pronounced altogether useless. His writings are numerous: but the most celebrated are his "Summa Theologiæ," or summary of theology, which was received with great applause, and used as a text book of high authority in the instruction of youth; of this the second section, treating of morals, may be read with advantage; and his "Commentaries upon the works of Aristotle." A collection of his works was published, in seventeen folio volumes, at Venice, in 1490; at Nuremberg, in 1496; at Rome, in 1570; at Venice, in 1594; and at Antwerp, in 1612. The "Summa Theologiæ," has separately passed through several editions, as at Cologne, in 1604; Antwerp, 1624; Paris, 1638. But as neither the matter nor the style of the angelic doctor is much suited to modern taste, his writings have sunk into neglect and oblivion. Lord Herbert, in his life of Henry VIII., says, that one of the chief reasons that induced him to write against Luther, was his having spoken contemptuously of Aquinas. Cave. Hist. Lit. vol. ii. p. 306, &c. Brucker's Hist. Phil. by Enfield, vol. ii. p. 372, &c. Nouv. Dict. Histor.

AQUINO, PHILIP, a learned Jew, was converted to the Christian faith, and baptized at Aquino his native place, whence he derived his name. The clergy of France allowed him a pension. Such was his knowledge of the Hebrew language, that Le Jay entrusted him with the charge of printing and correcting the Hebrew and Chaldee texts of his polyglot bible. He was the author of several works; but the principal was his "Dictionarium Hebræo Chaldæo-Thalmudico-Rabbinicum," printed in folio, at Paris, in 1629. His son, Lewis Aquino, was also very learned in the oriental languages, and has left several rabbinical works. His grandson, Antony Aquino, was first physician to Louis XIV. Nouv. Dict. Histor.

AQUINO, *Aquinum*, in *Geography*, a town of Italy, in the kingdom of Naples and territory of Lavora; thirteen miles S. S. E. from Sora. It was the birth-place of Juvenal and of Thomas Aquinas. It was formerly a large municipal town, and a Roman colony; but the emperor Con-

rade ruined it; and it is now reduced to about thirteen houses. There are some remains of a theatre and amphitheatre, which indicate its former grandeur. N. lat. 41° 32'. E. long. 14° 30'.

AQUIQUI, in *Zoology*, the name of a particular species of monkey, called by the people of Brasil, the king monkey, as being much larger than all the other monkeys. It is the *SIMIA Beetzbuli* of Linnæus.

AQUITANI, in *Ancient History*, a people of Gaul, situated between the Garonne and the Pyrenees. Cæsar distinguishes the Aquitani from the Celtæ or Gauls; and, in reality, they were a different nation, and derived their origin from Spain. They were distributed in various districts; but that which preserved the name, was situated at the foot of the Pyrenees, where are now found Bearn and the diocese of Auch. The Aquitani were rich, as they possessed many mines, and an extensive commerce both by sea and land; hence they became corrupt and effeminate; and in this state the Romans found them; and though they made many efforts for resisting the attacks of these conquerors, they were at last compelled to submit in common with the other Gauls.

AQUITANIA, *Gallia Aquitanica*, or *Provincia Aquitanica*, in *Ancient Geography*, a considerable province of Transalpine Gaul, *Gallia Comata*, or Gaul properly so called. Some have supposed that it derives its name from the abundance of waters which the Romans found in this country. Aquitania, in the time of Julius Cæsar, was bounded by the Pyrenees and the Garumna or Garonne: Augustus extended it to the Liger or Loire. From his time it comprehended two provinces, known afterwards by the names of Aquitania Prima and Secunda; to which, in the time of Honorius, was added a third province, which had formerly been denominated *Novempopulania*. *Aquitania Prima* was bounded on the north by the Aureliani; on the east, by the Senones, Ædui, and Segusiáni, the Helvii, and the Volcæ Arecomici; on the south by the Volcæ Arecomici, the Umbranici, and the Tolosates; and on the west, by the Nitobriges, the Petroconi, and the Picinnes. It extended about 84 leagues from north to south, and in its greatest breadth about forty. Its chief city was Avaricum, afterwards Bituriges, and now Bourges. *Aquitania Secunda*, situate towards the sea, had on the north the river Liger; on the east, the Bituriges, Lemovices, and Cadurei; on the south, the Vesales, and Cecosates; and on the west, the ocean. It comprehended the Meduli on the left of the Garumna, towards its mouth. Its length was sixty-three leagues, and its greatest breadth forty. Its metropolis was B. rdigala, now Bourdeaux. *Aquitania Tertia*, or *Novempopulania*, was bounded on the north by the Bituriges Vivisci; on the east by the Nitobriges and Volcæ Tectosages; on the south, by the Pyrenees; and on the west, by the sea. It was about forty leagues long and as many broad. The first two provinces, viz. Aquitania Prima and Secunda, were conquered by Cæsar; the third by his lieutenants. When the emperor Honorius was under a necessity of surrendering to the Visigoths that part of Gallia Narbonensis, which was afterwards called Septimania, they soon took possession of the three provinces of Aquitania, and retained them till the time of Clovis, A. D. 486. Aquitania, after having undergone many revolutions, was erected into a kingdom in 778, by Charlemagne, and afterwards reduced into a dukedom by Charles the Bald. Aquitania, or Aquitaine, in later times, has been included between the Loire, the ocean, and the Pyrenees, and comprehended Guienne and Gascony.

AQUIZEBÁ,

AQUIZEBA, in *Geography*, a river of Spain, which runs into the Oris, below Tolosa, in Guipuscoa.

AQUISA, in *Geography*, a port on the fourth side of the island of Candia. N. lat. $35^{\circ} 3'$. E. long. $24^{\circ} 55'$.

AQUULA, the name of a disorder of the eyes, called also *hydatis*.

AR. See AAR.

AR, called also *Arcopolis*, *Ariel* of Moab, and *Rabbath-Moab*, in *Scripture Geography*, the capital of the Moabites, on one side of the river Arnon, opposite to *Aroer* on the other, in Arabia Petraea. St. Jerom says, that this city was destroyed by an earthquake, when he was young.

ARA *thuribuli*, the *Star of incense*, in *Astronomy*, a southern constellation, not visible in our hemisphere, consisting, according to Ptolemy, of seven stars; and according to Sharp's Catalogue, annexed to that of Mr. Flamsteed, of nine stars.

ARA, *Cape*, in *Geography*, anciently *Neptunium promontorium*, is the most southern cape of Arabia Felix, forming with the coast of Ajan, in Africa, the straights of Babel-mandel.

ARA *Amoris*, in *Ancient Geography*, a cape of Ethiopia, upon the Arabian gulph, according to Ptolemy.

ARA *Casaris*, *Arfago*, a place of Italy in Insubria, ten miles north of Melodunum.

ARA *Flavia*, a colony of Germany, noticed on a medal of Domitian.

ARA *Jovis Montani*, a place near the isthmus of the Thracian Chersonesus, between Pteloc and Leucæ-Acté.

ARA *Jovis Panomphæi*, a place in the Troade, between the Sigæan and Rhætian promontories.

ARA *Lugdunensis*, an altar consecrated to Augustus by sixty cities of Gaul, in the year of Rome 742, upon the point of land formed by the confluence of the Rhone and Saone; called by the writers of the middle age *Attanacum*, now the point of Annai. Dion Cassius informs us, that in his time, two centuries after Augustus, the altar, and the honours rendered to this emperor, subsisted. Juvenal mentions it in his first satire, v. 44.

ARA *Palladis*, an island of the Arabian gulph, mentioned by Ptolemy.

ARA *Tutila*, an ancient city on the eastern side of the island of Corfica, according to Ptolemy.

ARA *Ubiorum*, *Gots-berg*, a place of Gaul, in Germania Secunda, now occupied either by Cologne or Bonn. In this place the Roman Legion, called *prima legio*, was encamped.

ARA *parva*, the *little altar*, a denomination in the *Ancient Surgery*, given to an elegant kind of bandage, said to have been invented by Sosthratus.

ARA, in *Geography*, a river of Spain, which joins the Cinca at Ainsa in Arragon.

ARA, in *Ichthyology*, a name by which the Linnæan species of SCOMBER, *Trachurus*, has been called by Kæmpf. jap. i. pl. ii. fig. 5. Vide Donovan. Brit. Fishes.

ARA, in *Ornithology*, a generic name given by Brisson, Buffon, and others, to some birds which belong, in the Linnæan arrangement, to the genus PSITTACUS; thus, for example, PSITTACUS *Macao* of Linnæus and Gmelin is called ARA *Brasiliensis* by Brisson, ARA *premier* by Fermin, and ARA *rouge* by Buffon; in like manner also, PSITTACUS *Aracanga* Linn. is ARA *Jamaicensis* of Brisson, and *Petit ARA rouge* of Buffon; PSITTACUS *ater*, Linn. ARA *noir* of Buffon; PSITTACUS *caruleus*, ARA *Jamaicensis cyano-erocca* of Brisson, &c.

ARA, is also a synonym of *Cuculus tabitius* of Gmelin, a bird that inhabits the Society Islands, and is called by the natives ARA WIREROA. Vide Cook's Voyages.

ARAB, or ARABIAN *horse*. See HORSE.

ARAB, in *Scripture Geography*, a town of Palestine, belonging to the tribe of Judah. Josh. xv. 52.

ARAB, in *Geography*, a town of Asia, in Arabia Deserta, in the country of Najed or Nedjed; one of the most ancient of this country, and perhaps of Asia.

ARABA, a town of Persia, in Segellan, between the city of this name and Candahar. Some have thought that this is the ancient town of Araspe, the capital of Draugiana.—Also a river of Persia, which serves as a nominal boundary towards Hindostan.

ARABA, in *Ancient Geography*, a city of Ethiopia, situate, according to Pliny, on the bank of the Nile.

ARABAH, in *Scripture Geography*, a town of Palestine, belonging to the tribe of Benjamin. Josh. xviii. 18.

ARABAN, in *Geography*, a small town of Asia, on the river Kabur, in Diarbekir, in the Turkish government of Urfa or Raca.

ARABANT, from *aro*, *I plough*, in *Law*, *ad curiam domini*, was a term applied to those who held by the tenure of ploughing and tilling the lord's lands within the manor.

ARABAT, in *Geography*, a small maritime town of Europe, in the eastern part of Crim Tartary, on the borders of the sea of Azof, south of Bacha-ferai, and sixty miles south-east of Perekop. In 1771, it was assaulted and taken by the Russians, under the conduct of prince Tschibaloff. Most of the besieged were put to the sword, and the rest made prisoners of war.

ARABAZARI, a town of Asiatic Turkey, in the province of Caramania, sixteen miles north-east of Alameh.

ARABEIA, or ARBELA, in *Ancient Geography*, a town of Sicily, mentioned by Silius Italicus, l. xiv. v. 271.

“Sidonios Arbela ferox, et celsus Ictas.”

Those critics who would substitute Artheia for Arbela, introduce the epithet *ferax*, denoting *fertile*, instead of *ferox*. See Sil. Ital. ed. Drakenborch. in loc.

ARAB-HISAR, in *Geography*, a town of Asiatic Turkey, in the province of Natolia, twenty-eight miles north-west of Mogla.

ARABESQUE, or MORESQUE, denotes a style of painting or of sculpture, so called from the Arabians and Moors, who employed ornaments of this kind for want of human and animal representations, which their religion prohibited their using. These ornaments are still in practice; but executed only in painting, and not in sculpture. Such are seen at the chateau of Meudon, that of Sceaux, of Chantilly, at the Menagerie, and at Trianon, painted by Audran; and, in short, at the seats of various noblemen, &c. at home and abroad. Berin, Gillot, and Vateau, likewise excelled in this species of decoration, which has furnished models for tapestry at the Gobelins and La Savonnerie, as hangings in the royal private apartments, to which this sort of ornament is adapted, and no where else. Accordingly the best architects have only made use of them in retiring rooms, or at most in small apartments, treating with contempt the bad taste of those artists, who are profuse of these chimerical and imaginary ornaments in apartments that demand gravity, instead of preferring the real and beautiful productions of nature.

Arabesque is used by Stephen Riou, esq. in his book on architecture, to denote that style of building which is vulgarly called

called *Modern Gothic*, which he also terms *Saracenic* and *Moresc*; the introduction of which he ascribes to the Moors, or, which he says is the same thing, to the Arabians or Saracens, who have expressed, he adds, in their architecture, the same taste as in their poetry, which are both falsely delicate, crowded with superfluous ornaments, and often very unnatural. This manner of building, he says, was introduced into Europe through Spain. The crusades gave the Christians an idea of *Saracenic* architecture, which they afterward imitated. Sir C. Wren distinguishes the heavy *Gothic* as *Anglo-Saxon*, the lighter as *Arabeſc*.

ARABI, *gulf of Gli*, in *Geography*, called also *Cyſis* or *Zyſis*, a small gulf on the coast of Barbary, between the coasts of Barca and those of Egypt.

ARABIA, in *Ancient and Modern Geography*, a considerable country of Asia, which, taken in its largest extent, lies between N. lat. $12^{\circ} 30'$ and $31^{\circ} 30'$, and E. long. $34^{\circ} 14'$ and $59^{\circ} 14'$, and forms one of the largest peninsulas in the world. It is bounded on the east by the Euphrates, the Persian gulf, and the bay of Ormus, on the west by Palestine, part of Syria, the isthmus of Suez, and the Red Sea, on the south by the straits of Babelmandel, and the Indian ocean, and on the north by part of Syria, Diarbekir, Irak, and Khuzestan. Its northern limits, however, are less strongly marked than the others; for in both ancient and modern times, they ascend to an angle about 100 miles to the east of Palmyra, which is not included in Arabia. In these parts, the proximity of the Euphrates to the Mediterranean forms a peninsula. Its length, estimated from the cape of Babelmandel to the extreme angle on the Euphrates, may be stated at about 1800 British miles, and its mean breadth at about 800; or from the port of Jedda to the cape of Razal-Gad, not less than 1200. Its limits, however, have been either enlarged or contracted by various geographers, according to the times in which they wrote; some having comprised under the name of Arabia, such of the neighbouring countries as might perhaps be subject to some particular tribes, and others detaching from it certain districts submitted to a foreign dominion. Accordingly the limits of the Proper Arabia reached no farther than the isthmus, extending from Ailah at the north point of the Arabian gulf to the extremity of the Persian gulf, and the borders of the territory of Cufa; which tract of land was nearly comprehended by the Greeks under the appellation of Arabia Felix: and here the Arabs have been settled almost ever since the flood. The eastern geographers assign Arabia Petræa partly to Egypt and partly to Syria; and they call Arabia Defertâ, the deserts of Syria: but as the Arabs have for many ages reduced these two provinces, the Turks and Persians now include them in Arabistan. The ancients also assigned different limits to this large peninsula. Piny extended it as far as the border of Commagène, the northern part of Syria, on account of the many Arabian colonies established there by Tigranes; and Xenophon included in it the greatest part of Mesopotamia: but, according to Ptolemy, the city of Phara, between the Elanitic and Heroopolitan gulfs, or rather a line passing a little westward of this city, near the district of Heroopolis, was its boundary on the side of Egypt. On the west, it was terminated by Palestine, part of Syria, the confines of Egypt, and the Arabian gulf; on the north, by the Euphrates, from the city of Thapsacus, near the borders of the Palmyrene, to the district of Idicara in Babylonia; on the east, by the Chaldean mountains and the Persian gulf; and on the south, by the Erythræan sea. The same situation and extent are assigned to it by Diodorus and Strabo. Whatever be deemed its extent, it may justly

be considered as a peninsula, because in the northern region it is confined between the Euphrates and the Mediterranean.

The revolutions of time have produced no change in its primitive denomination; since even in the ages bordering upon the deluge it was known by the name of Arabah; which some derive from the Hebrew אַרָב, *arab*, or *ereb*, signifying *the west*, a mixture, or *merchandise*, or *traffic*; others from Jarab, the son of Joktan, and grandson of Eber; and others again from Arabah or Abah, a district of Tehama, inhabited by Ishmael. By the Syrians and many of the orientals, it was called Arabistan; and, in our sacred books, it is sometimes denominated the land of Cush. Moses himself styles the western Arabia, Arabah, which affords a strong presumption, that its original name was derived from its situation: and when the Ishmaelites, who possessed it, gradually reduced the adjacent parts, they carried with them the appellation Arabah, and applied it to the whole peninsula. The first part of the peninsula of the Arabs was divided into Kedem and Arabah, as we learn from scripture. Kedem comprehended the Arabia Felix and Arabia Deferta of Ptolemy. Arabah corresponded to that country which was called, from Petra its metropolis, Arabia Petræa by Ptolemy; Arabia Citerior, from its situation with respect to Italy, by Pliny; and Arabia Vetus, by Stephanus and Procopius. Moses, with a geographical accuracy that defies the severity of criticism, determines the boundaries of this kingdom, when he tells us, that on the south, it reached to the sea of Suph, or the Red Sea; on the west, to Paran and Tophel; on the north, to Laban, Hatseroth, and Di Zahab, that is, to the borders of Syria; and on the east, to Kadesh-Barnea, about eleven days journey from Mount Horeb. As Arabah imports the *west*, so Kedem does the *east*: and these significations correspond to the respective situation of these countries. The first inhabitants of Arabah, or the western Arabia, were the Casluhim, descended from Mizraim, the Caphtorim, and the Horites, who occupied Mount Scir, before they were expelled from thence by Esau and his posterity. Afterwards Ishmael and his descendants settled here; and last of all, the Edomites or Idumæans. Kedem, or the eastern Arabia, was first peopled by the sons of Joktan, who are reputed the aboriginal Arabians; though, in process of time, the Ishmaelites spread themselves over this country. Some of the Cushites also gained early possession of part of it; and the children of Abraham by Keturah contributed, as sacred history informs us, to augment the number of its inhabitants.

Ptolemy seems to have been the first who divided this peninsula into Arabia Petræa, Arabia Deferta, and Arabia Felix; and since his time this division has generally prevailed.

Arabia Petræa, or the *stony*, was contiguous, on the east, to Syria and Arabia Deferta; on the west, to Egypt and the isthmus of Suez; on the north, to Palestine, the lake Asphaltites, and Cœlosyria; and on the south to Arabia Felix. This tract did not admit of much cultivation, the greatest part of it being covered with dry sands and rocks (whence its name), interspersed with some fruitful spots. Its metropolis was Petra: the other most considerable places noticed in scripture as belonging to this district were Paran, Duma, and Pithom. The principal people that inhabited it were the Ishmaelites, the Nabathæans, the Cedraï or Kedareni, and the Hagareni or Agareni. Of these the Ishmaelites were the most powerful, if they did not comprehend the whole of it. The most remarkable places in this region were the town of Kolfum or Kolzom, the wilderness of Shur, that of Sin, that of Sinai, the mounts Casius and

Sinai, Ezringaber, the promontory of Paran, Adæa, Elufi, Boltra, and Blocha. See the several articles.

Arabia Deserta was bounded on the north by the Euphrates, separating it from Mesopotamia: on the west, by Syria, Judæa, and Arabia Petræa; on the east, by Chaldæa and Babylonia, or a ridge of mountains dividing it from those countries; and on the south, by Arabia Felix, from which it was disjoined by several ranges of hills. The Cauchabeni, according to Ptolemy, inhabited that part of this province bordering upon the Euphrates, and the Batamei occupied that which lay on the confines of Syria. The Agubeni and Rhaabeni were placed more southerly towards the frontiers of Arabia Felix, and near the Persian gulf, the Oreheri. Near the Cauchabeni, on the borders of Babylonia, dwelt the Zilitæ, supposed by Bochart to have inhabited that tract in which was the country of Job; and above the Rhaabeni were the Masæi. In the interior part were the Agræi; and in the mountainous region, near Chaldæa, were situated the Marteni. The towns of this district, enumerated by Ptolemy, if such they might be called, were places of no great importance.

Arabia Felix was limited on the north by the provinces already mentioned; on the south, by the Erythrean sea; on the east and west by part of that sea, together with the Arabian and Persian gulfs; and corresponded to that tract which the oriental geographers regarded as the proper peninsula of the Arabs. Strabo says (l. xvii.) that, in his time, it was divided into five kingdoms, corresponding to the division of the proper Arabia into five provinces by the eastern writers. The principal nations noticed by the ancients in this province were the Sabæi, Gerræi, Minzæi, Atramitæ, Maranitæ, Catabani, Afcitæ, Homeritæ, Saphoritæ, Omanitæ, Saraceni, Nabathæi, Thamydeni, and Bnizomenæ. The most remarkable places were Nyfa, Arga, Badoo, Pudni, Mufa, Ocelis, Arabiæ emporium or Adæa, Mofcha or Maskat, and Atamas portus or Cadhema.

The best eastern writers have divided this peninsula into five provinces or kingdoms, namely Yaman, Hejaz, Tehama, Naid, and Yamama. The province of *Yaman* or *Yemen*, so called either from its situation to the right hand or south of the temple of Mecca, or from the verdure of its soil, extends along the Indian ocean from the straits of Babelmandel to cape Razal-Ghad or Rafalgat. It is bounded by part of the Red Sea on the west and south, and on the north by the town of Nairan, the Nagara of Ptolemy; Halj or Haljo on the sea Al Kolzom, and Oman or Sohar; and it is subdivided into several lesser provinces as Hadramaut, Shihr, Oman, Najran, and Mabra, of which Shihr alone produces the frankincense. This country has been famous, from a very remote period, for its fertility and riches, and the happiness of its climate. The principal cities known to the ancients were Mocha, Aden, Sanaa the capital of the province, and now reckoned the chief city of Arabia, Saba or Mareb, Shibam, Dhafar, and Oman or Sohar. This province, known under the appellation of Arabia Felix, called by the Greeks *most happy*, and formerly extolled for the verdure of its trees, the purity of its air, the flavour of its fruits, and the diversity and abundance of its products, manifests at present few traces of its ancient opulence; inasmuch that it is difficult to conceive how it has acquired the name of *happy*; being a country where the greater part of the land remains without culture; and, excoriated by burning heats, it is destitute of inhabitants, excepting in places remote from the sea, where the mountains afford a refuge by their shade. It may therefore be presumed, that the articles of luxury which it produces, and which polished nations have converted into wants, have given rise to the belief, that where-

ever superfluities are found, there the necessaries of life must be enjoyed in abundance; just as the vulgar imagine, that the most fortunate countries are those which produce gold, pearls, and diamonds. This province, far less fertile than either Egypt or Syria, which lie at no great distance, seems only to have usurped the title of *happy*, from a comparison with the barren and indigent tracts that surround it.

Hejaz, so called because it divides Najd from Tehama, is limited on the south by Yemen and Tehama; on the west, by the sea Al Kolzom; on the north, by the deserts of Syria; and on the east, by the province of Najd. The chief towns are Mecca, Medina, Taifu, Aidab, Yanbo, Madian, and Hejr. The soil in this province is more barren than that of Yemen, and it is so parched as to afford neither water, nor fruits, nor genial harvests; and yet superstitious credulity produces plenty, inasmuch that a province, doomed by nature to scarcity and want, is become the wealthiest and most flourishing of Arabia. It was known, in the earliest ages, under the name of the Madianite, or Arabia Petræa. It owes its opulence and celebrity to the towns of Mecca and Medina; the former having had the honour of giving birth to Mahomet; and the other boasting of having granted him an asylum, when, at the commencement of his ministry, he was obliged to retire from the sword of his persecutors. Many honourable pretensions add lustre to this province. It was here, according to report, that Abraham laid the foundations of the most ancient temple in the world; it was hither that Ishmael, on being forced to quit the paternal roof, came to seek a second country; it was hither that Moses, when a fugitive from Egypt, withdrew from the vengeance of those who wanted to punish him for having killed the Egyptian; here he married the daughter of Jethro, a prophet highly revered, who, as the Arabians relate, gave useful lessons to the leader of the Hebrews; in short, it is here that we behold the two mountains of Horeb and Sinai, where Jehovah gave laws to his people, amidst awful thunder and lightning. It is from these illustrious claims that a province, which offers to the sight only sands and rocks from whence flow bitter waters, establishes its pre-eminence, and finds resources ever new in a glorious and profitable tradition.

The province of *Tehama*, so denominated from the vehement heat of its sandy soil, and *Gaur*, from its low situation, is bounded on the west by the Red Sea, and on the other side by Hejaz and Yemen, extending almost from Mecca to Aden. The Arabian geographers have sometimes confounded this province with Yemen and Hejaz. Abulfeda mentions several towns in Tehama, which must have been undoubtedly of great antiquity, but unknown both to the Greeks and Romans. As the ground of this district is the lowest in Arabia, it abounds with springs, which are an invaluable treasure to a dry and parched region.

The province of *Najd* or *Neged*, signifying a rising country, lies between those of Yamama, Yemen, and Hejaz, and is bounded on the east by Irak. This elevated country presents to the view only rocks and deserts, from whence men and animals are totally excluded, on account of the scarcity of water, except in some few more favoured districts, where the shade of the mountains affords a defence against the scorching heat of the sun.

Yamama, called also *Arud*, from its oblique situation in respect of Yemen, is surrounded by the provinces of Najd, Tehama, Bahrein, Oman, Shihr, Hadramaut, and Saba. The chief city is Yamama, which gives name to the province; and it was anciently called Jaw or Gjava; it is particularly famous for having been the residence of Mahomet's competitor, the false prophet Moseilama.

The inland parts of Arabia, occupied by the extensive province

province or desert called *Neged*, were, till of late years, almost utterly unknown. The relations of travellers were confined to the coasts of that vast country, to which, without doubt, their peregrinations were limited. Michaelis, the celebrated professor of Gottingen, proposed to the late king of Denmark, to find five able persons to explore the territory and productions of Arabia. Of these five Danes, four dying in the journey, M. Niebuhr, who had been appointed to the geographical department, took upon him to execute the object of the expedition alone. From the relation which he published in 1772, we shall make some extracts. Of all the maps of Arabia that have hitherto been published, this learned traveller gives the preference to that of M. D'Anville, published in 1751, under the title of "Première Partie de la Carte de l'Asie, la Turquie, l'Arabie, l'Inde, & la Tartarie." He collected a great number of inscriptions and medals in Cufic characters, to which he annexes the explications given by Mr. Reiske, professor at Leipzig. Among these antiques, he presents one of bronze, on which appears the figure of the cross, with the name of a caliph and a Turkish legend. Our astonishment at this curious mixture will cease, on learning that the medal was struck in a country that was, at the same time, governed by the Greek emperors and the caliphs of Bagdad.

Arabia is divided by the inhabitants themselves into eight provinces, entirely independent on one another, viz. Yemen, on the south, towards the straits of Babelmandel, Hadramaut, on the shores of the Indian Ocean, Oman, on the south of the entrance of the Persian Gulf, Hadsjar, or Hajar, the Héjer of M. D'Anville, or Lahsa, Nedjed, or Neged, and Hedjas, or Hejaz. The territory of the Bedouins, or of the Arabs in the desert of Syria, may be reckoned a seventh province; and to this again may be added the Arabian establishments on the southern coast of Persia. See the several articles.

Of all the governments of Arabia, which is divided among numerous Imams and Sheiks, that of Yemen is the most uniform and best regulated, and an idea of the rest may be formed from that of Yemen, described by Niebuhr. The title of IMAM, denoting Vicar, that is of Mahomet, is ecclesiastical; in Arabia it is considered as synonymous with Caliph, and Emir el Mumenin, or prince of the faithful. Its antiquity is not explained, but the history of the Imams of Yemen is very modern: and though they sometimes celebrate divine service, the style of Emir, which they themselves assume on their coins, seems more proper and precise. The inferior governments are conducted by Sheiks, a term signifying old men, and rarely blended with the ecclesiastical character.

The throne of Yemen is hereditary; and the Imam, or Emir, an independent power, acknowledging no superior in spiritual or temporal affairs. He possesses the prerogative of peace and war; but cannot be called despotic, as he cannot deprive even a Jew or a Pagan of life; but the cause must be tried before the supreme tribunal of Sana, consisting of several Cadis, while he is only president. When an Emir shews a despotic disposition, he is merely dethroned. The next in rank are the Fakis, a title so lax as seemingly only to imply gentlemen. The governors of districts are called Dolas; or, if superior in birth, Walis. The Dola corresponds in some degree with the Turkish Pasha. The chief magistrate of a small town without a garrison is called Sheik; as a superior governor is sometimes called Emir, and in little villages, Hakim. The Bakateb, or comptroller, is an officer who depends on the prince, and inspects the conduct of the Dola, and the management of the revenues. In each district there is also a Cadi, who, like those in Turkey, are judges of ecclesiastical and civil affairs; and perhaps depend

on the chief Cadi at Sana, as those of Turkey do on the Mufti: but in Arabia the prince himself is the high priest. His army, in peace, was computed at 4000 infantry, and 1000 cavalry; the soldiers being, as usual in the east, without uniforms. There is no navy, and the vessels in general are very rudely constructed, those of Yemen having sails made of matting. Yemen adopted the koran in the 7th year of the Hegira. This fine province has at several times excited the ambition of Egypt, and been subjected to the Ottoman sultan. It successively became a prey to Saladin, Guri, and Solyman; but the love of liberty always triumphed in the mountains over the Ottoman arms. In 1630, Khaffem, one of the independent Sheiks, forced the Turkish Pashas to quit the country; and Ismael, his son, established this happy revolution, and took on himself the office of Imam.

The general aspect of Arabia, says a modern geographer (Mr. Pinkerton), presents a central desert of great extent, with a few fertile "oases," or isles, as in Africa; while the flourishing provinces are those situated on the shores of the sea, which supplies rain sufficient to maintain the vegetation. In Yemen there are mountains of considerable height, but chiefly barren and unwooded; while the temperature and plants form a striking contrast with those of the plains; yet the want of rivers, lakes, and perennial streams, must diffuse ideas of sterility through the Arabian landscape. In the defect of rivers strictly belonging to Arabia, the Euphrates and Tigris, which pass through Irak-Arabi, have been claimed by some geographers; and the Euphrates may be justly considered as an Arabian river. But in Arabia Proper, what are called rivers are mere torrents, which descend from the mountains during the rains, and for a short period afterwards. Such is the Aftan of Neged. The most important river is probably that which arises near Sana, and joins the Indian sea below Harjiah. The little river of Krim flows from Mahrah into the same sea, and is followed by two or three brooks in Omon, or Oman. One or two small saline lakes occur in situations encircled with hills, which prevent the escape of the water.

The chief range of mountains seems to proceed in the direction of the Red sea; towards the north, not more than 30 miles distant, and sometimes in the south about 150; a circumstance which imparts extent and fertility to Yemen. The hills of Oman seem a continuation of those on the other side of the Persian gulf; and the isles in the mouth of that gulf may be regarded as summits of that range. In the country of Segar, commonly ascribed to Hadramaut, there is a range of hills remarkable for the product of frankincense. The direction of the other ranges cannot be accurately ascertained in the imperfect geography of the country. In Arabia Petraea is the celebrated mountain of Sinai, with its two sublime summits of red granite.

The agriculture of Arabia is employed in the production of wheat, maize, "durra," or a kind of millet, barley, beans, lentiles, and rape, with the sugar cane, tobacco and cotton. Rice seems unknown in Yemen, and oats throughout Arabia: the horses being fed with barley, and the asses with beans. They also cultivate "uars," a plant which dyes yellow, and is exported in great quantities from Mocha to Oman; and "sua," used in dyeing red; likewise indigo. The wheat, in the environs of Maskat, yields little more than ten for one; and in the best cultivated districts of Yemen, 50 to one; but the durra sometimes much exceeds this ratio, yielding in the highlands 140, and in the Tehama, or plain, from 200 to 400. By their mode of sowing, and watering this grain, the inhabitants of Tehama reap

three successive crops from the same field in the same year. The plough is simple, and the pick is used instead of the spade. The principal exertion of the husbandman's industry is to water the lands from the rivulets and wells, or by conducting the rains. Barley is reaped near Sana in the middle of July; but the season depends on the situation. At Makkah, wheat and barley are sown in December, and reaped in March; but durra is sown in August, and reaped in the end of November. The Arabians pull up their ripe corn by the roots; but the green corn and grass, as forage for the cattle, are cut with the sickle. In thrashing their corn, they lay the sheaves down in a certain order, and then lead over them two oxen dragging a large stone.

The greater part of Arabia, being composed of dry barren deserts of sand, either wholly destitute of water, or furnishing scanty springs of that which is brackish, presents few objects to botanical investigation. The vegetables in such districts, exposed to the vertical sun, and refreshed merely by nightly dews, belong for the most part to the genera of aloe, mesembryanthemum, euphorbia, flapelia, and falsolia. On the western side of the Arabian desert, numerous rivulets, descending into the Red Sea, diffuse verdure; and on the mountains from which they run, vegetation is more abundant. Hither many Indian and Persian plants, distinguished for their beauty or use, have been transported in former ages, and are now found in a truly indigenous state: such is the case probably with the tamarind, the cotton tree (inferior to the Indian), the pomegranate, the banyan tree or Indian fig, the sugar cane, and many species of melons and gourds. Arabia Felix may peculiarly boast of two valuable trees, namely, the coffee (*caffæa Arabica*), found both cultivated and wild; and the amyris opobalsamum, which yields the balm of Mecca. Of the palms, Arabia possesses the date, the cocoa nut, and the great fan palm. It has also the sycamore fig, the plantain, the almond, apricot, and peach, the papaw, the bead tree, the mimosa nilotica, and sensitive, and the orange. Among its shrubs and herbaceous plants may be enumerated the ricinus, the liquorice, and the fenna, used in medicine; and the balsam, globe amaranth, the white lily, and the greater panceratium, distinguished for their beauty and fragrance.

The mineralogy of Arabia is not very important. It has no native gold, nor any silver, besides that which is mingled in the lead mines of Oman. In the northern district of Yemen, called Saade, there are some mines of iron, which is brittle. Its precious stones have been imported from Hindostan; its agates, called Mocha stones, are brought from Surat, and the best cornelians from the gulph of Cambay. Yemen, however, produces onyxes; a kind of Sardonix is found near Damar. Rock salt appears near Loheia; and in Ajemen, Niebuhr has observed pentagonal pillars of salt, with bluish alabaster, selenite, and various spars; but it does not appear that any of the gems are produced in Arabia. The pearls and spices, of which Arabia formerly boasted, were probably the products of the Indies and the coasts of Africa, whither the Egyptians went to fetch them, in order to disperse them among the nations of the west; and as it was their interest to conceal the source of their wealth, they chose rather to have it thought that they traded to Arabia, where it was impossible to penetrate far, without imminent danger of death in the sands of the deserts.

The principal riches of Arabia consist in flocks and herds, and especially those species of animals that require only succulent herbs for their nourishment. The cow here yields

but little milk; and the flesh of the ox, which like her delights in fat pastures, is insipid and juiceless. The wool and mutton of the sheep are coarse. In the mountains of Arabia Petraea is found the rock-goat. It is probable that Arabia, notwithstanding the sterility of its soil, was formerly overstocked with cattle, since that commodity formed a prime object of commerce with the neighbouring countries; nevertheless it is a well-known fact, that in all the torrid regions there is a greater consumption of fruits and vegetables than of flesh. Of all the animals of Arabia, the horse claims the pre-eminence. According to Zimmerman (*Zool. Geog.* 1777, 4to. p. 140.), this animal is found wild in the extensive deserts on the north of Hadramaut: this might have been the case in ancient times, unless it should be thought more probable that the wild horse of Tartary has passed through Persia, and has been only perfected in Arabia. The horses here are distributed into two classes, *viz.* the *Kadisebi*, or common kind, whose genealogy has not been preserved, and the *Kochlani*, or noble horses, whose breed has been ascertained for 300 years, proceeding, as their fables assert, from the stalls of Solomon. They are reared by the Bedouins in the northern deserts between Bassora, Merdin, and the frontiers of Syria; and though they are neither large nor beautiful, their race and hereditary qualities being the only objects of estimation, the preservation of their breed is carefully and authentically witnessed; and the offspring of a Kochlani stallion with an ignoble race is reputed *Kadisebi*. These will bear the greatest fatigues, and pass whole days without food, living, according to the Arabian metaphor, on air. They are said to rush on a foe with impetuosity; and it is asserted that some of them, when wounded in battle, will withdraw to a spot where their master may be secure; and if he fail, they will neigh for assistance. Accordingly their value is derived from their singular agility, an extreme docility, and an uncommon attachment to their masters. The Arabian steeds are sometimes bought at excessive rates by the English at Mocha. The duke of Newcastle asserts, that the ordinary price of an Arabian horse is 1000, 2000, or even 3000*l.*; and that the Arabs are as careful in preserving the genealogy of their horses, as princes in recording that of their families: the grooms are very exact in registering the names of the sires and dams of these animals, and some of them are of very ancient date in this species of pedigree. It is affirmed that Arabian coats are brought up with camel's milk. In this country there is also a superior breed of asses, in form and qualities approaching to the mule, and sold at high prices. Arabia, or Africa, seems to be also the native country of the camel. Niebuhr observed camels of different kinds, and he seems to have decided the question concerning the dromedary, by saying that this animal in Arabia and Egypt has always one hump only, and can otherwise be scarcely distinguished from the camel, but in being more light and speedy. The buffalo seems to be unknown in this country; and the cattle in general have a hump on the shoulder. Arabia is infested with almost all kinds of ferocious beasts, that prefer burning sands and arid mountains to humid regions: they fix their abode in the caves of the mountains, in the clefts of the rocks, or in dens which they dig for themselves. The other animals are the jackal, or chacal; the hyæna, towards the Persian gulf and the desert mountains of Arabia Petraea; numerous monkeys in the woods of Yemen; the jerboa, or rat of Pharaoh, in Neged; and there are also antelopes, and wild oxen, with wolves, foxes, and wild boars, and the large panther, called in Arabia, "nemer," and a small panther, called the "fath." The tiger seems utterly unknown, and the lion only appears beyond

yond the Euphrates. But if ferocious animals of various kinds exercise with impunity their ravages in the deserts, the mountains teem with other animals, which produce great advantages to commerce; such as the civet-cat, the bezoar goat, the musk-rat, and various others, which are divelled by nurture of their savage disposition, and inured by habit to domestic discipline.

Among the birds may be named the pheasant, common in the forells of Yemen, and the grey partridge in the plains, besides all sorts of common poultry. On the coasts of the Red Sea, the species of sea-fowls that live on fish are numerous, and in an island of this sea are pelicans; in the deserts are ostriches; and the birds of prey in Arabia are eagles, falcons, vultures, and sparrow-hawks. A bird of the thrush kind, called by Mr. Forskal, "turdus seλεύcus," is very serviceable in destroying locusts, and is thought to come annually from Khorasan. It is denominated "Samarman," or, "Samarmog." Arabia abounds with land-tortoises, which are eaten by the eastern Christians in Lent; several sorts of lizards, and also of serpents; and of the latter, the only sort that is formidable is that called "Batan," which is small and slender, and spotted with black and white; its bite is so poisonous, that it occasions instant death. The Red sea is stored with a great variety of fishes. Mr. Forskal is said to have observed more than 100 new species; some of which he could not rank among any of the known genera. The locusts are very numerous; and that species which infests Arabia is called by Mr. Forskal, "Gryllus gregarius," which he thinks to be different from the "Gryllus migratorius" of Linnæus. All the Arabians, whether living in their native country or in Persia, Syria, and Africa, are accuomed to eat locusts; and they ascribe a peculiar delicacy to the red sort, which they esteem fatter and more succulent than any of the others. The swarms of these insects darken the air, and at a distance appear like clouds of smoke. In flying, their noise is tremendous, and resembles that of a water-fall. When such a swarm falls upon a field, it is soon consumed and despoiled of its verdure. A small insect, named "Arda," (the "Termes fatale" of Linnæus,) is another scourge of Arabia, as well as of hot countries in general. These live and work together like ants, and are very destructive to trees. The inhabitants of the country, for preserving their gardens from the depredation of these mischievous insects, surround their trees with sheep's dung, the smell of which the arda cannot endure. A species of "scelopendra" torments the Arabians, and affects those on whom it fixes with burning pains. Among the "Tenebriones," there is one species which the women of Arabia and Turkey dig out of the filth of the garden; and they swallow three of them fried in butter every morning and evening, in order to acquire that plumpness which is deemed in the east a beauty.

The Red Sea is full of marine insects; and Mr. Forskal, from a number of observations, inferred, that an immense number of these animals contribute to produce the retulence perceived at night in sea-water. The shells of the Arabic gulf are numerous, and some of them belong to rare species. The most beautiful is a "pinna," with superb colours. The Arabic gulf abounds with immense banks of coral; so that most of the houses in the Tehama are built of coral rock. These rocks, rising sometimes ten fathoms above the surface of the sea, are soft under the water; and as they are easily wrought, they are preferred to all other stones for the purposes of building.

In the whole peninsula of Arabia the year has only two distinct seasons, the dry and the rainy. The latter commences in the province of Yemen, about the middle of

June, and terminates in September; but the sky is rarely covered with clouds for 24 hours at a time. At Maskat, and in the eastern mountains, it lasts from the middle of November to the middle of February; and in Oman and Hadramaut, from the middle of February to the middle of April. These regular rains are very beneficial, as they render the valleys lying among the mountains fertile and delightful. In the plains of Yemen rain is sometimes uncommon for a whole year; and in the dry season, a cloud is scarcely to be seen. The heat is no less subject to variation, than the wet and cold. At Sana, in the mountains, it has never exceeded 85° from the 18th to the 29th of July; whereas in Tehama, which is lower than Yemen, it has stood at 98° from the 6th to the 20th of August. It sometimes, though rarely, freezes at Sana, while at Loheia the thermometer is at 86°. Hence the inhabitants of Yemen live as if they belonged to different climates; and even at a small distance are found fruits and animals which might indicate remote countries. The wind from the sea is generally moist, that from the interior deserts dry; and in the northern deserts are chiefly perceived the disastrous effects of the burning wind called Sam, Simam, or Samiel. The Arabs discern its approach by an uncommon redness in the air; and to defend themselves from the imminent danger, they throw themselves flat on the earth. The people of the isle of Chaudli and of the Mareidin, have nothing to dread from this deadly wind; sleeping in the open air from the 18th of May to October, without feeling any inconvenience.

Although the Arabians are ingenious and diligent, their manufactures are of little consequence. Even in Yemen, the works in gold and silver, and the coin itself, are produced by Jewish manufacturers. In the whole country of Arabia there are neither wind-mills nor water-mills. The mulkets that are made in the country, warlike as the Arabians were formerly deemed, are mere matchlocks of mean fabric. At Mocha there is one glass-house; and in Yemen there are some linen manufactures, chiefly coarse. Among the chief vegetable products of Arabia, Niebuhr reckons aloes, myrrh, frankincense of an inferior kind, and coffee; and also cocoa trees, pomegranates, dates, apricots, peaches, almonds, filberts, pears, figs, and tamarinds. But the best frankincense, with spikenards, cinnamon, cassia, cardamums, and pepper, are imported from Hindostan. The orange trees are brought from Portugal, and the lemon from Italy; the mangoften and cocoa, with several others, are imported from Hindostan.

The commerce of Arabia was formerly very considerable, as its ports facilitated a communication between the eastern and western world. But since the Portuguese opened a passage to India by the Cape of Good Hope, its intercourse with Hindostan has very much declined.

The chief articles exported from Yemen are coffee, aloes, and myrrh (of which the best is brought from Abyssinia), oliban (or an inferior kind of frankincense), fenna, ivory, and gold from Abyssinia. The European imports are iron, steel, cannons, lead, tin, cochineal, mirrors, knives, sabres, cut glass, and false pearls. Niebuhr regards aloes and frankincense (the latter chiefly from Hadramaut) as the only native articles of commerce, before coffee came into use. The principal trading ports are Jidda or Gedda, the harbour of Mecca, Loheia, and Beit el Fakih, carrying on a considerable trade in coffee; Gezan, trading in fenna and coffee; Hodeida, Mocha, Aden, Maskat, Sur or Seger, Faitach and Datar, on the Arabian ocean; Bahrin and El Katif, in the gulf of Bassora; Bassora, &c. See the articles.

Besides the maritime commerce, a considerable traffic is carried on by land by means of the caravans of Aleppo and

Suez, which bring hither velvets, fattins, armoilins, and all sorts of rich stuff; saffron, mercury, vermillion, &c.; and take in return, partly the natural products of the country, partly manufactures, and partly the foreign merchandizes that have been brought from the Indies, from Aleppo, and from Europe. Niebuhr observes, that the trade on the coast of the Red Sea cannot be advantageous to any nation that has not settlements in India. The Arabians, he says, make no use of the productions of Europe. It will be, therefore, necessary to supply them with India goods, and to take coffee in return, which can be bought cheaper from ships which take it in merely to avoid returning empty. There is, however, a great quantity of iron sold in Arabia, which the English purchase chiefly from the Danes. This ingenious traveller cautions strangers against the knavery of the Mahometan brokers; and he recommends their applying rather to the Banians, among whom are many very considerable merchants, who are very honest men. In his description of the extensive country of Neged, he informs us, that the Arabs, who inhabit it, are not more inhospitable towards strangers than the rest of their nation, nor less hospitable; but as this country contains many little independent states, each governed by a Sheik, it may be easily conceived that travellers here find little security. Each prince endeavours to get from them all he can; and as they are commonly at war with each other, strangers are despoiled by the first, that his neighbours may not be the richer. Hence opulent foreign merchants cannot hazard their caravans in these regions; and those that come from Oman and Lahfa to Mecca, are generally composed of beggars, or people who wish to pass for such; and the caravan which every year leaves Bagdad for Mecca, accompanied with many rich Persians, is, in proportion to its number, charged with similar expences and extortions with those of Turkey, Egypt, and Magreb, which pass by Hejaz. Yet there is reason to believe that the towns of Neged carry on a considerable trade among themselves, and with the neighbouring places in Hejaz, Yemen, and Lahfa; and by these means it may be possible for an European traveller to inspect this internal part of Arabia.

The population of Arabia consists chiefly of Mahometans, intermixed with some Jews and Christians. Banians also from India are settled in great numbers in their commercial cities. For their manners and customs, language, and literature, and other particulars, see the following articles, and those already referred to in the general account of the country.

Of the various Arabian colonies settled in the maritime parts of the gulf of Persia, the most considerable is the city of Abufchar, 28° 59' from the equator. That of Gombron, founded by Shah Abbas, has been losing, ever since the troubles consequent on the death of Shah Nadir, the opulence and splendour which it derived from the extent of its commerce. Besides several isles of little consequence in the Arabian gulf, there are SOCOTRA in the Arabian sea; and the isle of BARRIN, or AUAL, in the Persian gulf, in which there is a fortified town; and on this and the groupe of adjacent small isles, there are 50 or 60 mean villages.

ARABS, *history, Character, customs, &c. of the.* According to the oriental writers, the Arabs are distinguished into two classes, viz. the old lost Arabians, and the present. The former were very numerous, and divided into several tribes, which are now all destroyed, or else lost and swallowed up among the other tribes; nor are any certain memoirs or records extant concerning them. The most famous tribes among these ancient Arabians were *Ad, Thamud, Tefin,*

Jadis, the former Jorban, and Amalek. The present Arabians, according to their own historians, are sprung from two stocks, Kahtan or Joktan, the son of Eber, and Adnan, descended in a direct line from Ishmael, the son of Abraham and Hagar. The posterity of the former they call *Al Arab, Al Arabi*, i. e. the genuine or pure Arabs; and those of the latter, *Al Arab al Mustaraba*, i. e. naturalized or insidious Arabs. Besides these tribes of Arabs, mentioned by their own authors, who were not descended from the race of Shem, others of them were the posterity of Ham, by his son Cush, who inhabited the banks of the Euphrates, and of the Persian gulf, whether they came from Chuzellan, or Sufiana, the original settlement of their father. To these three stocks traditionary report ascribes the origin of the Arabians. Some time after the confusion of languages at Babel, or according to the computation admitted in Europe about 3600 years ago, Yarab, the elder of Joktan's sons, it is said, succeeded his father in the kingdom of Yemca, giving name, as the Arab writers maintain, to their country and language; and Jorban, the younger, founded the kingdom of Hejaz, where his posterity possessed the throne till the time of Ishmael. The kingdom of Yemen, or at least the better part of it, particularly the provinces of Saba and Hadramaut, was governed by princes of the tribe of Hamyar, the son of Saba, and the great grandson of Kahtan; though at length the kingdom was translated to the descendants of Cahlan his brother, who still retained the title of king of Hamyar. The princes of the Hamyarites, called Homerites by the later Greek and Latian authors, had the general title of "Tobba," signifying successor, as the Egyptian kings had that of Pharaoh, the Roman emperors that of Cæsar, and the successors of Mahomet that of Caliph. This kingdom lasted, according to Abulfeda, 2020 years; or, as other Arabian writers say, above 3000; the length of the reign of each prince being very uncertain. The first great calamity that befel the tribes settled in Yemen was the inundation of Aram, which is said to have happened soon after the time of Alexander the Great, and to have been occasioned by the irruption of a moond, or dam, erected near the city of Saba, afterwards called Mareb, and serving as a reservoir for receiving the water which came down from the mountains for the supply of the city, and for watering their lands. On this occasion, eight tribes were forced to abandon their dwellings; and some of them, in their migration, gave rise to the two kingdoms of Ghassan and Hira; both of them out of the proper limits of Arabia. The founders of the former, in Syria Damascena, maintained their kingdom, according to Abulfeda, 616 years. Five of these princes were named Hareth, written by the Greeks Aretas; and it was the governor of one of these who ordered the gates of Damascus to be watched, for the purpose of apprehending the apostle Paul. This tribe was Christian; but their last king, on occasion of the successes of the Arabs in Syria, professed Mohammedism under the Caliph Omar; however, on receiving some disgust, he returned to his former faith, and retired to Constantinople. The other kingdom of Hira, founded in Chaldaea, or Irak, continued, with some small interruption by the Persians, till the caliphate of Abubeker, and its duration was near 623 years. The princes were under the protection of the kings of Persia, acting as their lieutenants over the Arabs of Irak, as the kings of Ghassan were for the Roman emperors, over those of Syria.

Jorham, the son of Kahtan, who founded the kingdom of Hejaz, and his posterity, maintained possession of it till the time of Ishmael, who, marrying the daughter of Modad,

one of the princes of the country, had 12 sons; to one of whom, called Kidar, the crown was resigned by his uncles, the Jorhamites; but others say, that the descendants of Ishmael expelled that tribe, who, retiring to Johainah, were, after various fortune, all destroyed by an inundation. Of the successive kings of Hamyar, Hira, Ghaffan, and Jorham, Dr. Pococke, in his "Specimen Arab." has given catalogues, that are said to be tolerably exact.

After the expulsion of the Jorhamites, the government of Hejaz seems not to have remained for many centuries in the hands of one prince, but to have been divided among the heads of tribes, almost in the same manner as the Arabs of the desert are governed at this day. At Mecca, an aristocracy prevailed, where the chief management of affairs, till the time of Mohammed, was in the tribe of Koreish; more especially after they had obtained the custody of the Caaba from the tribe of Khozaah, one of those tribes that had migrated from Al-Aram.

Besides the kingdoms already enumerated, there were some other tribes, which in latter times had princes of their own, and formed states of inferior note; such, in particular, was the tribe of Kenda, which had several kings.

Having given a brief abstract of the history of the ancient Arabs before Mahomet, it may not be improper to subjoin a concise account of the principal transactions in which those people were concerned with the Egyptians, Persians, Greeks, and Romans, extracted from the most approved writers of the two last nations. According to Diodorus Siculus (lib. i.), Sesostris, the Sefac of Josephus and Sir Isaac Newton, subdued Arabia. But it is evident, that the Arabs were never completely subjugated, nor for any long time rendered any homage to the kings of Egypt, because Sefac himself, as the same author informs us, was obliged to draw a line from Heliopolis to Pelusium, in order to secure Egypt from the incursions of the Arabs and Syrians. The Seenite Arabs, contiguous to Palestine and Syria, must, therefore, have been independent on that prince. Nor can it be inferred from Diodorus, that he ever harassed Arabia Felix, though he had a fleet of 400 sail upon the Red Sea; but only coasted it, or at most seized upon some of its maritime provinces in his voyage to India: and by the testimony of this historian, who has extolled the conquests of Sesostris, it sufficiently appears, that the whole peninsula of the Arabs never was, at least for any considerable time, in a state of servitude to the Egyptians. It appears on the contrary, that they gave kings to Egypt, who were known under the name of Shepherds. From Diodorus (l. ii.) we also learn, that neither the Assyrians, Medes, nor Persians, could ever gain any considerable settlement among them. The Persian monarchs were respected by them as their friends, and received from them, as Herodotus informs us (l. iii. c. 97.), an annual present of frankincense; and yet they never made them tributary, and gave law to them; nor is Arabia found in any enumeration of their provinces: so far indeed were the Persians from being their masters, that Cambyfes, in his expedition against Egypt, was obliged to ask permission to pass through their territories. The Spartans, inured to conquest, made a descent on their coasts, and repented of their temerity. When Alexander the Great had subdued the Persian empire, the Arabians, however exorbitant and generally dreaded his power was, in consequence of the extent and fame of his victories, had so little apprehension of him, that they alone, of all the neighbouring nations, sent no ambassadors to him. The preparations which he made shew, that he regarded this conquest as worthy of his utmost exertions, but death put a stop to his enterprize, so that it is impossible to decide what would have been the event; but

perhaps this people might have convinced him that he was not absolutely invincible. The successors of Alexander, who attempted to prosecute his design, were as often defeated. For an account of the unsuccessful enterprize of Athenæus, the general of Antigonus, see ANTIGONUS.

The reply of the Arabs to Demetrius, who undertook a second expedition against them, demonstrates their manly resolution, and their indifference to the fame that is acquired by arms. "King Demetrius" said they, "what are thy pretensions? what wouldst thou have of us? what motive brings thee to disturb the silence of our deserts, where nature, a cruel stepmother to us, grants her children no other than the painful means of subsistence? our parched and sandy deserts have no charm for us except the liberty they allow us to enjoy, and which thou art come to ravish from us. It is the love of independence, that renders such hardships as are unknown to the other inhabitants of the earth, supportable to us. Our rocks are too hard to be broken by thy sceptre: if then thou wouldst subvert us to thy yoke, begin by subjugating our sentiments; alter our manner of life; but first contrive means of subsistence in a country that has nothing but sand, and rocks, and metals. Be advised, and let those people live in peace against whom thou hast no cause of complaint, and who desire to have no quarrel with thee. Accept the presents we here bring thee; and may they induce thee to believe that the Nabathæans are thy friends."

The Romans made incursions into Arabia, but never subdued it. Some few tribes, vanquished by Lucullus, did homage to the majesty of the Roman people. Pompey, as Plutarch informs us, obliged Aretas, an Arab prince, whose dominions bordered upon Syria and Mesopotamia, to receive a Roman garrison; and the same general likewise subdued the Arabs who dwelt about mount Amanus, by his lieutenant Afranius. After which the king of the Arabs, residing in Petra, addressed a letter of submission to him; but it does not appear that Pompey ever gained possession of that fortress. Crassus, ambitious of making the conquest of this country, entered a district of it with a numerous army, which perished in the deserts from thirst and misery. Aelius Gallus, in the reign of the emperor Augustus, in some measure repaired the disgrace of this disaster. He, of all the Roman generals, seems to have penetrated farthest into these immense and frightful deserts. At first he met with some brilliant successes; but the deadly heats consumed the flower of his troops, and he was obliged to retire with the remains of his army, whose fruitless victories were celebrated by the flatterers of Augustus. Caius, his grandson, convinced of the impossibility of subjugating a people, who only regarded life inasmuch as they could live free, invested their towns with fire and sword; and having forced them to surrender, he thence made excursions upon the territories of the empire; but after all his exertions, contented himself with the glory of having deprived them of the means of offence. From that time to the reign of Trajan, we read of no contest between the two nations. This emperor laid siege to the capital of the Hagarenes; and after repeated efforts, submitted to the disgrace of raising it. Notwithstanding the flatteries of Trajan, by the historians and orators of his time, and the medals struck by him, he did not subdue the Arabs; the province of Arabia, which he is said to have added to the Roman empire, scarcely reaching farther than Arabia Petraea, or the very skirts of the country. About eighty years after this period, the emperor Severus, being greatly incensed against the Arabs bordering on Syria, laid siege to Atræ their capital, with a formidable army; but he was obliged to raise it, and to retire into his own dominions. The Sa-

racens,

racens, the most celebrated people among the Arabs, ravaged Mesopotamia in the time of the emperor Constantius, and joined the Persians against Julian. This prince, and some of his predecessors, had paid a subsidy to the Saracens who served in their armies; but Julian, who considered them as his subjects and not as his allies, thought the treaty degrading to the majesty of the empire, and refused to pay a tribute under the qualifying term of a subsidy. Of this infraction the barbarians complained; but the prince, who knew how to fight as well as to govern, haughtily answered: "My implements are iron: I know nothing of gold." This expression they resented, deserted to the Persian, and ever after continued faithful to him. Sometime afterwards these warlike people marched to the relief of Constantinople, of which city they became the deliverers. It was under the reign of Theodosius that they began to make war in their own behalf; and after having been the stay of the tottering empire, they became its terror. The Arabs, hitherto divided in tribes, now united their forces, and sallied forth to make conquests. It appears that the seeds of that barbarous valour they now displayed had been concealed in their breasts, and that their hard and laborious life had prepared them for becoming intrepid soldiers. Their deserts were a rampart that secured them from foreign incursions; it was impossible to penetrate them without the danger of perishing for want of water, as the wells for the supply of it were known only to the inhabitants, who never disclosed the secret. Their towns were little else than magazines, in which they stored up the fruits of their predatory attacks, consisting of little more than a collection of huts, which they abandoned on the approach of an enemy; their citadels were the work of nature, steep rocks from whence they defied the most numerous hosts, who, like them, had nothing to fear, except the dearth of water and famine. Being ignorant in the art of fortification, they were but little versed in the attack of strong holds; thus their offensive wars were nothing more than transitory incursions: the forts which their enemies erected on the frontiers were sufficient to restrain their depredations. They were wont to thank heaven for giving them swords instead of ramparts. Their education was martial; they trained their children to the use of the bow and the sword, and in breaking their horses. An excellent sword was a family token, which a father bequeathed to his children, to remind them of the bravery of their ancestors. Prodigal of their own blood, it cannot be imagined that they were sparing of that of others. They fought only by day-light, because courage is roused by having witnesses of its efforts, and they thought that darkness was favourable to cowardice. It is therefore by no means surprising, that a people born with such noble propensities should have achieved such prodigies of valour, when once they had yielded to the ambition of conquests. The Arabs then, naturally warlike, only waited for circumstances to render them conquerors; for a long time, however, pacific and obscure, they took up arms merely from greediness of spoil, and never with a view of extending their borders, holding mankind in too great contempt for wishing to have them for subjects. They marched to battle without order or discipline; but accustomed to contend with ferocious animals, they carried courage to the excess of ferocity. Some, however, more savage than the rest, sold their blood and their services to such kings as were able to buy them; and it was not so much from a sentiment of honour, as from the hope of spoil, that they abandoned the tranquillity of their solitudes. The Romans and the Persians, as we have seen, had in their armies a body of Saracens, who frequently decided the fortune of war. Though satisfied

with their independence, they were scrupulous of attacking the liberty of their neighbours; and their greatest glory was their never having submitted to foreign dominion. To this, however, they have undoubtedly a distinguishing claim; those who at different times attempted to subjugate them, having merely succeeded against a few tribes, settled in the cities on the Arabian gulf, or in the vicinity of Syria; and even here their power was extremely transient. After the time of Mahomet, Arabia was for about three centuries under the Caliphs his successors; but neither he, nor the Caliphs, could ever entirely subdue their own nation. Many chiefs in the interior parts of the country still maintained their independence, without respecting the Caliph in any other light than as the head of their religion; and the authority of the Caliphs was merely spiritual, except in their dominions over a part of the coast, where they were acknowledged as sovereigns. In the year 325 of the Hegira, a great part of the country was possessed by the KARMATIANS, to whom the Caliphs were obliged to pay tribute, that the pilgrimage to Mecca might be regularly performed. After the ruin of the power of the Caliphate by the Turks, Arabia shook off the yoke to which it had been partly subjected, and was governed, as it formerly had been, by a number of chiefs more or less powerful, descended from different indigenous families. No neighbouring power ever attempted to subdue this country, till the Portuguese penetrated into India, and made their appearance in the Red Sea. Then, in the beginning of the 16th century, Sultan "El-Gury," fitted out a fleet to expel these invaders; and their fleet seized almost all the sea-port towns of Arabia. But when the dynasty of the Mamelukes was terminated by the Turks, these cities fell again into the hands of their natural sovereigns. In the continuance of the war between the Turks and the Portuguese, Solomon Pacha, with a powerful fleet, seized all the towns upon the Arabian gulf. His successors pushed their conquests still farther, and subdued great part of Yemen, penetrating into the highlands; so that Arabia became almost entirely a province of the Sultan of Constantinople, and was governed by Pachas, like the other provinces of the Ottoman empire. These events happened, under a lieutenant of Soliman I., A. D. 1538, and under Selim II., A. D. 1568. In the interior parts, however, there were still independent princes and Sheiks, who had never been subdued; but continued to harass the Turks, and to drive them towards the coasts. After various reiterated efforts, a prince of the family now reigning at Sana, at length succeeded, about the middle of the 17th century, and obliged the Turkish nation to evacuate all the places upon the Arabian coast, which they had occupied for more than a century. The Turks now possess nothing in this country, says Niebuhr, but a precarious authority in the city of Jidda; and it is therefore absurd to reckon Arabia among the Ottoman provinces, since it is properly to be considered as independent of all foreign powers. From the view above presented of the independence of Arabia, the contemptuous reflection of a popular historian (see Gibbon's Hist. vol. ix. p. 229.), seems not justly warranted; who, after observing, that "the perpetual independence of the Arabs has been the theme of praise among strangers and natives," adds, "the arts of controversy transform this singular event into a prophecy and a miracle, in favour of the posterity of Ishmael. Some exceptions, that can neither be dissembled nor eluded, render this method of reasoning as indiscreet as it is superfluous." This reflection was aimed at the authors of the Ancient Universal History, who had observed (vol. xvi. p. 299.), that the manner of life, disposition, power, and government

of the Scenite Arabs, now known under the name of Bedouins, as well as their never having been thoroughly subjugated by any foreign power, from the age of Ishmael to the present time, illustrate the truth of a scripture prediction, Gen. xvi. 12. The learned historian himself allows, that, though the kingdom of Yemen has been successively subdued by the Abyssinians, the Persians, the sultans of Egypt, under a brother of the great Saladin, A. D. 1173, who founded a dynasty of Curds or Ayoubites, and the Turks: though the holy cities of Mecca and Medina have repeatedly bowed under a Scythian tyrant; and though the Roman province of Arabia embraced the peculiar wildness, in which Ishmael and his sons must have pitched their tents in the face of their brethren; yet these exceptions are temporary or local, and the body of the nation has escaped the yoke of the most powerful monarchies. This writer, however, has admirably delineated the causes of the freedom and independence of the Arabs, and also the effects thus produced on their disposition and character.

Arabia, like other nations of the east, was partitioned into different tribes, each of which had its chief, its customs, and its sacred rites peculiar to itself: although every family formed a species of domestic government absolutely independent, though distant from one another, without any relations of interest or friendship, they had retained certain features which clearly indicated, that they were so many branches sprung from the same stock; all had the same love of independence, and, free in their native deserts, they pitied the nations that were subjected to masters. This love of liberty which is the passion of noble and generous minds, was in them a national fanaticism; which, causing them to despise the rest of mankind, prevented their participating in the disorders and crimes which have poisoned the source of public morals. The long memory of their independence was the firmest pledge of its perpetuity; and succeeding generations were animated to prove their descent, and to maintain their inheritance. Their domestic feuds were suspended on the approach of a common enemy; and when they advanced to battle, the hope of victory was in the front; in the rear, the assurance of a retreat. The arms and deserts of the Bedouins are not only the safeguards of their own freedom, but the barriers also of Arabia Felix; whose inhabitants, remote from war, are enervated by the luxury of the soil and climate. In every tribe among the Arabs, superstition, or gratitude, or fortune, has exalted a particular family above the heads of their equals. The dignities of sheik, and emir, invariably descend in this chosen race; but the order of succession is loose and precarious; and the most worthy, or aged, of the noble kinsmen, are preferred to the simple though important office of composing disputes by their advice, and guiding valour by their example. The momentary junction of several tribes produces an army, their more lasting union constitutes a nation: and the tribes and families are held together by a mutual and voluntary compact. In the simple state of the Arabs, the nation is free, because each of her sons disdains a base submission to the will of a master. His breast is fortified with the austere virtues of courage, patience, and sobriety; the love of independence prompts him to exercise the habits of self-command; and the fear of dishonour guards him from the meaner apprehensions of pain, of danger, and of death. The vigour of their frame is preserved by the laborious exercises of an active life, that enures them to toil and fatigue. The frugality to which they are constrained by the sterility of their climate, seems to be a virtue in them; and they are thus preserved from the imbecility and disease that are the

result of intemperance either in eating or drinking, and enabled to prolong their life to old age. Their virtues and their vices partake of the influence of their situation and climate. That complexional gravity, which renders them insensible to whatever affects the rest of mankind, that scornful indifference and insolent pride with which they regard others, and that torpid insensibility which they manifest, are contracted and nourished in their state of solitude. The gravity and firmness of the mind are indicated in the outward demeanour of an Arab; his speech is slow, weighty, and concise; he is seldom provoked to laughter; his only gesture is that of stroking his beard, the venerable symbol of manhood; and the sense of his own importance teaches him to accost his equals without levity, and his superiors without awe. A more serious charge than any thing already mentioned is brought against the Arabs, and from which it is difficult to justify them: this is an habitual cruelty prompting them to shed human blood without benefit and without remorse. Their own historians have transmitted to us such acts of atrocity, as testify that this ferocious people proposed not so much to conquer the world, as to destroy it. "In the study of nations and men," says Mr. Gibbon, "we may observe the causes that render them hostile or friendly to each other, that tend to narrow or enlarge, to mollify or exasperate the human character. The separation of the Arabs from the rest of mankind has accustomed them to confound the ideas of stranger and enemy; and the poverty of the land has introduced a maxim of jurisprudence, which they believe and practise to the present hour. They pretend, that in the division of the earth, the rich and fertile climates were assigned to the other branches of the human family; and that the posterity of the outlaw Ishmael might recover, by fraud or force, the portion of inheritance of which he had been unjustly deprived." Thus, the seizure of a caravan is not a robbery that can excite in them any remorse. They look upon it as the recompence of their courage, as well as a restitution of usurped property; and hence their errors concerning the right of war have precipitated them into a deluge of crimes. According to the remark of Pliny, the Arabian tribes are equally addicted to theft and merchandize. If a Bedouin discovers from afar a solitary traveller, he rides furiously against him, crying with a loud voice, "Undrests thyself, thy aunt (my wife) is without a garment." A ready submission entitles him to mercy, resistance will provoke the aggressor, and his own blood must expiate the blood which he presumes to shed in legitimate defence. A single robber, or a few associates, are branded with their genuine name; but the exploits of a numerous band assume the character of lawful and honourable war. The temper of a people, thus armed against mankind, was doubly inflamed by the domestic licence of rapine, murder, and revenge. Each Arab might, with impunity and renown, point his javelin against the life of his countryman; as in each community, the jurisdiction of the magistrate was weak and impotent. Hostility was embittered with the rancour of civil faction, and the recital, in prose or verse, of an obsolete feud, was sufficient to rekindle the same passion among the descendants of the hostile tribes. In private life, every man, at least every family, was the judge and avenger of its own cause. The nice sensibility of honour, which weighs the insult rather than the injury, sheds its deadly venom in the quarrels of the Arabs; the honour of their women, and of their beards, is most easily wounded; an indecent action, or a contemptuous word, can be expiated only by the blood of the offender; and such is their patient inveteracy, that they expect whole months and years the opportunity for revenge.

A fine or compensation for murder is familiar to the barbarians of every age; but in Arabia, the kinsmen of the dead are at liberty to accept the atonement, or to exercise with their own hands the law of retaliation. The refined malice of the Arab refuses even the head of the murderer, substitutes an innocent to the guilty person, and transfers the penalty to the best and most considerable of the race by whom they have been injured. If he falls by their hands, they are exposed, in their turn, to the danger of reprisals; the individuals of either family lead a life of malice and despotism; and fifty years may sometimes elapse, before the account of vengeance is finally settled. The modern theory and practice, in the revenge of murder, are described by Niebuhr; and the harsher features of antiquity may be traced in the Koran, c. 2. p. 20, c. 17. p. 230, with Sale's observations. The attachment of the Arabs to their customs and opinions, their secluded life severing them from mankind, and their contempt of death, which they contemplate with a cold intrepidity, were so many causes adapted to render them barbarous. He who despises life is inaccessible to pity; and no enemy is more formidable than he who is ready to die. Nevertheless, this sanguinary spirit, ignorant of pity or forgiveness, has been moderated by the maxims of honour, which require, in every private encounter, some decent equality of age and strength, of numbers and weapons. An annual festival of two, perhaps of four months, was observed by the Arabs before the time of Mahomet, during which their swords were religiously sheathed, both in foreign and domestic hostility. But the spirit of rapine and revenge was further tempered by the milder influence of trade and literature. The solitary peninsula is encompassed by the most civilized nations of the ancient world; the merchant is the friend of mankind; and the annual caravans imported the first seeds of knowledge and politeness into the cities, and even the camps of the desert. The Arabs have always blended a very considerable degree of beneficence, hospitality, and politeness, with their ferocity. The same hospitality which was practised by Abraham, and celebrated by Homer, is still renewed in the camps of the Arabs; and examples of this kind, among them, exceed any thing that can be produced from other nations. The contrary vice was held among them in such contempt, that one of their poets upbraids the inhabitants of a certain district in terms of bitter reproach, alleging, that none of their men had the heart to give, nor their women to deny. After the time of Mahomet, they were no less liberal than their ancestors had been. Sale (Pref. Koran, p. 21.) mentions the following singular instance. Three men were disputing in the court of the Caaba, who was the most liberal person among the Arabs. One gave the preference to Abdallah, another to Kais, and a third to Arabah. It was proposed, however, for the decision of the dispute, that each should go to his friend, and ask his assistance. Abdallah's friend found him with his foot in the stirrup, mounting his camel, and just setting out on a journey, and thus accosted him; "Son of the uncle of the apostle of God, I am a traveller, and in distress." Upon which Abdallah instantly dismounted, and presented the pilgrim with his camel, its rich caparison, some vests of silk, and a purse of 4000 pieces of gold. The servant of Kais informed the second suppliant that his master was asleep, but that he had rather relieve his necessity, than awake his master: accordingly, he gave him a purse of 7000 pieces of gold, assuring him that it was all the money they then had in the house; and he directed him to go to those who had the charge of the camels, with an order for a camel and a slave. When Kais awoke, and was informed

of what his servant had done, he gave him his freedom, and asked him why he did not call him; for, says he, "I would have given him more." The third person went to Arabah, who, being dim-sighted, was leaning on two slaves, and just coming out of his house in order to attend the hour of prayer. As soon as his case was made known, Arabah clapped his hands, lamented his misfortune, as he had no money, but desired him to take his two slaves. When these were refused, Arabah protested, that if they were not taken, they should be enfranchised; and, leaving the slaves, groped along by the wall. Arabah was pronounced the most generous of the three. The character of Hatem is the most perfect model of Arabian virtue. He is represented, by D'Heibelot (Bibl. Orient. p. 406.), as brave and liberal, an eloquent poet, and a successful robber; forty camels were roasted at his hospitable feasts; and at the prayer of a suppliant enemy, he restored both the captives and the spoil. In the desert, and on the roads, the Arabs will carry off the spoils of the traveller, and in a moment afterwards embrace, without inquiry or hesitation, the stranger who dares confide in their honour, and enter their tent. His treatment is kind and respectful; he shares the wealth or the poverty of his host; and, after necessary repose, he is dismissed on his way with thanks, with blessings, and perhaps with gifts. In every inhabited district, fires are lighted up at night, which are called the fires of hospitality, to invite the travellers that miss their way, or are in want of rest from the fatigues of their journey; and after well regaling them, they are set forward on their route with the sound of instruments and with presents. Their humanity is also manifest in the modes and degrees of punishment which they inflict on persons convicted of crimes. The Arabs extend their generosity and kindness even to the animals that grow old in their service; granting them the privilege of grazing in the richest pastures, exempt from every species of labour; and they send them provender even to the summits of their mountains. In politeness, the Arabs vie with the Persians. The common mode of salutation is the "salam aleikum," or, peace be with you; in pronouncing which words, they raise the right hand to the heart; but this form is seldom addressed to Christians. On meeting, in their wide deserts, the salutations are multiplied; and the hand of a superior is kissed in token of respect, a ceremony which sometimes passes among equals; and hence probably was derived, by means of their Moorish victors, the Spanish expression of kissing the hands. Nor were these the only good qualities of the Arab; they are commended by the ancients for the affection and respect that subsist between parents and children, and other kindred; and for the fidelity with which they fulfil their engagements. He who violates the sanctity of an oath, is doomed to grow old in ignominy; and it is with their blood that they sign their alliances, in order to impress upon them a more sacred character. The rights of friendship are deemed inviolable; and when two friends contract reciprocal obligations, they cannot decline them without being treated as profligates.

The primitive form of government, among the Arabs, was of the patriarchal kind; and the same form, according to Niebuhr, has ever subsisted without alteration; a circumstance which proves the antiquity of this people. Among the Bedouins, or pastoral Arabs, the descendants of the ancient Scenites, it is preserved in all its purity. Of these, such who live in tents, have many sheiks, each of whom governs his own family with a power almost absolute. All the sheiks, however, who belong to the same tribe, acknowledge a common sheik, whose authority is limited

by custom. The dignity of grand sheik is hereditary in a certain family; but the inferior sheiks, upon the death of a grand sheik, choose a successor out of his family, without regard to age, or lineal succession, or any other consideration, except superiority of abilities. This right of election obliges the grand sheik to treat those of the inferior order rather as associates than subjects, sharing with them his sovereign authority. The spirit of liberty, which animates this warlike nation, renders them incapable of servitude. But this spirit is less prevalent among those who live in towns, or who are employed in husbandry. In the fertile districts of this country, there have been always monarchies, formed either by conquest, or religious prejudices. Such are the present dominions of the sheriff of Mecca, of the imams of Sana and Maskat, and of some princes in the province of Hadramaut. However, as these countries are intersected by large ranges of mountains, the mountains are occupied by independent sheiks. But, although so many independent chieftains have their domains interspersed through the territories of these several sovereigns, yet nothing of the feudal government appears here. The sheiks possess no fiefs; they have only a sort of property in the persons of the people of their several tribes. Even those who seem to be tributary subjects to the princes within whose dominions they dwell, are not actually so, but they retain their independence; and the tribute they pay, is merely a title for the use of the land of which they are a sort of farmers. Such are the sheiks settled in Syria, Egypt, and over the whole of mount Atlas. This multiplicity of petty sovereigns, occasions several inconveniences to the people in general. Wars cannot but frequently arise among states, whose territories are so intermingled together, and whose sovereigns have such a variety of jarring interests to manage. But, happily, these quarrels are scarcely ever productive of very fatal consequences. An army of a thousand Arabs will betake themselves to flight, and think themselves routed, if they lose seven or eight of their number; and their contels are terminated as easily as they are excited. It is somewhat surprising, that the Arabs, in a country so rich and fertile, should be so uncomfortably lodged, indifferently fed, ill clothed, and destitute of almost all the conveniences of life. But the causes are sufficient to account for the effects. As to the wandering Arabs, their poverty is voluntary. They prefer liberty to wealth, pastoral simplicity to a life of constraint and toil, which might procure for them a greater variety of gratifications. Those who live in cities, or who are employed in the cultivation of the land, are kept in poverty by the exorbitancy of the taxes to which they are subject. The whole substance of the people is consumed in the support of their numerous princes and priests. The general cause of the impoverishment of Arabia is, without doubt, its having ceased to be the channel of trade with India, since the discovery of the passage by the Cape of Good Hope. Yet, if the lands were better cultivated, this country might, without the aid of foreign trade, afford sufficient resources to supply all its inhabitants with abundance of the necessaries and common conveniences of life.

The houses of the Arabs are built of stone, and have terrace roofs; but those occupied by the lower people are small huts, formed, for such as inhabit the banks of the Euphrates, of branches of the date-tree, having a round roof, covered with rush mats. The poor spread their floors with straw mats, and the rich with fine carpets. No person ever enters a room, without having first put off his shoes. The men occupy the fore part of the house, and the women the back part. If there are no separate apartments for the dif-

ferent sexes, the Arabians, when they introduce a stranger, enter before him, and cry out, "Tarik," retire; upon which the women instantly disappear. The great have often in their halls basins with *jets d'eau* to cool the air. The Arabians practise several modes of sitting; but that to which they recur, for the greatest ease, is crossing their legs under their body; but in the presence of superiors, an Arab sits with his two knees touching each other, and with the weight of the body resting upon the heels. The chief amusements of the Arabians are sought at coffee houses, in markets, and public meetings, which they are fond of frequenting; and in order to divert the dulness of domestic life, they recur much to the use of tobacco; and persons of opulence and fashion carry with them a box of odoriferous wood, a piece of which they put into the pipe of a person to whom they wish to shew respect; this communicates a fragrant smell and an agreeable taste. Instead of opium, which the Arabians do not use, they constantly chew "kaad," or the buds of a certain tree, which are brought in small boxes from the hills of Yemen. The lower people addicted to intoxication, snoke, for this purpose, the dried leaves of a sort of hemp, which raises their spirits, and throws them into a state in which delightful visions dance before their imagination. At their meals, they squat themselves upon the ground when they sit; and as they have no knives nor forks, they use their fingers with great dexterity, and eat of all dishes with the hand. The food of the most eminent sheiks is "pilau," or boiled rice. The Arabs repeat always a short prayer before they sit down to a meal; "In the name of the most merciful God;" and every one when he has done retires, pronouncing, "God be praised." As they drink little when they eat, after washing they drink cold water and a cup of coffee, which they use without either milk or sugar. In Yemen, however, of which the coffee-plant is a native, the use of coffee is rare. The favourite drink of this province is prepared from the husks of coffee-beans slightly washed and pounded; it tastes like tea, and is deemed refreshing. Intoxicating liquors of various kinds are privately used in different parts of Arabia; and they are obtained from the Christians and Jews. The Arabians, in general, are sober, frugal, and abstemious. Their usual articles of food are rice, pulse, milk, butter, and whipped cream. They seldom eat animal food. Of this, mutton is the most common; and the Arabians in the desert use it freely. The common people in Arabia have little other food besides bad bread, made of "durra," by kneading it with camel's milk, oil, butter, or greafe. Their grain is bruised with stones, as they have no mills; and in the desert they bake their cakes on a plate or gridiron, or on live coals, or on camel's dung, where they cover it till it is penetrated by the heat. In the towns, they have ovens like ours, and their bread is of barley meal, in form resembling our pancakes.

There is a great variety in the national dress of the Arabians. Their head-dress consists of fifteen caps laid over one another; some of which are of linen, and the rest of thick cloth or cotton. The uppermost is one richly embroidered with gold, and some sentence of the Koran; and over all they wrap a large piece of muslin, ornamented at the ends, and flowing loose upon the shoulders, with silk or golden fringes. The Arabs of the common class wear only two caps, with the sash carelessly bound on the head. Some have drawers and a shirt; but the greater number have only a piece of linen about their loins, a large girdle, and a piece of cloth upon their shoulders; in other respects they are naked, having neither shoes nor stockings. In the highlands, where the weather is colder, the people wear

sheep skins; and in the night, as a security against insects, they sleep in sacks. Persons of middle rank wear sandals instead of shoes. The ordinary dress of the Arabs is very simple; but they have also a sort of great coat without sleeves, called "abba," which is still more simple. In several parts of Arabia, the men wear no drawers; but these, with a large shirt, are the whole dress used by the women. In several provinces, they wear different sorts of veils. All wear rings on their fingers, arms, nose, and ears. They stain their nails red, and their hands and feet of a brownish yellow, with the juice of the alhenna; and they paint the circle of the eyes, and even the eye-lashes, black, with a preparation of lead ore. The women of Yemen also make black punctures in the face, to improve their beauty. Every body, without exception, wears the beard of its natural length; but the Arabs keep their mustachios very short. The Jews are forbidden the use of the turban, using instead of it a small bonnet; nor are they permitted to dress in any colour but blue. The dress of the Banians settled in Arabia, consists of a red turban of a particular form, a piece of white linen upon the shoulders, another about their loins, and slippers.

The Arabs are attached to certain customs, which they inherit from their progenitors, and which they observe in common with other oriental nations with which they have no immediate connection; and this circumstance seems to prove that they have been led to them by the nature of their climate. As cleanliness is indispensably necessary to health, the founders of several sects have enjoined various purifications and frequent ablutions as a religious duty; and the Arabians are scrupulous in the observance of the precepts that enforce them. They not only wash, bathe, and pare their nails very often, but cut away all hairs from the body. The painful rite of circumcision, which they adopted from Ishmael, has been retained under the persuasion that it checked the ravages of particular diseases; and hence the practice of circumcising girls is general in the same countries where boys are circumcised. The distinction of meats into allowed and prohibited was a lesson deduced from experience, teaching that such aliments as have an influence on the physical constitution, had in like manner a secret influence on the moral; and therefore a discreet police was authorized to interdict the flesh of the hog, and other unclean animals, that might at once be prejudicial to the health and to morals. With similar views, Mahomet, and some other founders of sects, have affixed ideas of spiritual impurity to the act of touching a dead body.

Polygamy, which was authorized by the example of the patriarchs, has been perpetuated in Arabia; but the Arabians seldom avail themselves of the privilege of marrying four lawful wives, and entertaining at the same time any number of unlawful ones. None but rich voluptuaries marry so many, and their conduct is blamed by all sober men. An Arabian, in moderate circumstances, seldom marries more than one wife; and as the husband is by law obliged to treat his wives suitably to their condition, and to dispense his favours among them with perfect equality, the privilege of polygamy is thought rather troublesome than convenient. Besides, divorce may be obtained without much difficulty; though the Arabians never exercise the right of repudiating a wife, unless urged by the strongest reasons, because this is considered as dishonourable, and entails disgrace on the woman and her relations. Wives are entitled to demand a divorce, when they think themselves ill used by their husbands. The Arabian women enjoy a great portion of liberty, and often, of power, in their families. Their dowries, and the annual income which they afford, remain at their disposal

during marriage; and, in the case of divorce, the whole of their own property is reserved to them. Some travellers have absurdly said, that the Mahometan wives are all slaves, and so entirely the property of their husbands, that they are even inherited by their heirs. This representation confounds slaves that have been purchased with women of free estate, who dispose of themselves in the East as they do in Europe; and the erroneous opinion seems to have arisen from the equally mistaken notion, that fathers in Arabia sell their daughters to the highest bidder. The case is so much otherwise, that every man, in tolerably easy circumstances, instead of selling his daughter, strives to give her a dowry, which may continue her own property. The marriage is made out by the Cadi, and signed in his presence; and it secures to the wife not only her dowry, but also a separate maintenance in case of a divorce. Many ridiculous stories have been related of the tests of virginity which an Arab expects when he marries a young woman: but most of these stories greatly exaggerate the truth. The Bedouins and the highlanders of Yemen, a rude and almost savage race, do indeed regard the want of these tokens as a mark of dishonour, and send a woman back to her relations, when her chastity cannot be thus evinced; but the more civilized inhabitants of the towns seldom or never concern themselves about such trifles. Many superstitious observances respecting marriage still prevail in Arabia. The Arabs believe in the virtue of enchantments, and in the art of tying and untying the knots of fate. The miserable victim of this art addresses some physician, or some old woman; for the old women are always skilled in sorcery. The Christians of the East have still a more certain remedy against the effects of witchcraft. They say masses for the afflicted person, and the honour of his cure is always ascribed to the influence of these masses. In Arabia there are no eunuchs; and the Arabians abhor the cruel operation which is requisite to render a man a fit guardian of the chastity of a haram.

The characters of nations are very much formed and modified by climate, government, and education. To the first of these the Arabs owe their vivacity and their disposition to indolence; the second increases their sloth, and gives them a spirit of duplicity; and the third is the one principal cause of that formal gravity which influences the faculties of their minds, as well as their carriage and exterior aspect. The mode of education among the Arabs is very different from that of the Europeans. The former strive to hasten the age of maturity, as much as the latter endeavour to retard it. The Arabs, says Niebuhr, are never children; but many Europeans continue children all their lives. As soon as boys in Arabia leave the Haram, about the age of five or six years, they are accustomed to think and speak with gravity, and to pass whole days in the company of either fathers or preceptors. As music and dancing are esteemed indecent among the Arabs, women are also excluded from all assemblies, and the use of strong drinks is forbidden. The young Arabs thus become pensive and serious even in infancy. Nevertheless they have in reality a great degree of vivacity, which varies in the different provinces. This vivacity makes them fond of company and of large assemblies, notwithstanding their seeming seriousness. Several travellers accuse the Arabs of being cheats, thieves, and hypocrites. An arbitrary government, which impoverishes its subjects by extortion, can, indeed, have no favourable influence upon the probity of the nation, yet Niebuhr avers, from his own experience, that such accusations have been exaggerated beyond the facts. The irritable and vindictive spirit of the Arabians has been already noticed.

The Arabs, proud of their remote origin, have always
made

made their genealogies a subject of serious study; and as their ancestors could neither read nor write, they were unable to transmit to them the records of their descent; and for the same reason, it is impossible to convict them of error. For about thirty-six centuries, however, the filiations have been deposited in the public archives. This custom, which is religiously observed, is said to have been introduced by Adnan, one of the ancestors of Mahomet. In short, a people so little numerous, that has not contracted any foreign alliance, and which, in its solitary leisure, is always occupied about the interests of its vanity, may easily have preserved the remembrance of its ancestors, and the series of its generations. All those petty princes, who govern in Arabia, are very proud of their birth, and this pride may be ascribed to the independence and sovereign power which their families have enjoyed from time immemorial. The nobility, who are free, or dependent only on the chiefs of their tribes, are infected with the same vanity. What adds to the high conceit which the Bedouins have of their nobility is its being incommunicable, and not to be transferred by any sovereign prince, nor even by the caliphs. The descendants of Mahomet are those who hold the first rank among the great families in Arabia. These descendants have received different titles; in Arabia, they are called *SHERIFFS* or *SEJIDS*; in the Mahometan countries situate northward, *Sheriffs* or *Emirs*; and in the Arabian colonies in the east, simply *Sejids*. Of all the titles in use among the Arabian nobility, the most ancient and most common is that of *SCHEICK* or *SHEIK*. Other families that are anxious to preserve their genealogies, are those that are descended from the tribe of Koreish, and who have held, by hereditary right, certain employments since the days of Mahomet and his successors. The Arabs seem still to be vain of those long names which are so disgusting in their history; but their length of names and titles is occasioned by the difficulty of distinguishing individuals among a nation that knows not the use of family names.

Although in Arabia there are neither numerous academies nor men of profound learning, yet the Arabian youth are not entirely neglected. In the cities, many of the lowest rank are taught both to read and write; and the same qualifications are also common among the sheiks of the desert, and in Egypt. Persons of distinction retain preceptors in their families to instruct their children and young slaves. In almost every mosque is a school, having a foundation for the support of teachers, and the entertainment and instruction of poor scholars. In great towns, there are likewise other schools, to which people of middle rank send their children to receive religious instruction, and to learn reading, writing, and arithmetic. There are no girls taught in these schools, but they are privately taught by women. Besides these small schools, there are more considerable seminaries of education in some of the great towns of Arabia. There are colleges in which the sciences of astronomy, astrology, philosophy, and medicine are taught; but the Arabians, for want of books and good masters, make little progress, and their attainments are very partial and imperfect. In the dominions of the Imam, there have been for a long time two famous academies; one at Zebid for Sonnites, and the other at Damar for the Zedites. The chief employments of men of letters among the Arabians are the interpretation of the Koran, and the study of the ancient history of the Mahometans.

Some seeds of the sciences seem to have sprung up in Arabia before they were known to other nations. They were the first who studied the laws of the heavenly bodies. A roaming people, in a region lying beneath a serene and cloudless sky, solely employed in tending their flocks, either

in the open plains, or on the tops of mountains, must, at an early period, have acquired some knowledge of the planets and the stars; and it affords a presumption of their having been among the first astronomers, that the names which denote the different constellations, are taken from the different species of animals known in those parts, and many of the stars are called by their names. Their knowledge, however, was neither very accurate nor very extensive. It was derived from long observation and experience, and not from any regular study or astronomical principles and rules. The Arabians, as well as the Indians, chiefly restricted themselves to the observation of the fixed stars, and in this they differed from other nations, whose observations were almost confined to the planets; and they foretold their effects from their influences, not from their nature; and hence, it hath been said, arose the difference between the idolatry of the Greeks and Chaldeans, who chiefly worshipped the planets; and that of the Indians, who worshipped the fixed stars. The stars by which they most usually observed the weather, were those they called "*Anwâ*," or houses of the moon, which were twenty-eight in number, and divided the zodiac into so many parts, through each of which the moon passes every night; and from their rising and setting, the Arabs, by long experience, observed the changes that happened in the air; and at length they were led to ascribe a divine power to them, saying that their rain was from such and such a star, which expression Mahomet condemned and prohibited. The old Arabians, therefore, seem to have made no farther progress in astronomy, which science they afterwards cultivated with so much success and applause, than to observe the influence of the stars on the weather, and to give them names: so that they became astrologers and magicians, rather than astronomers. The infancy of science is generally infected with an inclination to the marvellous; accordingly, in Arabia, pretended sages arose who boasted of understanding the language of birds; and others, profaning the name and office of prophet, retired into caverns and deserts, where, after long fastings and painful macerations to gain the favour of the deity, they were gratified with visions, which they solemnly related to the multitude, who could not discern the impostor concealed under the figure of a pale and haggard being, often covered with wounds and ulcers which they fondly and foolishly imagined to be the marks of sanctity. It was likewise in that part of Arabia, which borders on Egypt, that the swarms of adventurers started up, who, wandering on the globe, without a native home, under the appellation of gypsies and fortune-tellers, procure a wretched livelihood by their tricks from the stupid vulgar. It was with arrows, divinity rods, philters, amulets, and charms, that these vagabond impostors, by pronouncing certain mysterious words, practised their magical operations, and imposed on the credulity of mankind in an *age of ignorance*: such was the Arabian expression for the period that preceded the time of Mahomet. The Arabians, even in a later period, destitute of books and instruments, have made little progress in astronomy. Although it is known to all men of sense in Arabia, that eclipses are owing to the interception of one heavenly body by the interposition of another, yet the multitude still maintain the absurd opinion, that a huge fish pursues the planet which is eclipsed; and women and children ascend the roofs of their houses, and make a hideous noise with brazen kettles and basons, in order to chase away the fish. The Arabians, indeed, at this time, seem to study astronomy solely with a view to their success in the cultivation of astrology, which is a science highly esteemed, and very lucrative, in the east. The occult sciences, as they are called, are in high estimation.

tion among the Arabians. One of these is denominated "Ism Allah," or the science of the name of God, which is the most sublime of all: for God, they say, is the lock, and Mahomet the key: and consequently none but Mussulmans can acquire it. It enables its possessor to discover what is passing in the most distant countries, to make himself familiar with genii, and to oblige them to obey his pleasure; to dispose of the winds and seasons as he chuses; and to cure the bites of serpents, and many other diseases and infirmities. To this science, the absurdity of which is evident from the mere mention of it, belongs also the art of discovering hidden treasure; and in this the Magrebins, or Arabians of Barbary, are known to excel. The art of procuring sublime visions is also known to the Arabians. The second of the occult sciences, called "Simia," teaches juggling tricks, and this is practised even by some orders of the dervises to prove the truth of their religion and the sanctity of the founder of their order. The science of "Kurra" teaches a person to compose billets which secure him that wears them from the power of enchantment, and from all sorts of accidents. These billets are inclosed in small purses of skin, and worn on the head, arm, or breast; and bound for particular purposes upon the necks of horses or asses. The science of "Rame" is the art of fortune-telling; and that of sorcery is called "Sihhr," which is applied to many infamous purposes. Alchemy is still in vogue among the Arabians.

The grave and serious sciences that depend on calculations and reasoning could not make any great progress among a people governed by an imagination always heated, and almost incapable of direction and restraint. These sciences, banished from the climate bordering on the tropic, have been replaced by the agreeable arts that delight in the irregularities and disorders which astonish the mind, and captivate the heart. In Arabia we find the cradle of poetry and eloquence, which had scarcely appeared before they arrived at a sudden maturity. The Arabs are all poets and orators; for an account of the poetry of the Arabs, see *ARABIAN Poetry*. Among the ancient Arabs, eloquence was an accomplishment for which they valued themselves. Their orations were of two sorts, metrical and prosaic: the one being compared to pearls strung, the other to loose ones. They attempted to excel in both; and whoever was able, in an assembly, to persuade the people to a great enterprise, or to dissuade them from a dangerous one, or gave them any other salutary advice, was honoured with the title of "Khatib," or orator, which is now given to the Mahometan preachers. They pursued a method very different from that of the Greek and Roman orators; their sentences being like loose gems, without connection; so that this sort of composition struck the audience chiefly by the fulness of the periods, the elegance of the expression, and the acuteness of the proverbial sayings; and so confident were they of their pre-eminence in this way, that they would not allow any nation to understand the art of speaking in public, except themselves and the Persians; and the Persians were reckoned, in that respect, says Pococke (*Spec.* 161.), much inferior to the Arabians. In Arabia, eloquence is not now much cultivated. Occasions for the exercise of it very rarely occur. The Arabians, however, tell us that they have great orators in their mosques. The only theatres for the exercise of profane eloquence are the coffee-houses, which are commonly large halls, having their floors spread with straw mats, and illuminated at night by a multitude of lamps. The guests are served with pipes and a cup of coffee. They are also amused by readers and orators, who are commonly "Mullahs," or poor scholars, and who either read or repeat passages from some favourite authors, or recite tales and

fables of their own invention. When the orator has ended, he obtains a voluntary contribution from his hearers.

It was Arabia that gave birth to the Apologue, a method of instruction, which, in all ages, has been in use among the oriental nations, who love to conceal under a mysterious veil the most trivial subjects, in order to give them an air of dignity. The Arabs especially have displayed their subtilty in the solution of enigmas. They boast of having produced a Lokman, surnamed "Al Hakim," i. e. the wise or the sage, whose features bear too great a resemblance to those of Æsop, to admit a doubt concerning the identity of their persons. Some, however, have thought it more likely that the compiler of these fables had seen those of Æsop, and chose to insert some of them in his own collection. This celebrated fabulist has served as a model to all those who have come after him; and the Arabians have thus, guided by their own genius alone, drawn from its native funds those riches which others have reciprocally borrowed of their neighbours. For the Arabic characters, chronology, language, music, philosophy, physics, poetry, and religion; see the following articles.

The mechanical arts could not well be brought to any considerable degree of perfection among a people who knew but few wants. As their productions are less splendid than useful, it is rather in towns than in the bosom of deserts that they grow up, because necessity is the parent of industry. The Arabs, entirely occupied in warring against man and beast, excelled only in the manufacture of scymetars, bows and arrows, and darts; nor, as it has been already observed, have they made any great progress in modern times. Their cotton stuffs were never greatly esteemed; and few of their other manufactures are the produce of the skill and labour of native Arabians. Sale's Koran Pref. Anc. Un. Hist. vol. xvi. p. 242—327. Asiatic Researches, vol. ii. p. 1, &c. Niebuhr's Travels through Arabia, &c. passim. Pinkerton's Mod. Geog. vol. ii. p. 405—430.

ARABIC, or ARABIAN, something that relates to Arabia, or the Arabs.

ARABIC Characters or Figures, are the numerical characters commonly made use of in arithmetical computations; and they stood contradistinguished from the Roman. Concerning the origin of these figures, see *FIGURES*.

ARABIC Chronology. The Arabs divided their year formerly, as is now the case, into twelve months, to which they gave names; but an ancestor of Mahomet gave them new names deduced from certain events happening in every month; and the old ones were, by the authority of Mahomet, totally abolished in every part of Arabia. The year was also anciently divided into six seasons, viz. 1. The season of herbs and flowers; 2. Summer; 3. The hot season; 4. The season of fruits; 5. Autumn; 6. Winter. The ancient Arab year was lunisolar; but the custom of intercalary months, in order to make the course of the moon agree with that of the sun, was abolished by Mahomet; and the learned now reckon by months corresponding to the course of the solar year, and consisting of the same number of days with ours. See *YEAR*. The Arabs, like the Egyptians, Indians, Greeks, and Romans, anciently computed their time by weeks, or periods of seven days, as we learn from a very ancient poet, who died many ages before the publication of the Koran. The Arabian day consists of twenty-four hours, and lasts from sun-setting to sun-rising; so that their hours are of uncertain duration, and vary with the length of the natural day, or the time during which the sun is above the horizon. The different parts of the day, as they have no precise idea of the duration of their hours, are distinguished by vague and uncertain denominations.

ARABIAN Gulf. See RED Sea.

ARABIC gum, *gum Senegal*, *gummi Arabicum*, *Acacie vera succus*. This valuable article of commerce is a very pure concrete mucilage, which exudes from the *Mimosa Nilotica*, or *Acacia Vera*, a tree that grows abundantly on the sandy soil of Egypt and Arabia, on the banks of the rivers Senegal and Niger, near the Cape of Good Hope, and in several other parts of Africa. The fruit of the same tree also yields another mucilaginous juice, but at the same time considerably astringent, and of a brown colour, which has been already mentioned under the article ACACIA.

The purest gum arabic is brought in caravans to Cairo by the Arabs of the country around mount Tor and Sinai, who bring it from this distance on the backs of camels, sewn up in bags of skin, and often adulterated with sand and other matters.

The settlement at Senegal is another great mart for this commodity; and the gum, which bears the name of this place, is generally in larger masses, and of a yellowish or amber colour, but it does not sensibly differ from the Egyptian gum in any of its properties.

This mucilage exudes spontaneously in a liquid state from the trunk and boughs of the tree, and hardens by contact with the air and the heat of the sun. It begins to flow about December, immediately after the rainy season, near the flowering time of the tree. Afterwards as the weather becomes hotter, incisions are made through the bark, to assist the transudation of the juice.

The best gum arabic is brought over in oblong or roundish lumps seldom bigger than a walnut, nearly transparent, white, or of a pale yellow, wrinkled, and of a shining fracture. It is so brittle as easily to be reduced to a fine powder. It is also perfectly insipid and inodorous, dissolving in the mouth into a clammy liquid.

As the gum arabic is the most perfect specimen of a *gum MUCILAGE*, all the properties which we shall now mention to belong to it, may be considered as descriptive of this whole class of chemical substances.

The habitudes of this gum with water affords one of its most striking characters. When added to water, either cold or hot, and not less than twice its weight, it dissolves slowly, and converts the whole into a very slimy viscid liquor. Heat does not coagulate this solution; a gentle evaporation will expel the water and leave the gum as solid and brittle as before, equally resolvable in water, and unaltered in any of its properties. In this respect it differs in a striking manner from most other vegetable substances.

It is entirely insoluble in ardent spirit and in oils; alcohol indeed coagulates the watery solution, by uniting with the water, and thus precipitating the gum.

Gum mucilage is but little inflammable, when put into the fire it swells and grows puffy, and soon is reduced into a voluminous coal. Distilled *per se* in a retort, it first yields a limpid water, then an acid (which was at one time supposed to be peculiar, and was termed the *Pyro-mucous*), and afterwards a thick empyreumatic oil, and a little volatile alkali, like all the distillations of vegetable matter.

The pure gum mucilages, when dry and solid, will remain unchanged for any length of time: the watery solution is likewise the least alterable of all the vegetable liquids; but by long keeping it becomes sour and grows mouldy on its surface, if it is prevented from drying up by the evaporation of its water.

When nitric acid is distilled off gum arabic, or any other of the gum mucilages, a peculiar acid is formed, which appears as a white powder of difficult solution, and has been termed the *Mucous acid*. It is the same with the *SACCHOLACTIC acid* of Scheele.

The specific gravity of the solid mucilages, according to Fourcroy, is from 1.3 to 1.48.

The gum which exudes in considerable abundance in our own climates from the apricot, plum and cherry trees, bears the strongest resemblance to the gum arabic in all its properties, only it is generally of a yellow colour, not so brittle, and forms a mucilage of somewhat less tenacity.

Gum arabic is employed for a number of valuable purposes both in the arts and in medicine. It may be used either to suspend in water a number of substances which could not otherwise be kept equally dissolved in this liquid, or as a means of glueing together a variety of articles of light work; and as a clean colourless cement perfectly easy of application, and which may be prepared in a few minutes, it is peculiarly valuable. Gum Senegal is used in very large quantities by the calico printers, to mix the colours and the mordants in block printing; gum arabic forms the basis of crayons, and the cakes of water colours, and of several liquid colours, of which common writing ink is a familiar example.

All the gum mucilages are considerably nutritious; in the countries where the gum arabic and senegal grow native, it forms an important article of food, either by itself, or mixed with milk, rice, &c. Hasselquist relates an instance of the travellers of a large caravan, who had consumed all their provisions in the middle of their journey, preserving themselves from famine by the gum arabic which they were bringing as merchandise.

In medicine, this gum is employed, either by itself, or as a vehicle for other substances. Taken internally, it has been supposed to be inassating and obtunding; qualities, however, which probably have little foundation in fact and real observation. As it is simply mucilaginous, it will certainly in some degree protect the parts with which it comes in contact from the effect of any acrid and stimulating substances; and thus it is of use in quieting the tickling cough which arises from any acrimony in the fauces, and in some cases it is of material service in diarrhoea and dysentery. It is given either in powder, or dissolved in water, almond milk, &c.; and one ounce of the gum is sufficient to give a considerable thickness to a pint of liquid, without making it too slimy to drink with pleasure.

In pharmacy, gum arabic possesses the valuable property of rendering miscible with water the balsams, resins, fixed oils, and similar substances, whereby they may be very commodiously taken in a liquid form. One part of gum arabic previously softened with water (or an equivalent quantity of the mucilage), will thus render four parts of balsam or oil soluble in any watery liquid, and will form an uniform emulsion. Even mercury may be thus suspended in water by being previously rubbed for a considerable time with gum arabic, which preparation is called, from the inventor, *Plenk's solution*. The corrosive acids, when taken internally, are best diluted with a solution of this gum.

The pharmaceutical preparations, in which gum arabic enters as a principal ingredient, are the *Mucilago gummi Arabici*, a simple solution of one part of the gum in two parts of boiling water; the *Emulsio Arabica Ph. Edin.* which is gum arabic dissolved in almond milk; the *Trochisci Arabici*, with gum arabic, starch and sugar; and the *Pulvis tragacanthæ compositus Ph. Lond.* a powder made of tragacanth, gum arabic, starch, and sugar. *Murray Appar. Med. Fourcroy, &c.*

ARABIC language is derived from the same stock with the Hebrew, Syriac, and Chaldaic tongues. Its near affinity to the Hebrew is almost universally acknowledged, and some have even maintained, that it was not only a sister dialect of

this language, but in its original and unsophisticated state, pure Hebrew. Of course it must unquestionably be one of the most ancient languages in the world. The Arabs, by whom it was spoken, having inhabited the country now possessed by their descendants almost from the deluge, without intermixing with other nations, or being subjugated by any foreign power, their language must have been formed soon after, if not at the confusion of Babel. The Arabian writers ascribe it to Joktan, the son of Eber, and its name to Yarab, the son of Joktan or Kahtan, supposed to be the same that is mentioned, Gen. x. 26. This opinion is adopted by many learned moderns. See Hunt. *Orat. de Antiq. et Eleg. Ling. Arab.* p. 1. Pococke *Spec. Hill. Arab.* p. 29. Bochart in *Geog. Sacr.* c. ii. c. 15. Golius, in *Lex. Arab. Schultens*, in *Orig. Hebr.* The two principal dialects of this language were, that spoken by the Hamyarites and other genuine Arabs, and that of the Koreish in which Mahomet wrote the Koran. The Hamyaritic dialect is supposed to have approached nearer to the purity of the Syriac, and consequently to have been more remote from the true genius of the Arabic than that of any other tribe. The dialect of the Koreish, usually termed the pure and ancient Arabic, and in the Koran the perspicuous and clear Arabic, is referred to Ishmael as its author, who, according to the oriental writers, first spoke it; and, as Dr. Pococke apprehends, after he had contracted a matrimonial alliance with the family of Jorham, formed it of their language and the original Hebrew. This latter dialect of the Koreish was conceived to consist chiefly of the Hebrew; but its politeness and elegance should rather be attributed to their having the custody of the Caaba and dwelling in Mecca, the centre of Arabia; for by their situation, they had less intercourse with foreigners, who might have corrupted the language, and were more frequented by the Arabs of the whole circumjacent country, who resorted to Mecca on a religious account, and for the accommodation of their differences; from their discourse and verses the Koreish took the words and phrases which they judged to be most pure and elegant, and thus the beauties of the whole tongue were transfused into this dialect. Other circumstances also contributed to the improvement of this dialect. Of the pilgrims who resorted to Mecca, many were of the first rank, and possessed all the science of their country and age. In the great feasts which were held during their stay in this city, a variety of amusements occupied their attention, and literary compositions, which called forth an emulation to excel, formed some of their principal entertainments on these occasions. Hence the dialect of the Koreish, the noblest and the most learned of all the western Arabs, became the purest, the richest, and the most polite of all the Arabian idioms; and about the beginning of the seventh century, it was the grand language of Arabia; the other dialects being either gradually disused, or incorporated with it. By this union, and by commercial intercourse with Alexandria, the seat of learning, and with other places where they might obtain an acquaintance with Grecian literature, the Arabic language acquired a fecundity and also an elegance, in a great degree peculiar to itself.

The Arabs are so extravagant in the commendations of their language, that they not only represent it as peculiarly harmonious and expressive, but they also say, that it is so copious and comprehensive, that no uninspired person can be a perfect master of it in its whole extent. To this purpose it has been alleged, that this language has 500 names for a lion, 200 for a serpent, more than 80 for honey, and above 1000 for a sword. Nevertheless, the Arabs believe that the greatest part of their language has

been lost; and this opinion is not very improbable, when we consider how lately the art of writing was introduced into Arabia. To this purpose Dr. Robertson (*ubi infra*) has observed, that the genius of the Arabic language resembles that of the Hebrew; as all its primary or radical words are composed of different combinations of consonants by *triads*, so that the various combinations and copulations of three letters form more than 10,000 roots, without including those which may arise from the concomite of guttural letters. To this quality of the language he partly ascribes that stability or permanence which this language possesses in common with the Hebrew, by reason of which it has retained its purity and integrity for so many thousand years, without those changes and fluctuations to which other tongues have been subject. Sir William Jones also observes (*Asiatic Researches*, vol. ii. p. 6.), that as the Arab roots are universally trilateral, the composition of the twenty-eight Arabian letters would give 22,000 elements of the language; and this circumstance demonstrates its surprising extent; for although great numbers of its roots are confessedly lost, and some perhaps were never in use, yet if we suppose 10,000 of them, without reckoning quadrilaterals, to exist, and each of them to admit only five variations, one with another, in forming derivative nouns, even then a perfect Arabic dictionary ought to contain 50,000 words, each of which may receive a multitude of changes by the rules of grammar. To this circumstance it is probably owing, that the Arabic, and also all its sister dialects, abhor the compositions of words, and invariably express any complex ideas by circumlocution; and this genius of its language has been one source of its copiousness and extent. And yet, notwithstanding the variety of its words, in which it is far superior to the Greek and Latin, and indeed to most other languages ancient and modern, it is equally distinguished by its perspicuity and precision. This excellence of the ancient Arabic, this union of brevity and variety, by which it is able to express with clearness and energy what could not be described in other tongues without hideous circumlocutions, is particularly mentioned and illustrated, among other distinguishing qualities of this language, by the learned Pococke in his "Oration on the Arabic language."

Dr. Robertson has cited an apposite passage to this effect, which is here subjoined for the satisfaction of the curious and learned reader. "Neque in nullâ certè laudis parte, mira illa (inquit doctissimus Pocockius), quâ non solum verborum in significando perspicuitati, sed in prolacione elegantiae et dulcedini cavent, sedulitas; quâque non solum accuratâ inter literas et significatâ proportione, sensus vel intentioni vel remissioni, prout res postulaverit, literarum appositione, subductione, vel juxta organorum ratione, prospexerunt; sed et nè quid delicatulis auribus ingratum, nè quid horridum aut ασχημον reperiatur, effecerunt. Hoc in genere est, quod nuspiam in verbo aliquo, genuinae apud Arabes originis, concurrant, non intercedente vocalis alicujus motione, consonantes, cum vel tres vel plures, aliis in linguis frequenter colliduntur. Immo neque, si adint, quæ asperitatis remedio sint, vocales, quælibet tamen temere committunt consonantes; sed si ita rei natura postulat, ut concurrere debeant illæ, quæ se invicem sine asperitatis alicujus inductione consequi, et inter se connecti non possunt, illi vel situs vel literarum mutacione, eas abjiciendo, inferendo, emolliendo, aliiive quibus possint modis, remedia quærunt; adeo ab omni, quod vel absonum vel dissonum est, abhorrent. Quod si nobis secus videatur, et asperius sonare ab Arabibus prolata, illud auribus nostris et usu, non linguæ imputandum; nec mollius illis sonare nostra, quam eorum nobis censendum. Quin et gutturalium, quæ

nobis maxima asperitatis causa videntur, absentiam, ut magnum in lingua Græcâ defectum, arguunt Arabes." The learned Dr. Hunt, late professor of the Hebrew and Arabic languages at Oxford (in his *Orat. de Ling. Arab.* p. 17.), expresses his opinion of the excellencies of this language much to the same purpose: "Nusquam mihi credite (inquit), auribus magis pareatur, quam in Arabiâ; nulla lingua a *κκκοφνωια* omni alienior, quam Arabica. Quamquam enim nonnullæ ejus literæ minùs fortasse suaviter, immo duriùs etiam sonuerint, ita tamen Arabes eas temperârunt, ut asperas cum lenibus, duras cum molibus, graves cum acutis, miscendo, voces inde non minùs auditu jucundas, quam pronuntiati faciles confecerint, totique sermoni miram sonorum tam dulcedinem quam varietatem addiderint. Quod quidem orationis modulandæ studium in Corano adeo manifestum est, ut primi Islanissimi oppugnatores cum libram magicâ ideò arte scriptum dixerint. Nec auribus tantum gratus est Arabismus, sed et animi conceptibus exprimentis aptus, sonos suos sententiis semper accommodans, et felici verborum juncturâ ipsam rerum naturam depingens." It is needless to multiply testimonies of a similar kind, extracted from the writings of Bochart, Erpenius, Golius, Schultens, &c.

Some have maintained that the Arabic tongue descended from the deluge to the time of Mahomet in its original purity; but that it should remain altogether unsophisticated for a period of more than 3000 years, is not very probable. Whatever care might have been taken of it, however tenacious the Arabs were of their ancient customs and institutions, and however favourable their situation might have been for preserving the language unmixed, it is not likely, nor indeed can we conceive it to be possible, that it should have escaped a variety of changes in that long period; or that it should have not acquired in its progress downwards from the mere lapse of time, from necessary or voluntary intercourse with distant and neighbouring nations, and from a variety of other causes, diminutions or additions, or intermixtures, which render the words, idioms, and phraseology of the Koran very different from the Hebrew, Syriac, or Chaldaic, to either of which the ancient Arabic must have been nearly allied. But these changes affected merely or principally the dialects of the language, whilst the substance or marrow of it, as Schultens calls it, remained untouched; and comprehended the letters, vowels, and pronunciation. Dr. Robertson, professor of oriental languages in the university of Edinburgh, in an elaborate dissertation, "*De Origine, Antiquitate, Conversatione, Indole, et Utilitate Linguae Arabicæ*," prefixed to his "*Clavis Pentateuchi*," is an able and zealous advocate for the unsophisticated purity of the ancient Arabic; inasmuch that it did not degenerate from its original purity in the same manner as the Spanish, Italian, and French dialects have degenerated from the Latin stock. This opinion is sanctioned by the authority of the learned Schultens, in his *Orig. Heb.* vol. ii. p. 20, 21. *Orat. Ling. Arab.* p. 28. and by several others, who have been best acquainted with the structure of the Arabic language, and with the history of the ancient Arabs. Without deviating into the unfounded extreme of Hutchinson, who ascribes a comparatively modern origin to this language, and traces it no higher than the age of Mahomet, we may allow that such changes as have been already mentioned might have been introduced into it, without disputing its antiquity, or upon the whole its uncorrupted state for many ages previous to the time of Mahomet. This celebrated impostor indeed makes his boast, that the language of the Koran was the same, with respect to its purity and perfection, with that which was anciently used by Abraham and Ishmael. Dr. Robertson (ubi supra) maintains, that the Arabic language

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used by Mahomet was the same with that of the Joktanites and Ishmaelites; and, in support of this opinion, he refers to seven poems written before his time, and suspended in the temple of Mecca, intitled "*Moallekat*," and still extant at Paris and Leyden; and also to ancient monuments found near Aden in Arabia Felix, of which an account was published by Schultens in his "*Monumenta Venerabiliora Arabiæ*," 4to. Leyden, 1740.

The learned Hyde is also an advocate for the affinity of the Arabic to the Hebrew, and also for its permanent purity. To this purpose he says (*Dissert.* vol. ii. p. 454, &c.) that the Arabic is more pure and unmixed than any other, allowing merely for some Persian medical terms, and for a few Latin words which it acquired by means of the wars and negotiations between the Arabians and Romans. In other respects, he says, it is pure and free from mixture; and this he ascribes partly to the number of books and writers who preserved it entire, partly to the cultivation of it by the Arabs, who were devoted to poetry and eloquence, and partly also to the desert, inaccessible, and un subdued country which they inhabited.

Since the age of Mahomet, it is an acknowledged fact, that all the dialects of the Arabic have been greatly corrupted, so that the language in which the Koran was written is become a dead language, and studied in the colleges of Arabia just as the European Christians acquire the Hebrew, Greek, and Latin. It is not easy to conceive how the identity and purity of a language could be preserved for many ages among a people who had no written characters. Among the Hanyarites or Homerites, who for many centuries had possession of the principal part of Arabia, the art of writing seems, indeed, to have been known at a very early period. Their character was perplexed, the letters not being distinctly separated; and from the mutual connection and dependence of the letters and their several parts, it was denominated "*Al Mofaad*." But this alphabet was neither publicly taught, nor suffered to be used without permission. It corresponded in the number and order of the letters to the Hebrew alphabet, and was called "*Abgad Hevez*," from the first Hebrew letters in their natural order, viz. אבגדה. According to Chardin (vol. iii. p. 54.), the first word is formed by the letters, A, B, G, D, which were formerly the first of the Arabic language, as they are still of the Hebrew. These, according to this learned traveller, were the ancient characters of the Arabs, and differed from the Cufic characters which were afterwards introduced; and he is of opinion that they were furnished with vowel points. Some ancient monuments are said to be still remaining of this character, which Pococke apprehends to have been the rude Chaldaic in its unimproved and unpolished state. To these Job is supposed to refer, ch. xix. v. 23, 24; and Ebn Halthem relates that an inscription in this old Arabic character was found in Yemen, as ancient as the time of Joseph. These traditions may have led some authors to conclude, that the Arabians were the inventors of letters; and Sir Isaac Newton (*Chronology, Oper.* vol. v. p. 155. Ed. Horsley) supposes that Moses learned the alphabet from the Midianites, who were Arabians.

The Koreishites and other Arabs, some Jews and Christians excepted who were called the people of the book, were for many ages ignorant of the art of writing, and do not seem to have acquired it till the sixth century. Moramer Ebn Morra of Anbar, a city of Irak, who lived not many years before Mahomet, was the inventor of the present Arabic character, which Bashar the Kendian is said to have learned from those of Anbar, and to have introduced at Mecca among the Koreishites, a little while before the institution of Mahometanism. The letters of Moramer

were different from the Hamyaritic; and though far from being either convenient or beautiful, they were long used by the Arabs. They were denominated Cufic from Cufa, a city of Irak; and in this character the Koran was first written. These letters are also used occasionally, at this day, by the Arabs for the titles of books and public inscriptions. The more elegant and expeditious character that is now used, was first formed from the Cufic by Abuali Ebn Moklah, vizier to the caliph of Bagdad, about 300 years after Mahomet, and perfected by Ali Ebn Bowab, who died in the year of the Hegira 413, A. D. 1022. Herbelot, Sale, and Dr. Hunt inform us, that the person, who completed and reduced it to the form in which it now exists in some of the most beautiful copies of the Koran, was Yakut Al Mofafemi, the last of the caliphs of the family of Abbas, a little after the year of the Hegira 640, A. D. 1242; for which reason he obtained the appellation of "Al Khattat," or the scribe.

Concerning the æra of the invention of the Arabic vowel points, there has been a difference of opinion among the learned. Hottinger (Tract. Philolog. p. 400. 4to. Tiguri, 1659) maintains and adduces testimonies from the Arabian writers to prove, that vowels were in use from the most ancient times. But they are not now the same as they were formerly. A single point, in the most ancient copies of the Koran, denoted different vowels, according to its position above, below, or within the letter. Schultens (Clav. Dialect. p. 323, &c.), speaking of the improvement of the Arabian alphabet in the 10th century by Ebn Moklah, says, that its form, at this time, underwent a change; and that its former clumsy embarrassed character was made to give way to the polished, easy, and expeditious type. Regarding this expedition alone, the author of the invention left very few vowel characters; and as the Hebrew mode of writing admits five long ones and five short ones, in different shapes, he taught how to express all the vowels, both long and short, agreeably to the genius of the language, by three, or rather by two, small points, without any danger of mistake; an abbreviation truly admirable, and worthy of being recorded! For by placing a small line above **ب**

he expressed the sounds of *a* and *e*, and by placing the same below, **ب** he meant to express *i* only. To the other short ones

o and *u*, he assigned a small *waaw* or *w* above, as **ب**

For representing the long ones, he used the "matres lectionis," or quiescent letters, **ا, و, ي**. So that *phata* with *elif* expressed *a* and *o* long, that is *kametz* and *hbolem*; and *jod* placed after *kefrani* became *tzeri* and *chirek* long, and *waaw* added to *damma* became *schurek*. From this statement we may infer that, before the tenth century, the Arabians had no vowel points; and consequently that they read without vowels, or contented themselves with the "matres lectionis" above mentioned. Dr. Gregory Sharp, in his "Dissertation upon the Origin, Construction, &c. of Languages," p. 87, expresses his opinion, that the Arabians were the original authors of the vowel points; and that they invented three called *fatba* (*a*) and (*e*), *damma* (*o*) and (*u*), and *kefra* (*i*). But these, he conceives, were not in use till several years after Mahomet; for the first copies of the Koran were without them. The rabbins, he adds, stole them from the Arabs. Capellus, Walton, Simon, and others are of opinion, that all the vowels were expressed by the three letters **ا, و, ي**, called "matres lectionis." But it has been alleged, that these three letters have, in the Koran and in other punctuated copies, various vowel points

annexed to them: whence it is inferred, that they are consonants. See POINTS.

The importance and utility of an acquaintance with the Arabic tongue cannot be disputed. To the divine, such is the affinity between this language and the Hebrew, it must be of great use in explaining and interpreting the scriptures of the Old Testament. How much Schultens has availed himself of his knowledge of this language in the illustration of the book of Job, and also of the Proverbs, those will readily allow who have examined his learned commentaries on these books. There are also many valuable works to which the Arabic scholar may have access. And to those who travel for purposes of curiosity or commerce into those parts of the east, the knowledge of this language must be peculiarly useful. But the acquisition of it, it may be justly said, is attended with great difficulty. For the knowledge, says Sir William Jones (Asiatic Researches, vol. ii. p. 4.), which any European may, at his pleasure, obtain of the Arabic language, we are principally indebted to the university of Leyden. Schultens, Erpenius, and Golius, to whom we may add Richardson of our own country, will afford him all necessary assistance, and enable him to understand Arabic better than the most profound scholar at Constantinople or at Mecca. Niebuhr informs us, that the dialect spoken at Mecca in the days of Mahomet differs very widely from the modern language of Arabia. That of the highlands of Yemen has the strongest analogy to the language of the Koran; because those highlanders have little intercourse with strangers. The old Arabian language is, through all the east, a learned tongue, to be acquired only in colleges, or by the perusal of the best authors. Perhaps there is no other language diversified by so many dialects as that of Arabia; and the pronunciation of one province differs as much as the dialect from that of other provinces.

ARABIC, or ARABIAN learning, is divided into two states, or periods, viz. Ante Mahometan, and Mahometan.

The *Arab* learning in the first period, called the time of ignorance, consisted, according to Abulpharagius, in the knowledge of their language, the propriety of discourse, the composition of verse, and the science of the stars: but their chief attention seems to have been directed to *oratory* and *poetry*. Hist. Dynast. Renaudot de Barbar. Arist. vers. Fabricii Bibl. Græc. lib. vi. cap. 5. § 6.

The second period is more distinguished, at least from the time of Al Mamon, the seventh caliph of the family of the Abbassides, who flourished about the year 820, and has the honour of being the founder of the modern Arabian learning. Almanzor, about fifty years before Al Mamon, commenced the literary reform, when he moved the imperial seat from Damascus to Bagdad; and when he extended the Arabian literature, which had been confined to medicine and a few other branches, to sciences of every denomination. His grandson, Al Mamon, completed the work which was only begun, and sent for all the best books out of Chaldea, Greece, Egypt, and Persia, relating to physics, astronomy, cosmography, music, chronology, &c. and pensioned a number of learned men, skilled in the several languages and sciences, to translate them into Arabic. By this means, divers of the Greek authors, lost in their own country and language, have been preserved in Arabic. The eastern conquerors carried their empire from Asia even into the remote regions of Spain; and letters followed them wherever they went. Elmac. Hist. Sar. lib. ii. cap. 8. Leo Africanus de Viris illust. ap. Arabes, cap. 1. Fabricii Bib. Græc. lib. vi. cap. 9. Grav. in Præf. ad. Tab. Geog. Voss. de Sect. Phil. cap. 3 § 17. See AL MAMON.

From that time Arabia became the chief seat of learning; and

and we find mention by Abulpharagius, Poccocke, D'Herbelot, and Hottinger, of learned men, and books without number.

The revival of learning in the tenth century, by Gerbert, known after his elevation to the pontificate by the title of Silvester II. and afterwards among the Europeans in general, may be ascribed to the instructions and writings of the Arabian doctors and philosophers, and to the schools which they founded in several parts of Spain and Italy. And in the twelfth century, the inquisitive of different countries frequented the schools of the Saracens in Spain, and disseminated the knowledge which they obtained there, after their return. At this time, many of the learned productions of the Arabians were translated into Latin, which facilitated the general progress of science.

ARABIC or ARABIAN *logic*, was that of Aristotle, as explained by Avicenna and Averrhoes. As the Arabians applied themselves to this branch of science, they became proficient in the knowledge of words rather than things. Whence they have been sometimes denominated, "masters of the wisdom of words;" and sometimes the talking sect.

ARABIC *marble*, *Arabicum marmor*, a name given by the ancient Greeks to a species of marble brought from Egypt and Arabia, and remarkable for its beautiful whiteness.

ARABIAN *music*. In the Encyclopedie Methodique, we have a long article on this subject, chiefly taken from the *Essai on Music*, by M. la Borde. If, in a careful perusal of this article, we had been able to discover any essential qualities in this music that would improve our scale, intervals, melody, harmony, measures, or the tone of our voices or instruments, we should sedulously have studied and adopted them. But notwithstanding the inflated praises bestowed on their music, by their own and the Persian poets, and the parade with which the Arabian scale and musical terms have been exhibited, we do not find ourselves much enlightened by the perusal. Indeed we are inclined to imagine that music in Europe has been cultivated with so much more success than that of any other quarter of the globe; our instruments, our harmony, and our melody, are arrived at such a superior state of perfection, that to abandon or neglect them for any refinements or properties which the music of Asia, Africa, or America could furnish, would indeed be letting our corn-fields lie fallow, and feeding on acorns; or throwing aside the poetry of Milton, Dryden, and Pope, to read and imitate only Chaucer, Gower, and Lidgate.

As national tunes, the airs of the Arabians, Turks, and Persians, would amuse curious inquirers after exotics; but as to their theory, practice, and taste, faith in their excellence is wanting to make us imagine them worth the time and labour necessary to their acquisition. If, therefore, the article Arabian music has not been further extended, and should disappoint our readers by its brevity, the concessions made by M. Ginguené, who has compiled and digested the article in the new Encyclopedie, will a little abate their curiosity, and apologize for our want of time and zeal to investigate this music.

After giving us the scale and technica of the Arabian music in the language of the country, but expressed in letters of the French alphabet, M. G. says; "The Arabians, like other oriental people, never pass from one sound to another, however distant, either in rising or falling, without running through all the intermediate intervals. These continual slides of the voice, which to us are insupportable, constitute, according to them, the charm of their music, and grace of their melody." Now the difficulty and effects of such meandering or mewling passages will be easily conceived by our readers, from what follows in the article of M. G. "From

C to D they reckon four intervals; from D to E the same, and from E to F two." So that it is all done in quarter tones, or the enharmonic genus and scale. And where shall we find voices or instruments to furnish these intervals? "They have no knowledge of harmony (continues M. G.), and in their concerts, all the parts are performed in unisons and octaves, and all on stringed instruments; of which they sometimes sweep the whole number, to produce more or less effect, or at least more noise, which necessarily occasions a discordance, to which, from their ignorance of harmonic chords, their ears are insensible." Their instruments are chiefly those of percussion, or thrummed with the fingers or nails; they have, indeed, a flute, called *Mai*, with ventages. The tube is a section of a reed, with a mouth-piece of horn. It is to the sound of this flute that the dervises dance. Two or three musicians are placed in a gallery that surrounds the mosque. The *Iman* is stationed in the midst of the dervises; he gives the signal, the *Nais* begin to sound, and the dervises turn round with extreme rapidity. The *Iman* gives another signal, the flutes then cease to sound, and the dervises stop, and throw themselves into a particular attitude.

They have an instrument which resembles a lute, to which they assign more marvellous effects than the Grecians did to the lyre of Apollo. "They tell you, with the utmost gravity, that each of the strings of this instrument, four in number, has particular virtues: the first, for instance, acts as a specific against bile and phlegm; the second is a sovereign cure for the most inveterate melancholy and vapours; the third gives health and vigour to young people of both sexes; and, lastly, the fourth string affords relief the instant it is heard, to a sanguine temper and disposition."

But the power of these strings depends much on the manner with which they are pinched or thrummed; which, like the power of the bow on the violin, is attained by long and laborious practice. "They have a particular *pizzicato*, or pinch, for every action and passion; courage, liberality, and noble sentiments, by one mode of thrumming; love and pleasure by a second; the dance is inspired by a third; sleep and tranquillity by a fourth.

"At the distance which separates us from Arabia, and the difference in our ideas and sentiments (concludes M. G.), we can form no just conception of these fancied effects, from which we must doubtless abate much of the marvellous. What they ascribe to each instrument, string, and stroke of the fingers, and delicate shades of perfection, only convinces us, that they are a people endowed with a sensibility very different from ours."

ARABIC or ARABIAN *oratory*, according to Renaudot, consisted in a luxuriance of quaint, high-flown words, epithets, and descriptions. That the ancient Arabs were eloquent in a high degree, and that they possessed wonderful powers of speaking, without preparation, in flowing and forcible periods, is evident from their whole history. Their eloquence was an harmonious and cadenced prose, adapted to their ears, and accommodated to the genius of their language, and to the cast of their character, but can never serve as a model for foreigners. Their orators, like their poets, were honoured and rewarded; and their orations were much the offspring of the imagination, without concatenation in the arguments, but consisting of distinct sentences following one another without connection, and remarkable for abrupt antitheses, and for sudden and unexpected transitions, rather dazzling than enlightening. See *History of the ARABS*.

ARABIC or ARABIAN *philosophy* claims, according to some writers, and more particularly Ludwig, a very remote antiquity. On this subject the Greek writers are silent; but this, it is alleged, is a proof of their pride, and not of the barbarism of the Arabs. The Saracens themselves have

confessed, that before the rise of Mahometanism, their country was in a low state of civilization; and to this effect we have the testimony of Abulpharagius. Nevertheless, the advocates of the wisdom of the ancient Arabians have alleged, that from them, according to the relation of Porphyry, Pythagoras acquired a great part of his knowledge; that Moses fled out of Egypt into this country, and carried with him the wisdom of the Egyptians; that the queen of the east, who visited Solomon, was of Saba, a region in Arabia; and that the wise men, who paid their homage to Jesus, were from this country. Besides, their origin leaves no doubt concerning the culture of their minds; for as they were descended from Abraham, it is pretended that they must have derived from their common father, not only a philosophic spirit, but a considerable portion of science. To all which is added the acknowledgment of Abulpharagius, that even before Islamism, to which, in that country, is owing the revival of letters, they thoroughly understood their language, that they knew its value, and the several properties of it; and that they were good poets, excellent orators, and able astronomers. It is very possible, that the Arabians might have polished their language; that they were skilled in divination, and the interpretation of dreams; that they were successful in the composition and solution of enigmas; that they had even some knowledge of the courses of the planets; and yet have no just title to the character of philosophers: since all these arts, if they can deserve the appellation, tend rather to nourish and foment superstition, than to disseminate truth, and purge the soul from the tyranny of the passions. As to Pythagoras, nothing is more uncertain than his journey to the east; and if it were more unquestionable, we can only infer from this circumstance, that he learned from the Arabians the arts of divination, with which they, in common with other eastern nations, were well acquainted. If Moses went into Arabia, and settled there on marrying one of the daughters of Jethro, it could not be with the design of studying among the Arabians, or of gratifying their idle curiosity with philosophical systems. Providence permitted this retreat of Moses, for conveying thither the knowledge of the true God, and his religion. With respect to the remaining arguments, if they be allowed their utmost force, they will give the Arabians a very small share of the credit arising from the ancient philosophy of the east. But it has been further said, that there was in Arabia, at a very remote period, a sect of philosophers called Zabians or Sabians. But the existence of this sect is doubtful. No mention is made of it by Greek or Roman writers. We owe all our information concerning them to the Arabians, from whom Maimonides, the Jew, borrowed his account. The probable truth concerning them is, that they were a mixed body of Gentiles and Jews, who, to give the sanction of antiquity to their institutions, pretended to derive them from Sabi, the son of Seth. Their system of opinions was an heterogeneous mass, which must have been the produce of a period much later than that to which we now refer. See SABIANs. The Arabians, besides what has been already said of their science, in this article, and that of the *History of the ARABIANs*, seem, like the neighbouring Chaldeans and Persians, to have had their wise men, by whom their knowledge, such as they had, was taught, and their religious ceremonies and superstitious arts were practised. Pliny (H. N. l. xxx. c. 1.) mentions the Arabian magi, and speaks of Hippocus, an Arabian, as belonging to their order. It can scarcely be supposed, that the Arabians were unacquainted with moral wisdom. The fables of Lokman, mentioned in a preceding article, translated from Arabic into Latin by Erpenius, afford no inelegant specimen of the moral doctrines of the

Arabians; better adapted, however, to popular instruction than to the improvement of philosophy, which the Arabians do not appear to have cultivated, till the period when their government fell into the family of the Abbassides. Brucker's Hist. Phil. by Enfield, vol. i. p. 56. See the article ARABIAN learning. Sir William Jones (Asiatic Researches, vol. ii. p. 9.) says, that he finds no trace among them, till their emigration, of any philosophy but ethics; and even their system of morals, generous and enlarged as it seems to have been in the minds of a few illustrious chieftains, was, on the whole, miserably depraved for a century at least before Mahomet; the distinguishing virtue which they boasted of cultivating and practising, was a contempt of riches, and even of death.

ARABIC, or ARABIAN *physic* and *physicians*, succeeded the Grecian, and handed down the art to us, having made considerable improvements, chiefly in the pharmaceutical and chemical parts.

It is certain we owe to them most of our spices and aromatics, as nutmegs, cloves, mace, and other matters of the produce of India. We may add, that most of the gentler purgatives were unknown to the Greeks, and first introduced by the Arabs; as manna, senna, rhubarb, tamarinds, cassia, &c. They likewise brought sugar into use in physic, in which, before, only honey was used. They also found the art of preparing waters and oils, of divers simples, by distillation and sublimation.

The first notice of the small-pox, and the measles, is likewise owing to them. Lastly, the restoration of physic in Europe took its rise from their writings.

M. Le Clerc has given a sketch, and Dr. Freind an ample history of the Arabian physic. We have also a *notitia* of all the Arabian physicians by Fabricius.

Those who now practise the art of medicine in Arabia, know little more than the technical terms as they find them in the writings of Avicenna, and the use of simples. All the physicians in Yemen, Niebuhr says, acted at the same time as chemists, apothecaries, surgeons, and horse-doctors; and yet, by the practice of all these arts together, they could hardly earn a livelihood. A disease very common in Yemen, and ascribed to the use of putrid waters, is occasioned by the Guinea-worm; but it is not dangerous if the person that is attacked can extract the worm without breaking it. The leprosy seems to have been always an endemic disease in Arabia; and there is one species which authors distinguish by the character of Arabian. Three different variations of it are known there at present; of which two, named "bohak," and "barras," are rather disgusting than dangerous; but the third, called "juddam," is very malignant, and apparently infectious. The last prince of Abushahkr used to send to the isle of Bahrein all who were attacked with the leprosy, or with venereal complaints. At Basra, all lepers are shut up in a house by themselves; and in Bagdad there is a quarter surrounded with walls, and full of barracks, to which lepers are carried by force, if they retire not thither voluntarily; but government does not provide with due care for the maintenance of these lepers. Inoculation for the small-pox has been in use from time immemorial among the Bedouins: mothers perform this operation on their children, by opening the skin of the arm with the prickle of a thorn.

ARABIC or ARABIAN *poetry*, may be divided into two ages. The ancient, according to Vossius, was no other than rhiming; was a stranger to all measure, and rule; the verses loose and irregular, confined to no feet, number of syllables, or any thing else, so that they rhimed at the end; oftentimes all the verses in the poem ended with the same rhyme. It is in such verse that the ALCORAN is said to be written.

Poetry was in so great esteem among the ancient Arabs, that it was a great accomplishment, and a proof of ingenious extraction, to be able to express one's self in verse, with ease and elegance, on any extraordinary occurrence; and even in their common discourses, they made frequent applications of celebrated passages of their famous poets. In their poems they preserved the distinction of descents, the rights of tribes, the memory of great actions, and the propriety of their language; for which reasons an excellent poet reflected an honour on his tribe. So that as soon as any one began to be admired for performances of this kind in a tribe, the other tribes sent publicly to congratulate them on the occasion; and made entertainments, at which the women assisted, dressed in their nuptial ornaments, singing to the sound of timbrels, the happiness of their tribe, who had now one to protect their honour, to preserve their genealogies, and the purity of their language, and to transmit their actions to posterity; for this was wholly performed by their poems, to which they were solely obliged for their knowledge and instruction, moral and æconomical, and to which they resorted, as to an oracle, in all doubts and differences. It is no wonder then, that a public congratulation was made on this account; an honour so distinguishing, that it was conferred only on one of these three occasions; namely, on the birth of a boy, the rise of a poet, and the fall of a foal of generous breed. To keep up an emulation among their poets, the tribes had once a year, a general assembly at Ocadh, a place famous on this account, and where they kept a weekly mart or fair, held on our Sunday. This annual meeting lasted a whole month, during which time they employed themselves, not only in trading, but in repeating their poetical compositions, contending and vying with each other for the prize; whence the place, it is said, took its name. The poems that were judged to excel, were laid up in their king's treasuries, as were the seven celebrated poems thence called "Al Moailahat," or "Moallekat," rather than from their being hung up in the Caaba, which honour they also had by public order, being written on Egyptian silk, and in letters of gold; for which reason they had also the name of "AlMod-hahabat" or the golden verses. These poems, which have appeared in our own language, exhibit an exact picture of the virtues and vices of the Arabians, their wisdom and their folly; and shew what may be constantly expected from men of open hearts and tumultuous passions, with no law to control, and little religion to restrain them. The fair and assembly at Ocadh was suppressed by Mahomet; in whose time, and for some years after, poetry seems to have been in some degree neglected by the Arabs, who were then employed in their conquests. When these were completed, and peace was established, this study was revived; and almost all kinds of literature were encouraged and greatly improved by them. This interruption, however, occasioned the loss of most of their ancient pieces of poetry, which were then chiefly preserved by memory; the use of writing being rare among them, in their time of ignorance. Though the Arabs were so early acquainted with poetry, they did not at first write poems of a just length, but only expressed themselves in verse occasionally. Albert Schultens has preserved, in his Ancient Memorials of Arabia, two little poems, in an elegiac strain, which are said to have been found about the middle of the seventh century, in some fragments of ruined edifices in Hadramaut, near Aden, and which are supposed to be of an indefinite, but very remote age. Sir W. Jones suggests, that these were modern compositions on the instability of human greatness, and the consequences of irreligion; illustrated by the example of the Hamyaric princes; and to the same class of literary impostures belongs, as he suspects, the first poem quoted by Schultens, and ascribed by him to an Arab in the age of Solomon.

The modern Arabian poetry takes its date from the caliphate of Al Raschid, who lived towards the close of the eighth century. Their poetry then became an art, and rules of profody were digested by Al Khalil Ahmed al Farahidi, who lived in the reign of this caliph. The Arabians still cultivate poetry, and sometimes reward those who excel in it, though they have at present among them no great poets. The best are among the Bedouins of Dsjof. To this purpose it is mentioned by Niebuhr, that a sheik of that country was imprisoned at Sana, and that observing a bird upon the roof of a house, he recollected the opinion of those pious mussulmans, who think it a meritorious action to deliver a bird from a cage. He thought that he himself had as good a right to liberty as any bird, and expressed this idea in a poem which he got by heart, and which becoming generally known, at length reached the monarch's ears, who was so pleased with it, that he set the sheik at liberty, although he had been guilty of various acts of robbery. The exploits of their sheiks are now frequently celebrated in the Arabian songs.

ARABIC, or ARABIAN *Religion* was, in the state of ignorance, as they called the period before Mahomet, entirely Sabian; but the Sabian faith is not clearly and satisfactorily ascertained. See SABIANs.

It is generally allowed, that they admitted the existence of one supreme God, the Creator and Lord of the universe, whom they denominated "Allah Taala," the most high God: and the religion of the noble and learned Arabs, as well as of the poets, was pure theism. We have Arabian verses of unsuspected antiquity, which contain pious and elevated sentiments with respect to the goodness, and justice, and omnipotence of "Allah," or God. If an inscription, said to have been found on marble in Yemen, be authentic, the ancient inhabitants of that country preserved the religion of Eber, and professed a belief in miracles and a future state. It is certain, however, that the people of Yemen very soon degenerated, and fell into the error of adoring the sun and the firmament; for even the third in descent from Joktan, who was consequently as old as Nahor, took the surname of "Abdusnaes," or servants of the sun; and his family, we are assured, rendered particular honours to that luminary. Other tribes worshipped the planets and fixed stars; and by degrees a stupid idolatry prevailed among the lower orders of the people. The idolatry of the Arabs, or Sabians, chiefly consisted in the worship of the fixed stars and planets, and the angels or intelligences which, as they supposed, resided in them, and governed the world under the supreme Deity. These they honoured as inferior deities, and as mediators with God, implored their intercession. To the worship of the heavenly bodies the Arabs were easily led, by observing the regularity of their motions, whence they thought them to be animated: and also that the changes of the weather happened at the rising or setting of some of them for a considerable period; and hence they ascribed to them a divine power, and conceived themselves indebted to them for their rains, which were highly beneficial to their parched country. This kind of worship was proscribed by Moses, and is frequently alluded to in the book of Job, particularly ch. xxxi. 26—28. Accordingly they had seven celebrated temples dedicated to the seven planets; and this planetary worship has been supposed by some persons to have been the first species of idolatry. To this purpose Pausanias intimates (Laconic. Oper. lib. iii.), that the worship of the planets was earlier than the first arrival of the Pelasgi in Greece; and that before this time they had statues erected to their honour. Besides those stars, which were the general objects of worship throughout Arabia, there were some that were more peculiarly revered in particular provin-

ces Of the angels or intelligences which they worshipped, the Koran mentions three, namely, Allat, Al-Uzzab, and Manah; these were called Goddesses, and the daughters of God; and this appellation they bestowed not only on angels, but on their images, which they believed to be animated by the angels. All religious addresses, they conceived, were made as effectually before the one as before the other; and to this practice some have traced the origin of image-worship. Allat, or Allah, was the idol of the tribe of Thakif, who dwelt at Tavef, and had a temple consecrated to her in a place called Nakhlah. Al-Uzza was the idol of the tribes of Koreish and Kenanah, and part of the tribe of Saban, as some say; but according to others, it was a tree called the Acacia, worshipped by the tribe of Ghatfan, and first consecrated by Dhalem, who built a chapel over it. Manah was the object of worship of the tribes of Hodhal and Khozab, possibly the Callanixæ of Ptolemy, who dwelt between Mecca and Medina; and as some say, of the tribes of Aws, Kinazrai and Thakif also. Dr. Pococke suggests, that the Manah of the Arabs was the Meni of the prophet Isaiah. This idol was a large stone, demolished by Saad in the 8th year of the Hegira, a year so fatal to the idols of Arabia; and its name is supposed to be derived from "Manah," to flow, from the effusion of the blood of the victims sacrificed to the deity and intelligence represented by it; others say it was the name of a constellation. Besides these, the Arabian writers describe five antediluvian idols, who are said to have been men of great piety and reputation, whose statues the Arabs at first revered with a civil honour only, which in process of time was heightened into religious worship. The Arabs had also a great number of other idols; and each country, and even each family, had its appropriate deity. There were, it is said, no less than 360 idols, equal to the number of days in their year, in and about the Caaba of Mecca.

Some of the Pagan Arabs believed neither a creation past, nor resurrection to come; but attributed the origin of things to nature, and their dissolution to age. Others allowed both. Some adopted the opinion of a metempsychosis, or transmigration of souls. The Arabs in general were strongly prepossessed in favour of auguries and fatality. On perceiving any beast or bird of ill omen, they kept close within their tents; and the most pressing occasions of business or curiosity would never have determined them to set out on a journey under such unfavourable auspices. The priesthood among them gave no pre-eminence over the rest of the people; every family had its altar, its idol, and its sacrificer, who was not excused from bearing arms in defence of the common cause, nor from the other obligations imposed on their fellow-citizens. They were selected from among the aged; and it seems probable that the priesthood was a temporary dignity conferred on every minister employed in acts of religious worship; and when the service ended, these ephemeral priests returned into the class of ordinary citizens; but whilst they were in office, it was expected that they should exhibit examples of moderation and sobriety. The Sabian priests reserved to themselves no part of the sacrificed victim, which was the case with the Pagan priests, but reduced it to ashes; abhorring the profanation and sacrilege of sitting down to the tables of the gods, and touching the viands that were offered to them. The ancient Arabs never imagined that tears and maceration could be grateful to the deity; and therefore they celebrated their religious festivals with dances and concerts, and the public jubilation was considered as the testimony of their gratitude towards the God who showered his bounty upon them. It is true, however, that every tribe had its particular customs, and stamped its own character, jovial or gloomy, on its ceremonies of devotion. The Magian reli-

gion was introduced among some tribes of Arabia a long time before Mahomet, in consequence of the vicinity of the Persians, and their intercourse with the Arabians; and hence this impostor borrowed many of his institutions from it. Judaism also is said to have been introduced among the idolatrous Hanyarites by Abu Carb Asad, who was the sovereign of Yemen about 700 years before Mahomet; and the Jews, who fled into Arabia in great numbers after the destruction of their country by the Romans, made profelytes of several tribes, and particularly those of Kenanah, Al Hareth Ebn Caaba, and Kendah; and in time they became very powerful, and obtained possession of several towns and fortresses. At length Yusuf, king of Yemen, raised a dreadful persecution against them, and put them to death by various tortures, one of which was throwing them into a glowing pit of fire, from which circumstance the Arabs gave him the opprobrious title of the "Lord of the pit;" and Caleb, or Elcshian, king of Ethiopia, to revenge the massacre of the Christians at Najran, put an end to Judaism and the kingdom of the Hanyarites in Yemen, at the same time. This event happened in the reign of the emperor Justin.

Christianity had likewise made a great progress in Arabia before the time of Mahomet. Whether St. Paul preached in any part of Arabia, properly so called, it is not easy to determine; but that the Christian religion was planted at a very early period in this country is an unquestionable fact. When the eastern church, soon after the beginning of the third century, was much harassed by disorders and persecutions, great numbers of them sought shelter in Arabia; and as these were for the most part of the Jacobite communion, this sect generally prevailed among the Arabs. The principal tribes that embraced Christianity were Hamyar, Ghafsan, Rabia, Taghlah, Bahra, Tomuh, part of those of Tay and Kodaa, the inhabitants of Najran, and the Arabs of Hira. See JACOBITES.

Such as we have above recited were the principal religions which obtained among the ancient Arabs; but as freedom of thought, says Sale, was the natural consequence of the political liberty and independence of the Arabs, some of them fell into other opinions. The Koreish, in particular, were infected with Zenticism, an error supposed to have a near affinity with that of the Sadducees among the Jews, and perhaps not much different from modern Deism; for several of that tribe, before the time of Mahomet, worshipped one God, and were free from idolatry; though they embraced none of the other religions of the country.

Since the establishment of Mahometanism in Arabia, there are several sorts of this profession in the country; such as the Sonnites, Sciites, Zeidites, &c. of which an account will be given in the course of this work. In Arabia there are at this time many Jews, who are dispersed through different cities, having their synagogues, and enjoying a considerable degree of freedom. As they are fond of living together, they commonly form a village near every principal town. In the neighbourhood of Kheibar, there are some Jewish tribes; who are not barely tolerated, but possess the sovereign authority. Although the Christians were once numerous in Arabia, Niebuhr says, that he knows no Christian church remaining at present in this whole country. In the province of Laclisa were many Sabæans, or Christians of St. John; but the Christianity of this sect is a kind of confused medley of the opinions and ceremonies of several different religions. In the commercial cities there are many Banians from India: at Mocha, however, they undergo many mortifications; but at Muscat, among the tolerant sect of the Berafi, they are permitted to observe the laws and cultivate the worship of their own religion, without disturbance. A considerable degree of religious toleration

is exercised among the Arabs. Their contempt, however, of those who differ from them is more chiefly manifested towards the Banians than the Jews, and least of all to the Christians; who, in return, express the least aversion for the Mussulmans. This progress towards general toleration among the Arabians preserves them from the rage of making proselytes. They seek neither to entice nor constrain any person, except sometimes their young slaves, whom they compel to embrace Mahometanism; but when a proselyte voluntarily enters himself, they are, by the laws of their religion, obliged to receive him, and to provide for his maintenance.

ARABIC *Version*. See ARABIC BIBLES.

ARABIC *Year*. See ARABIC Chronology, and YEAR.

ARABICA, in *Conchology*, a species of CYPRAEA that is found in India. This shell is slightly turbinated; charactered with irregular letter-like marks; and has a simple longitudinal streak down the back of it. Lin. Gmel. &c. *Cypræa Arabica*, or Arabic cowry, is about three inches in length; its ground colour is whitish or bluish, and is covered with characters of a chestnut or dark brown, that somewhat resemble Arabic letters upon the back; the edges are thick and spotted with purple. When the outer coat is worn off, the back of the shell is pale, with dark transverse bars. The inside of the mouth is violet; lips reddish-grey; crenulations chestnut. It is called by Rumphius, *Porcellana literata* f. *Arabica*.

ARABICI, a sect which sprung up in Arabia, about the year 207, whose distinguishing tenet was, that the soul died with the body, and also rose again with it.

Eusebius, lib. 6. c. 38, relates that a council was called to stop the progress of this rising sect; and that Origen assisted at it; and convinced them so thoroughly of their error, that they abjured it.

ARABICUS *costus*. See COSTUS.

ARABIS, in *Botany*, Wall-crefs (*Αραβίς*, Diofc. from Arabia, Lin.), Lin. gen. 818. Schreb. 1094. Juss. 238. Class, *tetradynamia siliquosa*. Nat. Order, *siliquosa*. *Crucifera*, Juss. Gen. char. *Cal.* perianth, four-leaved, deciduous; leaflets from parallel-converging; two opposite larger, ovate-oblong, acute, a little prominent at the base, gibbous, concave; the other two linear, erect. *Cor.* four-petalled cruciform, each ending in claws of the length of the calyx. *Nectarics*, four; each from a little scale within the bottom of the calycine leaflet, affixed to the receptacle, reflex, permanent. *Stam.* Filaments subulate, upright, two the length of the calyx, four twice as long; anthers cordate, erect. *Pist.* Germ. columnar, the length of the stamens. *Style*, none. *Stigma* obtuse, entire. *Per.* siliques, compressed, very long, linear unequal, with swellings at the seeds; valves almost the length of the partition. *Seeds*, many, roundish, compressed. Ess. gen. char. Nectarous glands four, one within each leaflet of the calyx, like a reflex scale. Species 1. *A. Alpina*, alpine wall-crefs; leaves clasping the stem, toothed; root perennial, creeping, from which proceed many leaves collected into heads, spreading circularly: they are whitish, oblong, and indented at the edges. From the centre of these arise the flowering stems, which grow nearly a foot high, with alternate leaves closely embracing the stem. The flowers are white, in bunches towards the top. Flor. Dan. t. 62. A native of the Alps and other mountains of Europe, on rocks, in caverns, and in woods. It was cultivated in the botanic garden at Oxford, in 1658, and is now common in gardens. 2. *A. lucida*, shining wall-crefs, leaves embracing the stem, shining. Stem four inches high, simple, smooth, leaves entire; those at the bottom obovate, obtuse; those on the stem alternate, cordate, clasping the stem. Petals erect, white, linear, in corymbs, which become racemose. A native of Hungary, perennial. 3. *A.*

grandiflora, great flowered wall-crefs, stem naked; root-leaves many, two inches long, lanceolate, cut beyond the middle like pinnate leaves, with acuminate divisions. Corymb terminating with alternate flowers, on very short peduncles. A native of Siberia, perennial. There is one variety of this species with entire leaves, and another with white flowers. 4. *A. thaliana*, common wall-crefs, leaves petiolate, lanceolate, perfectly entire. Curt. Lond. 2. 49. Eng. Bot. Root-leaves sometimes toothed near the base, stem-leaves sessile and toothed, hairy; stem upright, somewhat branched, round, crooked, hairy; the little branches alternate and drooping; petals white, entire, obtuse, twice the length of the calyx; siliques half an inch long, containing several yellowish seeds. A common annual, growing in sandy grounds, and on old walls. 5. *A. bellidifolia*, daisy-leaved wall-crefs, leaves subdentate; those of the root obovate, of the stem lanceolate. Jacq. Flor. Aust. 3. t. 280. Root perennial, producing tufts of leaves, and several stems, which are undivided, round, smooth, bending, lengthened out gradually at top, into a long raceme; flowers corymbed, inodorous, white, consisting of obovate petals; siliques parallel to the stem, linear, compressed, opening at both ends. A native of the foot of the Alps in Switzerland and Austria: Introduced into the Royal garden of Kew, by John earl of Bute, in 1773. A smaller variety of this species is described and figured by Jacquin; see l. c. *A. pumila*. 6. *A. lyrata*, lyrate-leaved wall-crefs, leaves smooth; those at the root lyrate, on the stem linear; root annual; the flower-stalks nearly a foot high, terminated by white flowers. Linnæus observes, that this differs in no respect from the fourth species, except that the root-leaves are lyrate and smooth, and the flowers larger. A native of North America. 7. *A. hispida*, rough wall-crefs: this, according to Professor Martyn, is the *A. striata* of Hudson and Withering; leaves wedge-shaped, sublyrate, hispid; stem-leaves half embracing the stem, lanceolate; siliques stiff, ancipital; root annual; stems many, six inches high; root-leaves very many, toothed and gash-toothed, rough, hairy; stem leaves three or four, toothed, hispid; flowers white, in racemes, on short peduncles; siliques an inch and a half long, quadrangular at the base, striated. It grows wild in most parts of Europe; and was found on St. Vincent's rocks near Brillot, by Mr. Hudson, who describes it as a new species. 8. *A. Halleri*, Haller's wall-crefs, stem-leaves sublyrate, those on the branches lanceolate, gashed; stem erect, six inches high; root-leaves on long petioles, obtuse, repand, a tooth or two at the base; stem-leaves petioled, oblong, sinuate-toothed; petals white, with green claws. This plant sends off runners from the root and base of the stem. A native of Germany, Carniola, and Piedmont. 9. *A. canadensis*, Canadian wall-crefs; stem-leaves lanceolate, toothed, smooth; flowers pendulous. A native of North America, two feet high, with broad, lanceolate, irregular, ferrate leaves; flowers in lateral racemes. 10. *A. pendula*, pendulous wall-crefs; leaves stem-clasping; siliques ancipital, linear; calyces sub pilose; stem nearly a foot high, rough with scattered stiff hairs; leaves rough, partly embracing the stem, ferrate; peduncles long, filiform, loose; flowers white; siliques smooth, nodding. A native of Siberia. Cultivated by Miller, in 1759. 11. *A. turrita*, tower wall-crefs, Eng. Bot. Leaves stem-clasping; siliques bending down, flat, linear; calyces subrugose; root woody, biennial; stem usually simple, from one inch to two feet in height, upright, downy, round; leaves hairy on both sides; root-leaves petioled, oblong, thick, hispid, waved, and toothed; stem-leaves similar, stem-clasping, tomentose, regularly decreasing as they approach the top; flowers upright, white or yellowish, on short peduncles; siliques

very long, linear, compressed, curved; seeds round, compressed: common on old walls, rocks, &c. 12. *A. saxatilis*, stem erect; leaves stem-clasping, lanceolate, toothed; filipes the length of the raceme; stem about six inches high, round, simple; leaves crowded, upright, cored at the base, deeply toothed, and as well as the whole plant covered with soft hairs; nabel of doves terminating, nodding; petals white, flat, squarish; siliqua in short racemes, flat, compressed, annual. Alboini and Villars differ considerably in their descriptions of this plant. A native of the south of Europe, on rocks. 13. *A. juliana*, root leaves roundish, rough, toothed; stem leaves embracing, hairy. This, in many respects, agrees with the 5th species. Its stem is smooth, erect, from four to six inches high; simple, furnished with one or two ovate-lanceolate leaves; flowers large, white; calyces whitish; siliques broadish, bowed at the end, upright, parallel to the stem. A native of the south of Europe. 14. *A. serpyllifolia*, all the leaves elliptical entire; stem flexuose; stems filiform, bending, entangling one with another; leaves small, sessile, beset with forked hairs; petals small, white; siliques very thin, a little compressed. A native of Dauphiné. 15. *A. recta*, stem straight, leaves rectangularly toothed, sessile; siliques from erect spreading. This resembles the 14th species, except that its stems are constantly straight. It is annual or biennial, and found on walls or rocks about Grenoble.

Propagation and Culture. All the above are hardy plants, and will thrive in any situation. They may be easily propagated by seeds, which they produce in great plenty. The first species is most common in our gardens, and by multiplying fast by its creeping roots, few persons are at the trouble of sowing its seeds. It flowers early, and having many strong stems from one root, it makes a pretty variety in cold situations, where many finer plants will not thrive.

ARABIS. See CARDAMINE.

ARABIS, or ARBIS, in *Ancient Geography*, a river of Persia, in the province of Gedrosia, which took its rise on a ridge of mountains that ran across the province, and after a short course, discharged itself into the Indian ocean. The mouth of the Arabis is placed by Mr. Rennell in E. long. 65° 34', and N. lat. 25° 26', about 44' West from the western mouth of the Indus. Arrian mentions an island at the mouth of the river; and there is still a small town, called Sommeany, at the entrance, and labouring under the same difficulty for water, which is noticed by Arrian; who says, that they were obliged to go up the country above two miles to find a well. From the Indus to the river Arabis, the Greeks, in the voyage of Nearchus, found the coast inhabited by an Indian tribe, whom they have named Arabies; and contiguous to them were the Orizæ, whose territory extended from the Arabis to Malana, or Cape Moran, which terminates a ridge of mountains shooting off from a chain which bounds this country on the north. Ara, the capital, now Haur, is placed by M. D'Anville on the Tomerus; the country appears to have been fully peopled; and the Orizæ are described as dressed and armed like the Indian tribes; but their customs, manners, and language, says Dr. Vincent, "On the Voyage of Nearchus," mark them as a different race. The modern inhabitants consist chiefly of a predatory people, denominated "the Balluches."

ARABISM, ARABISMUS, an idiom, or manner of speaking peculiar to the Arabs, or the Arabic language. R. Martin maintains that the γ sometimes expresses an oath in the Hebrew as well as the Arabic.

ARABISSUS, in *Ancient Geography*, a town of Asia, situate on a plain to the south of the river Melas.

ARABIST, a person curious of, and skilled in the learn-

ing and language of the Arabians: such were Erpenius and Golius. The surgeons of the 13th century are called *Arabists* by Severinus. Freund, Hist. Phys. tom. ii. p. 301.

ARABISTAN, in *Geography*, a name given by the Turks and Persians to modern Arabia.

ARABKIR, a town of Asia, in the province of Carmania, 105 miles south-east of Yuceup.

ARABIE FARM, in *Agriculture*, that sort of farm which is either wholly or in a great part under the plough. See FARM.

ARABLE Land, that kind of land which is proper for being tilled or cultivated by means of the plough, with the view of producing grain or other crops. The dry and friable sorts of soil are most adapted to this purpose. See LAND.

ARABS, in *Entomology*, a species of TENEBRIO that inhabits the east. It is black; thorax ferrated; antennæ and legs testaceous brown. Fabricius. Gmelin.

ARABS, a species of CIMEX found in South America. The thorax is spinous; body ovate, livid; end of the abdomen bidentated. Linn. Fab. Gmel. This is called by Sloane, Cimex sylvestris fatens viridis triangularis.

ARABS, in *Ornithology*, a species of OTIS that inhabits Arabia Felix, and which Dr. Latham concludes must be the flying ostrich of Le Maire and Adanson; though Buffon supposes that bird to be the Linnean OTIS ATRA. Its specific character is very concise, "ears with erect crest." Gmelin. Brisson calls it *L'Ouarde d'Arabie*; and Buffon, *Le Lobong, ou l'Ouarde huppé d'Arabie*; and it is likewise the *Arabian Bustard* of Edwards and Latham.

The size is that of the great bustard, but the bill, neck, and legs are longer in proportion. The bill is pale horn colour; back of the head black and erected; forehead whitish; a black mark on each side of the head, passing into the crest behind; the rest of the head, neck, and upper parts of the body, rufous, mixed with black, and somewhat resembling the markings on the plumage of the woodcock; the throat, and fore-part of the neck, ash-colour crossed with brown lines; breast and belly white; quills black; secondaries black and white in spots, those nearest the body rufous, with dusky marks across; tail white except the two middlemost feathers, which are blackish rufous; all of them are mottled and marked with a black band across; the legs are pale brown.

ARABSCHAH, in *Biography*, a Mahometan writer of the fifteenth century, was a native of Damascus, where he died in the year 1450. He is the author of a history of Tamerlane, intitled, "The wonderful effects of the divine decrees in the affairs of Tamerlane," and of a theological treatise "On the unity of God." D'Herbelot Bibl. Orient.

ARABUM LEPRA. See LEPROSY.

ARABUM sandaracha. See SANDARACHA.

ARAC, or ARRAC, a spirituous liquor, imported from the East Indies; chiefly used by way of dram, and in punch. The nature and composition of this celebrated liquor have been much controverted.—The name arac, Mr. Lockyer assures us, is an Indian word for strong waters of all kinds; as they call our spirits and brandy, English arac.—But what we understand by the name arac, is really no other than a spirit procured by distillation from a vegetable juice called *toddy*, which flows by incision out of the cocoa nut tree, and some other trees, like the birch-juice procured among us.

The *toddy*, Mr. Lockyer adds, is a pleasant drink of itself, when new, but purges those not used to it; and when stale, is heady; and finally makes good vinegar. The English at Madras used it as leaven to raise their bread with.

Others are of opinion, that the arac, or arrac, is a vinous spirit

spirit obtained by distillation, in the East Indies, from rice or sugar fermented with the juice of cocoa nuts.

The Goa arac is made from the toddy, the Batavia arac from rice and sugar. There is likewise a kind of shrub from which arac is made.

Goa and Batavia are the chief places for arac.—At Goa there are divers kinds; single, double, and treble distilled. The double distilled, which is that commonly sent abroad, is but a weak spirit in comparison with Batavia arac; yet, on account of its peculiar and agreeable flavour, it is preferred to all the other aracs of India. This is attributed to the earthen vessels which they use at Goa to draw the spirit; whereas at Batavia they use copper stills.

The Parier arac, made at Madras, and the Columbo and Quilone arac, at other places, being fiery hot spirits, are little valued by the Europeans, and therefore rarely imported: though highly prized among the natives. In the best Goa arac, the spirits of the cocoa juice do not make above a sixth or eighth part: the manner of making the Goa arac is this. The juice of the trees is not procured in the way of tapping, as we do; but the operator provides himself with a parcel of earthen pots, with bellies and necks like our ordinary bird-bottles: he makes fast a number of these to his girdle, and any way else that he commodiously can about him. Thus equipped, he climbs up the trunk of a cocoa-tree; and when he comes to the boughs, he takes out his knife, and cutting off one of the small knots or buttons, he applies the mouth of the bottle to the wound, fastening it to the bough with a bandage; in the same manner he cuts off other buttons, and fastens on his pots, till the whole number is used: this is done in the evening, and descending from the tree, he leaves them till the next morning; when he takes off the bottles, which are mostly filled, and empties the juice into the proper receptacle. This is repeated every night, till a sufficient quantity is procured, and the whole being then put together, is left to ferment, which it soon does.

When the fermentation is over, and the liquor or wash is become a little tart, it is put into a still, and a fire being made, the still is suffered to work as long as that which comes over has any considerable taste of spirit.

The liquor thus procured is the low wine of arac, and this is so poor a liquor, that it will soon corrupt and spoil, if not distilled again, to separate some of its phlegm; they therefore immediately after pour back this low wine into the still, and rectify it to that very weak kind of proof spirit, in which state we find it. The arac we meet with, notwithstanding its being of a proof test, according to the way of judging by the crown of bubbles, holds but a sixth, and sometimes but an eighth part of alcohol, or pure spirit: whereas our other spirits, when they shew that proof, are generally esteemed to hold one half pure spirit. Shaw's *Essays on Distilling*.

There is a paper of observations on arac, in the *Mélanges d'Histoire Natur.* tom. v. p. 302. By fermenting, distilling, and rectifying the juice of the American maple, which has much the same taste as that of the cocoa, the author says he made arac not in the least inferior to any that comes from the East Indies; and he thinks the juice of the sycamore and of the birch trees would equally answer the end.

Beside the common sorts of Goa and Batavia arac, there are two others less generally known; these are the bitter arac, and the black arac.

By stat. 11 Geo. I. c. 30. arac on board a ship within the limits of any port of Great Britain, may be searched for and seized, together with the package; or if found unshipping or unshipped before entry, may be seized by

the officers of excise, in like manner as by the officers of the customs. 33 Geo. II. c. 9. 9 Geo. III. c. 6.

Upon an excise officer's suspicion of the concealment of arac, and oath made of the grounds of such suspicion, before the commissioners or a justice of the peace; they may empower him to enter into such suspected places, and seize the liquors, with the casks, &c. If the officers are obstructed, the penalty is 100*l*.

Arac is not to be sold but in warehouses, entered as directed in the 6th of Geo. I. c. 21. upon forfeiture, and the casks, &c. If permits are not returned, which are granted for the removal of arac, or if the goods are not sent away within the time limited, the penalty is treble the value. If the permits are not returned, and the decrease is not found to be sufficient, the like quantity is forfeited. Permits are not to be taken out but by direction in writing to the proprietor of the stock, or his known servant, upon forfeiture of 50*l*. or three months' imprisonment.

By statute 9 Geo. II. c. 35. if arac is offered to sale without a permit, or by any hawker, pedlar, &c. with a permit, the person to whom it is offered, may seize and carry it to the next warehouse belonging to the customs or excise, and bring the person offering the same before any justice of the peace, to be committed to prison, and prosecuted for the penalties incurred by such offence. The person seizing such goods may prosecute in his own name; and on recovery is entitled to one-third part of the gross produce of the sale; and the commissioners are, if desired, upon a certificate from the justice of the offender's being committed to prison, to advance to the seizer 15*s*. per gallon for the arac so seized.

Arac (except for the use of seamen, two gallons each) found in any ship or vessel arrived from foreign parts, at anchor, or hovering within the limits of any port, or within two leagues of the shore, and not proceeding on her voyage (unless in case of unavoidable necessity and distress of weather, notice whereof must be given to the collector or chief officer of the port, upon the ship's arrival), is forfeited; with the boxes, casks, or other package, or the value thereof. 5 G. III. c. 43. 19 G. III. c. 69. 21 G. III. c. 39. 24 G. III. c. 47.

ARAC is also the name of a spirituous liquor made by the tartars of Tungusia, of mares' milk, allowed to become sour, and afterwards distilled twice or thrice between two earthen pots closely stopped, whence the liquor runs through a small wooden pipe. It is said to be more intoxicating than brandy.

ARACA-PUDA, in *Botany*. See *DROSER*.

ARACÆI, ARACEANS, or ARKITES, in *Ancient Geography*, a people supposed to be descended from Arac the son of Canaan, who inhabited a district in the vicinity of Sidon, which afterwards fell to the lot of the tribe of Asher, where Josephus places a town called Arce or Arca. From hence they removed farther north to a town of the same name between Aradus and Tripolis. The Arce mentioned by Josephus, and belonging to the tribe of Asher, was otherwise called Antipas. The Jewish historian says, that Baanah, mentioned, 1 Kings, iv. 16. as superintendent of the tribe of Asher, was governor of the country round about the city of Arce, which lies upon the sea. In the latter times of the Jewish commonwealth, this city was a part of Agrippa's kingdom.

ARACAN, in *Geography*. See *ARRACAN*.

ARACANGA, in *Ornithology*, a species of *PSITTACUS*, or parrot, in the Linnæan system; the *Aracanga* of Marcgrave, the *Aracanga Maccaw* of Willughby, *Ara Jamaicensis* of Brisson, *Petit Ara Rouge* of Buffon, *Jamaica Maccaw* of Albinus and Brown, *red and yellow Maccaw* of Bancroft and Latham. It is of a pale scarlet colour, with

naked wrinkly cheeks; the scapular feathers are yellow, and tip with green; the wing quills are blue above, and red beneath. Mr. Latham suspects, that this may be a younger bird of the species called *ARA*, which is somewhat bigger. It inhabits Guiana, Brasil, and Jamaica.

ARACARI, a species of *RAMPHASTOS*. It is green; abdominal band, vent, and rump red; belly yellow. Gmel. &c. Ramphastos with a black beak, the upper mandible white on the sides, and three-lobed at the base. Linn. Syst. Nat. Maregrave calls this bird *Aracari*; Brisson, *Tucana Brasiliensis Viridis*; and Buffon, *Grigri*, and *Toucan Verd du Brésil*.

The length of this bird is sixteen inches, of which the bill measures four inches and a quarter; it is hooked at the tip; the upper mandible white, marked above with a black stripe the whole length; the lower mandible is wholly black, and deeply serrated at the edges. The head, throat, and neck black; on each side of the head is a small chestnut spot just above the ears; the upper part of the back, scapulars, and wing-coverts are dull green; lower part of the back, rump, and upper tail-coverts, bright red. Breast, belly, and sides brimstone, with a bright red band across the belly. Tail wedge-shaped; legs blackish green; claws black. Inhabits South America.

ARACCA, in *Ancient Geography*, a town of Asia, in Susiana, on the eastern branch of the Tigris, according to Ptolemy. This is probably the city of Chaldaea, built by Nimrod the grandson of Cush, and mentioned under the name of Erach, Gen. x. 10. Ammian calls it *Aracha*; hence originates the name of *Arachæan* plains, described by Tibullus (l. iv. p. 403. ed. varior.):

“Ardet *Aræteis* aut unda per hospita campis.”

And this city might probably have led the Arabians to call the large province of Asia, *Iraca* or *Irak*, the capital of which was formerly *Babylon*, and now *Bagdad*.

ARACENA, in *Geography*, a town of Spain, in the province of Andalusia, situate near the Sierra Morena, in the country of Seville, with a castle on an eminence; 10 leagues N. N. W. from Seville.

ARAC-GELERAN, a small district of Chusistan, a province of Persia.

ARACH, or *ERACH*, a name now given to the ancient *PARTHIA*.

ARACH, in *Botany*. See *ATRIPLEX*.

ARACHIDNA, and *ARACHIDNOIDES*. See *ARACHIS*, *GLYCINE*, and *LATHYRUS*.

ARACHIS (from *ἀράξ*, *damnum*, *vel noxa*), in *Botany*, *earth-nut*. Linn. gen. 876. Schreb. 1177. Gærtn. t. 144. Juss. 354. *Arachidna*, Plum. 37. *Arachidnoides*, Niss. act. gall. 1723. t. 19. Class, *diadelphidæ*. Nat. Order, *Papilionaceæ* or *leguminosæ*. Gen. Char. *Cal.* perianth two-parted, gaping; upper lip ovate, semitrifid; the intermediate division the largest, emarginate; under lip lanceolate, concave, acute, rather longer than the upper. *Cor.* papilionaceous, resupine; banner roundish, flat-deflex, very large, emarginate, longer than the calyx; wings free, sub-ovate, shorter than the banner; keel subulate, incurved, the length of the calyx, very slightly bifid at the base. *Stam.* filaments ten, all united at bottom, subulate; anthers alternately roundish and oblong. *Pist.* germ oblong; style subulate, the length of the germ; stigma simple. *Per.* a legume, ovate-oblong, columnar, valveless, gibbous, one-celled. *Seeds* two, oblong, obtuse, gibbous, truncate. *Obs.* Most of the flowers have a pistil without a germ.

Ess. Gen. Char. *Cal.* bilabiate. *Cor.* resupine. *Fil.* connected. *Legume* gibbous, torulose, veined, coriaceous.

Species, 1. *A. hypogæa*, common earth or ground nut.

Stem herbaceous, procumbent. The stem is annual, three feet high, round, very hairy, reddish, suberect, with spreading procumbent branches; leaves scattered, abruptly pinnate; leaflets two pairs, ovate, hairy, entire; stipules sharp, bifid, opposite, half stem clasping; flowers gold-coloured, growing singly on long axillary peduncles; the legumes contain three or four seeds. Native of the East Indies, and cultivated very abundantly in China and Cochinchina. *β.* The African ground nut differs from the Asiatic in having the leaflets smooth, the stipules entire, the flowers usually in pairs, and only two or three seeds in each legume. All the European settlements in America now abound with the ground nut, but it is generally supposed that it was originally brought by the slaves from Africa. In South Carolina there is great plenty of this plant; the inhabitants roast the nuts, as they are commonly called, and make use of them as chocolate. In the eastern countries, they are a substitute for almonds, and like them afford a limpid oil, which in Cochinchina is very much used for lamps. It is also used at table, but not so much esteemed as the oil of olives. The ground nut was cultivated in the Chelsea garden so early as the year 1712. 2. *A. fruticosa*, shrubby earth or ground nut; stem shrubby, upright; the whole plant is viscid; stems slender, many, siform; leaves resembling those of myrtle, of different sizes, oblong, ternate, hirsute, partly sheathing the stem at the foot-stalks; flowers at the end of the branches, yellow, collected into solitary heads with bractes under them. A native of the East Indies, in Tranquebar and the island of Ceylon.

Propagation and Culture. In England, the seeds of the earth nut must be sown on a hot-bed in the spring, and the glasses kept over the plants till towards the end of June; after which, if the weather proves warm, they may be exposed to the open air by degrees. The branches trail upon the ground, and as soon as the flower begins to decay, the germ thrusts itself under ground, and the pod is formed and ripened.

ARACHNE, in *Entomology*, a species of *PAPILIO* (Nymph. G. Linn.). The wings are entire, black; a rufous band with two eye-shaped spots on both sides of the anterior pair; posterior pair marked with a cinereous jagged band on the under side. Inhabits Austria. Fabr. Gmel. *Obs.* This is not *PAPILIO Arachne* of Cramer, described by Fabricius and Gmelin under the specific name *Morvus*.

ARACHNE, in *Fabulous History*, a Lydian damsel, the daughter of Idmon, of the town of Colophon, who contested with Minerva the honour of pre-eminence in the arts of spinning linen and manufacture of tapestry. Minerva was so incensed by her presumption, that perceiving the peculiar excellence of her rival's performance, she flung the shuttle at her head: this insult so offended the distressed Arachne, that she hung herself in despair. Minerva, it is said, restored her to life under the form of a spider, which employs itself in spinning. The fable is undoubtedly derived from *αράχνη*, the Greek name of the spider.

ARACHNOIDEA TUNICA, or *Arachnoides*, from *αράχνη*, a spider, and *ειδος*, a form, in *Anatomy*, is a semi-transparent thin membrane which is spread over the brain and pia mater, and for the most part closely connected with the latter membrane. See the article *BRAIN*.

The same term, or *Tunica Aranea*, has been also applied to that capsule of the crystalline lens, which is a continuation of the membrana hyaloidea. See *EYE*.

ARACHNOIDES, in *Natural History*, a genus of the *ECHINI marini*, in Klein's arrangement of testaceous and crustaceous animals. There is only one shell of the Echinus genus that strictly agrees with the character of *Arachnoides*,

which is *Plazenta*; it therefore forms a subdivision of the genus in the Linnæan system, and is thus defined; circular mouth central; vent square, and placed on the surface: *Arachnoides Kleinii*.

ARACHNOIDES is also a species of MADREPORA found fossil. The stars are very small, crowded, and flattened; rays somewhat undulated, short, and equal. Gmel. Sec.

ARACHNOIDEUS, in *Botany*, denotes cobwebbed.

ARACHOSIA, in *Ancient Geography*, a province of Persia, bounded on the west by Drangiana, on the north by Paropamisus, on the east by the river Indus, and on the south by Gedrosia. It was anciently inhabited by the Arimafpi. Ptolemy enumerates thirteen cities in this province; the principal of which were Arachotus, Alexandria, and Arbaca. The ancient Arachosia is traced by major Rennell in the present AROKHAGE. Captain Wilford says (see Asiatic Researches, vol. vi. p. 517.) that *Rob Coi*, according to the Balluch pronunciation, denoting the mountains of Coi, or *Row-Coz* as softened by the Pattans, is the Arachosia of the Greeks; and that it includes the districts of Gazni and Candahar. Arachosia is now called Cawer or Caweran; but even this appellation is becoming obsolete. By a strange mistake, says this ingenious writer, the country of Arachosia, and the river which flows through it, have been placed by the learned D'Anville to the south of Candahar. He adds, that if this famous geographer had recognized Gazni in the Shakeni-Couze of Tavernier, this mistake would not have happened. Mr. Wilford having conversed often with natives of Candahar, of Kálá-at-Násir-Khán, and Cojhur, as well as other intermediate places, obtained sufficient local knowledge of that country to rectify this error.

ARACHOTI, an ancient people of India, supposed by Bryant (*Anal. of Anc. Mythol.* v. III. p. 199) to be the same with the CATHAIANS, and so denominated from their city Ar-Chota, the same as Cothopolis, or city of Cutha. The Arachotians are styled *Λινοχλωστοί* from their particular habit which was of linen; and were a branch of the Amonians, who, wherever they settled, were famous for this manufacture.

ARACHOTUS, a town of Asia in Arachosia, built on a lake of the same name by the famous Semiramis, who is said to have given it the name of Cophes. This city, says captain Wilford, (*ubi supra*), was probably Coj-vara or Cojhar, Cojwar, and Cajhur, the Kodzar and Kodzar of Persian authors; and literally the habitation of Coj, and by implication, the capital city of Coj. The river Arachotus, called also Choafes and Cophes, is now called Abeltarnic, or the river Tarnic. It rises in the hills north-east of Gazni, and after having watered the whole valley of Arachosia, loses itself in a marsh about four miles to the south of Candahar, which marsh was the Arachosian marsh of the ancient geographers. The present river Arachotus is formed by a small stream, which rises a little above Mucur in this marsh, and hence it is often called the water of Mucur.

ARACHTHUS, a town of Ætolia, according to Ptolemy

ARACHTHUS, a river of Epirus, which ran into the gulf of AMBRACIA.

ARACHUS, in *Botany*. See ERVUM.

ARACIA, in *Ancient Geography*, an island of the Persian gulf, situated on the Persian side; and placed by Nearchus between the isle of Caicandros and the mountain Ochus.

ARACIANA, a town of Parthia, mentioned by Ptolemy,

ARACILLUM, an ancient town of Spain, taken and destroyed by Augustus.

ARACINTHUS, in *Entomology*, a species of PAPILIO (*Hes. Urb. Linn.*). The wings are rounded, entire, and brown; posterior pair beneath grey, with white eye-shaped

spots. Fabr. Sp. Inf. This butterfly inhabits France, Germany, and Siberia; it is *Papilio morpheus* of Pallas, and *Papilio steropes* of Esper.

ARACLEA, in *Geography*, a sea-port town of European Turkey, in Rominia, on the north-west coast of the sea of Marmora, called by the Turks Erckli, 15 leagues west of Constantinople.

ARACNÆUS MOUNTS, in *Ancient Geography*, a mountain of the Argolide, part of a chain which separated the peninsula of Morea on the south-east. It lay to the north-west of Epidaurus.

ARACOUA, or ARAGHOVA, in *Geography*, a borough of Greece in Livadia, near the gulf of Lepanto; supposed to be the ancient *Ambriffa*.

ARACUITES, a people of South America in Brazil, in the vicinity of the prefecture of Pernambuco.

ARACUS, in *Botany*. See OROBUS.

ARACUS *Aromaticus*, in the *Materia Medica*, a name given by some authors to the *Vanilla* used in making chocolate.

ARACYNTHUS, in *Ancient Geography*, a mountain of Greece in Bœotia, whence, according to Steph. Byz. Minerva was denominated *Aracynthis*. Strabo places this mountain in Ætolia, and Pliny in Carmania.

ARAD, ARADUS, a town in an island of the same name on the coast of Phœnicia, over against Antaradus. Strabo says that this town was built by the exiles of Sidon: and Josephus informs us, that it had at first its own kings, in common with the other cities of Phœnicia; but, in progress of time, it was subdued by the Tyrians. After the Persians took possession of Phœnicia, the kings of Aradus were tributary to Persia. Arrian says, that Strato, the son of Gerostratus, obtained of Alexander the Great, for himself and his father, the established possession of this kingdom. It afterwards, as a part of Phœnicia, was subject to the Lagidæ, to whom Egypt was assigned under the successors of Alexander. During the war carried on by Antiochus the Great against Ptolemy Philopator, the Aradians were governed by their own laws, and Antiochus did not molest this privilege: but they were deprived of it by Antiochus Epiphanes, who, on his return from Egypt, took their city, and ravaged the whole province. When Pompey made a conquest of Syria and Phœnicia, the Aradians became subject to the dominion of the Romans. The city of Arad, though it had no harbour in the island, became powerful at sea by means of a port which it had on the continent at the mouth of the river Eleutherus. Its inhabitants detested piracy, and separated from the Cilicians, who were addicted to it. Strabo, l. xvi. The island Aradus, the Arpad of the Scriptures, and the seat of the Arvadite or Aradite (see Gen. xi. 17.), is at present called *Rou-Wadde*: and this island, and also El-Hammah, the ancient Hamath, the seat of the Hamathite, lying over against it (*Ezek. xlvii. 29.*), ten leagues to the eastward, are the most northern settlements of the sons of Canaan. The prospect of Rou-wadde from the continent is very magnificent, and furnishes at a distance a continued train of fine buildings and impregnable fortifications. But this is altogether owing to the height of its situation, and the rocks that abound in it. Its whole strength and beauty, though it was called Rou-wadde, or Arpad, probably from the Hebrew *רוד, firmus fuit*, consists of a weak unfortified castle, defended by a few small cannon. Formerly, however, it was surrounded by a strong wall, constructed with stones of an immense size adapted to each other without cramps and mortar, so as to withstand the violence of the sea, and the battering engines of an enemy. In the time of its prosperity, art and nature had conspired to render it a place of such strength and im-

portance, as sufficiently to justify the boast, "Where is the king of Arpad?" (II Kings, xix. 17.) which Sennacherib made in the conquest of it. This island is now deserted, nor has tradition retained the memory of a spring of fresh water in its vicinity, which the people of Arados are said to have discovered at the bottom of the sea; and from which they drew water in time of war, by means of a leaden bell and a leathern pipe fixed to its bottom.

ARAD, or *Arada*, a city of Palestine, situate in Arabia Petraea, south of the tribe of Judah, and of the land of Canaan. The Israelites, in their progress towards Canaan, were opposed and defeated by the king of Arad; but as soon as they became masters of Canaan, they destroyed all its cities. Numb. xxi. 1. ch. xxxiii. Arad was afterwards rebuilt; for Eusebius places it in the neighbourhood of Kades, four miles distant from Maletis, and twenty from Hebron. See **AREB**.

ARAD, in *Geography*, a town of Upper Hungary on the river Marisch, twenty-four miles north of Temeswar.

ARADA, in *Ornithology*, a name given by Buffon to the Gmelinian *Turdus cantans*; which see.

ARADI, in *Geography*, a town of Asiatic Turkey in the province of Nátolia, sixteen miles north-west of Kastamemi.

ARADIS, in *Ancient Geography*, the name of a town in the island of Sardinia, which, according to Dion, was taken by Menas.

ARADITA, an episcopal city of Africa, in the provincial province.

ARADOS, in *Medicine*, signifies, according to Hippocrates, that perturbation which is excited in the stomach by concocting meats of different qualities. It also signifies any internal perturbation, occasioned by purging medicines, vehement exercise, or other causes.

ARADRIPHE, in *Ancient Geography*, a town of Media according to Ptolemy.

ARADUCA, a town of Hispania Tarragonensis.

ARADUCTA, a town of Lusitania, according to Ptolemy.

ARADUS. See **ARAD**.

ARADUS, an island of the Red Sea, mentioned by Steph. Byz.—Also, the name of an island in the Persian gulf, mentioned by Eustathius, and also by Strabo.

ARÆ. Athenæus mentions three islands of this name on the coast of Ionia. There are several places under this denomination, derived from the altars that were erected in them, on various occasions and for different purposes.

ARÆ *Philænorum*. See **PHILÆNI**.

ARÆGENUS, a town of ancient Gaul, supposed by M. D'Anville to have been Bayeaux; formed of Bajocassos, whose capital was this city.

ARÆOMETER, formed of *αραιος*, thin, and *μετρον*, measure, an instrument wherewith to measure the density or gravity of fluids.

The invention of the aræometer has been commonly ascribed to Hypatia, the daughter of Theo, about the end of the fourth century; but this account, says Salvete (*Annales de Chemie*, xxvii. 13.), is not accurate, if the poem, "de pondicibus et mensuris," annexed to the works of Priscian, and written by Rhemnius Fannius Palæmon, be truly ascribed to him. Rhemnius has given a perspicuous and exact description of aræometry; and he lived under Tiberius, Caligula, and Claudius Cæsar, three centuries before Hypatia; and he attributes the invention to Archimedes. However, if it be considered that valuable inventions are forgotten and discovered again during the lapse of a shorter period than three centuries, Hypatia may be allowed the honour of a second invention.

The aræometer, or water-weigher, is usually made of glass; consisting of a round hollow ball, which terminates in a long slender neck, hermetically sealed at top; there being first as much running mercury put into it as will serve to balance or keep it swimming in an erect position.

The stem is divided into degrees (as represented *Plat. IX. Pneumatics*, fig. 70.); and by the depth of its descent into any liquor, the lightness of that liquor is concluded; for that fluid in which it sinks least must be heaviest; and that in which it sinks lowest, lightest.

M. Homberg has invented a new aræometer, described in *Philos. Transact.* N^o 262. thus: *A* (fig. 71.) is a glass bottle or matrafs, with so slender a neck, that a drop of water takes up in it about five or six lines, or half of an inch. Near that neck is a small capillary tube *D*, about six inches long, and parallel to the neck.—To fill the vessel, the liquor is poured in at the mouth *B* (which is widened to receive a funnel), till it run out at *D*; that is, till it rise in the neck to the mark *C*, by which means you have always the same quantity of liquor; and consequently by means of the balance, can easily tell, when different liquors fill it, which weighs most, or is most intensely heavy.

Some regard, however, is to be had in these trials to the season of the year, and the degree of heat and cold in the weather; because some liquors rarefy with heat, and condense with cold, more than others; and accordingly take up more or less room.

By means of this instrument, the ingenious author has made a table to shew the different weights of the same bulk of the most considerable chemical liquors, both in summer and winter, as follows:

	Weighed in summer.		In winter.	
The aræometer full of	oz.	dr. gr.	oz.	dr. gr.
Quicksilver,	- - -	11 00 06	- - -	11 00 32
Oil of tartar,	- - -	01 03 08	- - -	01 03 31
Spirit of urine,	- - -	01 00 32	- - -	01 00 43
Oil of vitriol,	- - -	01 03 58	- - -	01 04 03
Spirit of nitre,	- - -	01 01 40	- - -	01 01 70
— salt,	- - -	01 00 30	- - -	01 00 47
Aquafortis,	- - -	01 01 38	- - -	01 01 55
Vinegar,	- - -	00 07 55	- - -	00 07 60
Spirit of wine,	- - -	00 06 47	- - -	00 06 6E
River water,	- - -	00 07 53	- - -	00 07 57
Distilled water,	- - -	00 07 50	- - -	00 07 54

The instrument itself weighed, when empty, one dram twenty-eight grains. See **HYDROMETER**.

ARÆOPAGUS. See **ARÆOPAGUS**.

ARÆOSTYLE, ARÆOSTYLOS, in the *Ancient Architecture*, a sort of intercolumniation, wherein the columns were placed at the distance of eight, or, as some say, ten modules from one another.

In the aræostyle, the columns were the widest and openest they were ever planted at; whence the name—from the Greek *αραιος*, rarer, and *στυλος*, column.

The aræostyle is chiefly used in the Tuscan order, at the gates of great cities and fortresses.

ARÆOTICS, in *Medicine*, such remedies as tend to open the pores of the skin, and render them large enough for the morbid matter's being carried off by sweat, or insensible perspiration.

To the class of aræotics belong diaphoretics, sudorifics, &c.

ARÆETHUS, in *Ancient Geography*, the name of a river in Epirus.

ARAF, or AL-ARAF, in the *Mahometan Theology*. See **AL-ARAF**.

ARAF A. See **CORBANI**.

ARAFAT, in *Geography*, a mountain of Arabia, near Mecca, so called, as some say, because Adam there met and knew his wife, after a separation of 200 years; or, according to others, because Gabriel, after he had instructed Abraham in all the sacred ceremonies, coming to Arafat, there asked him if he *knew* the ceremonies which had been shewn him; to which Abraham replying in the affirmative, the mountain thence had its name, and was called "the mountain of knowledge." To this mountain the Mahometan pilgrims proceed in a tumultuous manner on the ninth day of the month Dhulhajja, after morning prayer; and here they continue performing their devotions till after sun set. When their devotion is finished on this mountain, they depart to Mozdalifa, an oratory between Arafat and Mina, and there spend the night in prayer and reading the Koran.

ARAGON. See **ARRAGON**.

ARAGON, a town of Arabia, 100 miles E. S. E. of Sanaa.

ARAGUA, a town of South America, in the country of Terra Firma, and province of Cumana.

ARAGUAGUA, in *Ichthyology*, a name given by Marcgrave to a species of shark, since called by Linnæus **SQUALUS PRISTIS**, which see.

ARAGUS, in *Ancient Geography*, a river of Asiatic Iberia, which, according to Strabo, joins the Cyrus; but Pliny calls it *Alazon*, and says that it descends from mount Caucasus, separates Iberia from Albania, and discharges itself into the Cyrus.

ARAHUM, or **HARAHUM**, in *Ancient Writers*, denotes a place consecrated or set apart for holy purposes. *Ducange*.

Hence the phrase, *in arabo jurare*, or *conjurare*, to make oath in the church; because by the Riparian laws, all oaths were to be taken in the church on the relics of the saints.

ARALIA, **FRANCINO**, in *Biography*. See **FRANCINO**.

ARAIGNEE, in *Fortification*, sometimes denotes a branch, return, or gallery of a mine.

ARAIRE, the name of a small plough used in Provence and Languedoc, in France.

ARAL, in *Geography*, the name of a lake or sea of Great Bucharia, in Independent Tartary, about 100 miles to the east of the Caspian sea. It is about 200 miles long, and about 70 broad; and receives the river anciently called *Jaxartes*, and more recently the *Sirr* or *Sihon*, and the *Oxus* of antiquity, now called the *Gihon*. It is very probable that the Caspian sea and the Aral formerly constituted one lake, though they are now separated by an elevated plane, occasioned, perhaps, by the sand rolled down by the *Gihon*, the *Sirr*, and other rivers which now flow into the sea of Aral. The waters of this lake are saline, like those of the Caspian, and the fish found in both are of the same species. N. lat. 42° 45' to 46° 40'. E. long. 57° 4' to 61° 14'.

ARALIA, in *Botany*, *angelica tree*. Linn. gen. 386. Schreb. 525. Juss. 218. Clais. *pentandria pentagynia*. Nat. Ord. *hederaceae: aralie*. Juss. Gen. Char. *Cal.* involucre very small, of a globular umbellule. *Perianth.* five-toothed, very small; superior. *Cor.* petals five, ovate, acute, sessile, reflex. *Stam.* filaments five, subulate, of the length of the corolla; anthers roundish. *Pistl.* germ roundish, inferior; styles very short, permanent; stigmas simple. *Per.* a berry roundish, striated, crowned, five-celled. *Seeds* solitary, hard, oblong.

Ess. Gen. Char. Flowers in an umbellule, with an involucre; *Cal.* five-toothed, superior. *Cor.* five-petalled. Berry five-seeded.

Species, 1. *A. spinosa*; thorny aralia, or angelica-tree; angelica arborefcens, &c. Comm. hort. 1. t. 47. christopho-

riana, &c. Pluk. phyt. t. 20. Sp. char. arborefcens. Stem and leaves prickly. This rises with a woody stem to the height of eight or ten feet, dividing into several branches, with branching leaves, composed of many divaricating wings. The ribs of the leaves, as also the branches and stem, are armed with strong crooked spines, rendering the place where the plants grow in plenty, very difficult to pass through. The flowers are produced in large loose umbels, at the extremities of the branches, and are of an herbaceous colour. The berry is three-cornered and three-celled. A native of Virginia, whence it was sent to England in 1688, and cultivated by bishop Compton at Fulham. 2. *A. pentaphylla*; five-leaved aralia; arboreous, prickly; leaves quinate. The branches of this tree are prickly, round, flexuose, ash-coloured; prickles axillary, solitary, horizontal; leaves petioled, from one bud, to three, four, or more; leaflets ovate-acute, serrate at top, smooth; flowers in umbels, which are peduncled; stamens longer than the corolla. A native of Japan. 3. *A. chinensis*; Chinese aralia; frutex aquosus mas, Rumph. amh. 4. t. 44. Nalugu, Rheed. mal. 2. t. 26. shrubby; stem and petioles prickly; leaflets unarmed, villose; stem simple, closely beset with prickles; leaves confined to the top of the plant, on three-parted prickly villose petioles; partial leaves pinnate; leaflets ovate-ferrate, villose, large; panicle branching, with numerous umbellules. It was found in China by Osbeck, also in Cochin-China by Loureiro. It is a native of Malabar, and of Amboina; but Rumphius speaks of it as a large tree growing in the woods; whereas Loureiro describes it in Cochin-China as procumbent or scandent. See his Fl. Cochin. 187. 4. *A. japonica*; Japanese aralia; Kæmp. ic. sel. t. 10; shrubby, leaves lobate: stem unarmed, upright, six feet high; leaves towards the top close, alternate, petioled, seven-lobed, young leaves five-lobed; bractes many, involving the whole panicle of flowers, which are terminal in compound panicles, with alternate umbelled peduncles; umbels simple; no involucre. A native of Japan. 5. *A. racemosa*; berry-bearing aralia; stem leafy, herbaceous, smooth. This grows three or four feet high, dividing into many irregular branches; leaves ramose, alternate; peduncles axillary, terminated by round umbels of small four-leaved flowers, of a whitish colour, succeeded by round channelled berries. A native of Canada, where the berries are eaten, and the leaves and roots used as fallads and pot-herbs, by the Indians and French. 6. *A. nudicaulis*; naked-stalked aralia; stem naked; leaves in pairs, ternate; stem so very short, as to scarcely deserve the name: leaves decomposed; leaflets pinnate, with five serrate pinnae; scape long, supporting about three umbellules, in shape and colour like those of the preceding species. This, and also the fifth sort, were cultivated by Miller in 1731. It is a native of Canada and Virginia. See Pluk. alm. 98. t. 238. f. 5. The roots of this plant have been sold for those of sarsaparilla, and are still used as such by some of the inhabitants of Canada, though very different from the true sarsaparilla. 7. *A. cordata*; heart-leaved aralia; herbaceous; stem angular, unarmed; leaves simple, heart-shaped: stem suffruticose, ascending, villose, branching but little; leaves alternate, petioled, ovate-acute, toothed, rough on both sides; pale and ribbed beneath, unequal; flowers axillary, umbelled; peduncles trichotomous. A native of Japan. 8. *A. octophylla*; digitate-leaved aralia; stem arboreous, unarmed; leaves digitate, with eight leaflets; panicle umbelled. A tree, ten feet high; leaves on long footstalks; leaflets oblong, obtuse, entire, smooth, unequal, disposed in a ring; flowers yellow, sprinkled with red, in a vast terminating panicle, ending in umbels; no involucre; calyx truncate; petals oblong spreading.

spreading. It is a native of Cochin-China, where it is also cultivated, and used as a medicine in dropries. Near Canton there is a species or variety of aralia with ten stamens, and a ten cleft stigma. *A. palmata*; palmate-leaved aralia; stem scandent, prickly; leaves five-lobed; umbels simple, lateral: stem shrubby; leaves large, scattered, on long foot-stalks; flower white, without an involucre; petioles and peduncles unarmed; prickles on the stem, scattered, bowed back. A native of China. The bark of this is also used in dropries, and in cutaneous disorders. Possibly some of the above species may, on more accurate examination, be found to belong more properly to the genus *HEDERA*, which seems nearly allied to the aralia.

Propagation and Culture. The first sort is propagated by seeds, which are easily procured from North America, and which should be sown in pots filled with light earth, and placed in a shady situation till autumn, when the pots should either be plunged into an old bed of tan, or planted in a warm border, sheltered by a hedge or wall; and if the winter prove severe, it will be proper to cover the pots with straw or peas-haulm, to prevent the frost from penetrating deep into the ground. In March the pots should be plunged into a temperate hot-bed, which will bring up the plants early, so that they will have more time to get strength before the following winter. The pots should be constantly kept clean from weeds, and when the plants come up, they ought to be frequently refreshed with water; in May they should be inured to the open air; and when they are removed out of the bed they ought to have a shady situation. In mild weather these plants should be always exposed to the open air; but great care must be taken to guard them against frost; therefore the frames under which they ought again to be placed in October, are to be constantly opened when the weather is not severe. In the spring, before the plants begin to push, they should be carefully shaken out of the pots and separated; part of them should be planted singly in small pots, and the other may be planted in a bed of light earth, in a warm situation. If those which are planted in small pots, be placed in a moderate hot-bed, it will greatly forward their growth; but they must be early inured to bear the open air, otherwise they will draw up weak. In the following summer, they must have a shady situation, and next winter sheltered again; the spring following they may be shaken out of the pots, and planted where they are designed to remain. Those plants which were planted in the beds will require protection from the frost the first winter; but if the surface of the ground be covered with old tanner's bark, it will prevent the frost from penetrating to the roots; and in hard frosts some straw, peas-haulm, or any light covering, will secure the stems from being injured; and after they have remained in the beds two years, they will be strong enough to be transplanted in the places where they are intended to grow. This plant may be also propagated by its roots. The fifth and sixth species are hardly enough to be propagated with very little trouble. Their seeds should be sown in autumn. See Miller's Dict. by Martyn.

ARALIA arborea & capitata. See *HEDERA*.

ARALIA. in *Ancient Latin Writers*, denotes arable, or ploughing lands.

This is otherwise denominated *aratoria, araturia*.

In *Domesday* for Essex, we meet with *decem acras prati, duos runcal, quatuor aralia*—Where *aralia* seems to denote land fit for ploughing and tillage, by way of contradistinction to *runcalia*, which was over-run with briars and thorns. Du-Cange.

ARALIASTRUM, in *Botany*. See *PANAX*.

ARALUCUS, in *Ancient Geography*, a place of Gallia

Narboensis, north-north-east of Forum Julii. Venus had in this place a temple, which was destroyed in the year 447.

ARAM, a name given in scripture to Syria, from Aram the fifth son of Shem, by whose descendants, called Arameans, Syria was peopled.

ARAM, a town of Judaea, in the half tribe of Manasseh, on the other side of Jordan.

ARAM, in *Geography*, a town of Arabia, 58 miles N. E. of Chamir.

ARAM Rub-Rub, that part of Syria which lay N. of Palestine, and was the territory of the city of Rub, belonging to the tribe of Asher.

ARAM Damasc. or Syria Damascena, a principal and most powerful part of Syria, of which Damascus was the capital.

ARAM-Marchi, a district of Syria at the foot of mount Hermon, on the borders of the half tribe of Manasseh, on the other side of Jordan, called the coast of Marchi.

ARAM Nahrain, or Syria of the rivers, or Mesopotamia, situate between the Euphrates and Tigris, whence the name.

ARAM-Zohi, a county of Syria, near the Euphrates, conquered by David, and afterwards the site of Palmyra; bounded on the E. by the Euphrates, and on the W. by the land of Canaan and Syria Damascena.

ARAMACA, in *Ichthyology*, a name given by some naturalists to the species of *PLEURONECTES*, called by Linnæus mancus. Vide Ruysch. theat. anim. Maregrave, &c.

ARAMAGARA, in *Ancient Geography*, a town of India, on this side of the Ganges, according to Ptolemy.

ARAMASCHEVA, in *Geography*, a town of Siberia, 30 leagues S. of Tobolsk.

ARAMATHA, in *Ancient Geography*, a metropolitan city of the Ammonites, according to Josephus.

ARAMAYA, the name of a town of Arabia Felix, according to Ptolemy.

ARAMBYS, the name of the five factories established by Hanno, the Carthaginian admiral, on the western coast of Africa, between the river Lixus and the promontory of Solœ.

ARAMEI, ARAMÆANS, a name given by the Jewish lawgiver Moses, to the inhabitants of Syria and Mesopotamia. See *ARAM*. Pliny places a people of this appellation among the Scythians.

ARAMIS, in *Geography*, a town of France, in the department of the Lower Pyrenées, and chief place of a canton in the district of Oleron, on the Vert, seven miles S. W. of Oleron. The place contains 1050 and the canton 5,883 inhabitants: the territory includes 262½ kilometres, and 6 communes.

ARAMO, a town and fortress of South America, in the kingdom of Chili, near the Pacific Ocean.

ARAMONT, a town of France, in the department of the Gard, and chief place of a canton in the district of Nîmes, on the west side of the Rhone; 8 miles below Avignon. The place contains 2200 and the canton 10,577 inhabitants: the territory comprehends 120 kilometres, and 10 communes.

ARAMPO, or *MAN-EATER*, in *Zoology*, a name given by the negroes on the gold coast of Africa, to a long slender animal, in shape resembling a weasel, with a long tail, and large brush at its extremity, of a pale brown colour, and long thin hair. It is so called because it digs up graves, and is eager for human flesh. See *ADIVE*.

ARAMROY, in *Geography*, one of the principal ports of the district inhabited by a piratical tribe named Sangarians, and situated on the south coast of the gulph of Cutch, between the mouth of the river Indus or Sinde, and the river Puddar.

ARAN, a town of Persia, in the province of Irak, 35 leagues north of Isfahan.

ARANAS,

ARANAS, a town of Sweden, in the province of West Gothland. Also, a river of Spain, which runs into the Agra, one league below Pampeluna.

ARANCE, a town of France, in the department of the Ain, and chief place of a canton in the district of St. Rambert; 8 miles E. of Ambronay.

ARANDA, a town of Spain, in Arragon, 19 miles N. W. of Calalaid.

ARANDA de Duero, a small town of Spain, in Old Castile, on the Duero; 30 leagues north of Madrid, and 11 south of Burgos.

ARANDON, a town of France, in the department of the Ilere, and chief place of a canton in the district of la Tour du Pin, 10 miles S. of St. Sorian.

ARANE, in *Ancient Geography*, a town of the Lesser Armenia, according to Ptolomy.

ARANEÆ, in *Entomology*, a genus of apterous insects, well known by the common English name, SPIDER. The mouth is furnished with short horny jaws; lip rounded at the apex: feelers two, incurved, jointed, very acute at the tip, clubbed, with the genitalia in the male; no antennæ; eyes eight, or rarely six; feet eight; anus furnished with papillæ, or teats for spinning. Gmel Linn. &c.

Schæffer adds to the Linnæan character, that the feet are made for running; the head united to the thorax and the abdomen, which is of an oval form, and joined to the thorax by a short pedicle or stalk. He divides them into different families, according to the various situations of the eyes, in which he followed Frisch, Geoffroy, and others. The eyes of spiders are immoveable, and their structure is different from those of most other insects; consisting each of only one lens, which deprives them of the faculty of multiplying objects, as their immobility does that of seeing them if placed otherwise than exactly before either of them. Geoffroy had observed before, that all spiders have eight eyes, and that the eye at each extremity of the line, in the species which Linnæus believed to have only six, is double.

Fabricius and Gmelin have attended, in the subdivisions of the genus, very carefully to the situation of the eyes, which differs greatly in different species: in some, for example, they form a quadrangle on the back of the head, two looking in front, two behind, and two on each side; the disposition of them in the species globosa is altogether different; five of them form a semicircle in front, and three lie parallel to each other behind; in argentata, the order is precisely reversed, three parallel eyes are in front, and the semicircle of five are behind them; in extensa, they form two parallel lines across, of four eyes each; again, in pulchra, two are in front, and six in a transverse streak; three of which incline to one side, and three to the other; in goezii, they form two somewhat oblique longitudinal streaks, having four eyes in each; in avicularia, four are contiguous in the centre, and form a quadrangle, and the four others are disposed in the same order, one at each angle; in conica, according to Gmelin, are two more than usual; three being placed in front, three behind, and two on each side; and in albifrons, all the eyes are disposed in one line, which bends a little in the middle.

The species are numerous; Gmelin describes the following: fasciata, diadema, marmorea, reticulata, cucurbitina, calycina, octopunctata, bipunctata, arundinacea, angulata, riparia, labyrinthica, quadrilincta, redemita, corollata, montana, sanguinolenta, nigra, notata, rufipes, nocturna, sexpunctata, carnifex, flavissima, binaculata, quadri punctata, militaris, truncorum, rupestris, aquaticæ, palustris, triguttata, scopiformis, virefcens, fornicata, hexacantha, tetracantha, acukata, spinosa, spinipes, fuscata, opilionoides, Olbeckii,

Willkii, speciosa, horrida, latro, domestica, trilineata, dor-fata, impressa, viatica, laevipes, tricuspudata, globosa, argen-tata, fumigata, clavipes, faceata, extensa, lobata, longimana, cancriformis, nidulans, latens, signata, maftans, nigrita, cornuta, fimbriata, dorsalis, tarantula, cinerea, pubescens, fulvata, scenica, pulchra, goezii, avicularia, truncata, conica, albifrons, myops, longipes, serosa, fenoculata, scopulorum, luca, bicornis caspia, argentea, holofericea, spinimobilis, eruentata, hirtipes, venatoria, ocellata, tribullus, alba. Which see respectively.

Spiders have usually five teats or nipples at the extremity of the abdomen, whos' apertures they can enlarge or contract at pleasure. It is through these apertures that they spin a gluey substance, with which their bellies are full. They fix the end of their threads by applying these nipples to any substance, and the threads lengthen as the animal recedes from it. They can stop the issuing of the threads by contracting the nipples, and re-ascend by means of the claws on their feet, much in the same manner as men warp up a rope. When the common house-spider begins her web, she generally chooses a place where there is a cavity, such as the corner of a room, that she may have a free passage on each side, to make her escape in case of danger. Then she fixes one end of her thread to the wall, and passes on to the other side, dragging the thread along with her, (or rather the thread follows her as she proceeds), till she arrives at the other side, and there fixes the other end of it. Thus she passes and re-passes, till she has made as many parallel threads as she thinks necessary for the purpose. After this, she begins again, and crosses these by other parallel threads. These are the toils or snares which she prepares for entangling flies, and other small insects. But besides this large web, she generally weaves a small cell for herself, where she lies concealed, watching for her prey. Betwixt this cell and the large web she has a bridge of threads, which, by communicating with the threads of the large one, both give her early intelligence when any thing touches the web, and enables her to pass quickly in order to lay hold of it. There are many other methods of weaving, peculiar to different species of spiders, and some that deserve particular notice. Aranea venatoria forms a large cylindrical web under ground, with a lid connected by a kind of hinge, which she can open or shut at pleasure; she watches for her prey at the entrance of her den, which is level with the surface of the ground, and at the least approach of danger retreats into it and shuts the lid, by which means she is completely secure; this is a native of the hotter parts of South America. An European species, labyrinthica, spins an horizontal web on the ground, with a cylindrical cavity below the surface, in which she watches her prey: marmorea spins on the ground nearly in the same manner: some live in trees, and spin long perpendicular webs, as angulata: latens, horrida, and others, spin little webs on the under-side of the leaves of plants: and one kind, calycina, will secrete itself in the calyx of a flower, after the corolla has fallen off, and fasten on flies and other insects that may come to extract its juices.

The darting of long threads, by means of which some species also can convey themselves to a vast distance, is remarkable; and some have asserted, on that account, that spiders have the power of flight; though unquestionably no one will believe that a spider can have wings, as it could no longer be an apterous insect. Dr. Lister says, that attending closely to a spider weaving a net, he observed it suddenly to desert in the mid-work; and turning its tail to the wind, it darted out a thread with the violence and stream with which we see water spout out of a jet; this thread taken up by the wind

wind was immediately carried to some fathoms length, still issuing out of the belly of the animal. Some time after, the spider leaped into the air, and the thread mounted her up swiftly. Upon this discovery, he made the same observation on near thirty different sorts of spiders, and found the air filled with young and old, sailing on their threads, and doubtless seizing gnats and other insects in their passage, there being often manifest signs of slaughter, legs and wings of flies, &c. on these threads, as well as in their webs below. Dr. Hulse made the like discovery about the same time.

Dr. Lister thinks there is a fair hint of the darting of spiders, in Aristotle, Hist. An. lib. ix. cap. 39.; and in Pliny, lib. x. cap. 74. But with regard to their sailing the ancients are silent, and he thinks it was first seen by him. He also observes of those sailing spiders, that they will often dart, not a single thread only, but a whole sheaf at once, consisting of many filaments, yet all of one length, all divided each from the other, and distinct, until some chance either snap them off, or entangle them: but for the most part it may be observed, that the longer they become the more they spread, and appear like the numerous rays of a blazing star. As for that which carries them away in the air so swiftly, it is partly their sudden leap, partly the length and number of the threads projected, and partly the posture and management of their feet. Dr. Lister observed some sorts to use their legs, very like wings or oars; these being sometimes close joined, at others opened, and again bent and extended as necessity required. To fly they cannot be strictly said, because they are carried into the air by external force; but they can, when the wind will suffer them, steer their course, and perhaps mount or descend at pleasure; and in rowing themselves along the air, it is observable that they ever take their flight backwards. It is scarcely credible to what height they will mount; which yet is precisely true, and may be easily observed by any one that shall fix his eye some time on any part of the heavens, the white webs at a vast distance very distinctly appearing from the azure sky; but this is in autumn only, and in very fair and calm weather. Such are briefly the remarks of Dr. Lister, to which may be added part of his letter to Mr. Ray on the same subject: "Last October, &c. I took notice that the air was very full of webs; I forthwith mounted to the top of the highest steeple on the Minster (in York), and could there discern them exceeding high above me." He further observes, that they not only thus shoot their threads upward, and mount with them in a line almost perpendicularly; they also project them in a line parallel to the horizon, as may be seen by their threads running from one wall to another in a house, or from one tree to another in a field, and even from wall to wall across gardens of considerable extent.

The matter of which the spider's web is formed, as before observed, is a viscid juice prepared in the body of the creature, and emitted from the teats at the extremity of the abdomen. The apertures in these are numerous, and according to Reaumur, there are enough even in the compass of a pin's head to yield an amazing number of distinct threads. The holes are perceived by their effects: take a garden spider ready to lay its eggs, and apply the finger on a part of the papillæ, and as you withdraw the finger a vast number of distinct threads will appear. Reaumur has often counted seventy or eighty with a microscope; but has perceived that there were infinitely more than he could tell. In effect, if he should say that each tip of a papilla furnished a thousand, he is persuaded he would say much too little. The part is divided into an infinity of little prominences, like the eyes of a butterfly. Each prominence, no doubt,

makes its several threads; or rather between its several protuberances, there are holes that give vent to threads; the use of the protuberances, in all probability, being to keep the threads asunder, at their first exit before they are yet hardened by the air. In some spiders these protuberances are not so sensible; but in lieu thereof there are tufts of hairs which may serve the same purpose, viz. to keep the threads at a proper distance from each other. Be this as it will, there may threads come out at above a thousand different places in every papilla; consequently the spider having five papillæ, has holes for above five thousand threads.

Such is the tenuity of the threads in the larger sort of spiders. But if we examine the young produced by those, we shall find that they no sooner quit their egg than they begin to spin. Indeed their threads can scarcely be perceived, but the webs may; they are frequently as thick and close as those of the house-spiders; and no wonder, there being four or five hundred little spiders concurring to the same work. How minute must the apertures in the papillæ of these spiders be! The whole spider is perhaps less than a papilla of the parent which produced it. But there are even some kinds of spiders so small at their birth, that they are not visible without a microscope. There are usually found an infinity of these in a cluster: they only appear like a number of red points; and yet there are webs found under them, though well nigh imperceptible. What must be the tenuity of one of these threads? Leeuwenhoek has computed that one hundred of the single threads of a full grown spider are not equal to the diameter of the hair of his beard; and consequently, if the threads and hair be both round, ten thousand such threads are not bigger than such a hair. He calculates further, that when young spiders first begin to spin, four hundred of them are not larger than one which is of a full growth; allowing which, four millions of a young spider's thread are not so thick as the single hair of a man's beard.

Some experiments have been made to manufacture the threads of spiders into a kind of silk; and it is said that a *short-legged* species of garden-spider yields a silk scarcely inferior to that of the silk-worm. The webs of some foreign species might even be employed with still greater propriety for this purpose, than those which inhabit Europe. A later writer, Sir G. Staunton, in "the Embassy to China," alludes to this when speaking of the Java forests. "In some open spots (says that author) were found webs of spiders, woven with threads of so strong a texture, as not easily to be divided without a cutting instrument; they seemed to render feasible the idea of him who, in the southern provinces of Europe, proposed a manufactory of spiders' threads, which was so ridiculous to the eyes of those who have only viewed the flimsy webs such insects spin in England."

M. Bon, of Languedoc, about seventy years ago, contrived to manufacture a pair of stockings and mittens from the silk of the spider already mentioned: they were of a beautiful natural grey colour, and were almost as strong as those of common silk; and he published a dissertation concerning his discovery. M. Reaumur being appointed by the Royal Academy to make farther inquiry into this new silk-work, raised several objections and difficulties against it, which appeared in the Memoirs of the Academy for the year 1710. His arguments against it are chiefly these: the natural fierceness of the spiders renders them unfit to be bred and kept together. Four or five thousand being distributed into cells, fifty in some, one or two hundred in others, the big ones soon killed and eat those which were least, so that in a short time there were scarcely above one

or two left in each cell; and to this inclination of devouring their own species in common with any other insect they can overcome, Reanmur ascribes the scarcity of spiders, considering the vast number of eggs they lay.

But this is not all; he affirms, and it is well known since, that the spider's bag is inferior to that of the silk-worm, both in strength and lustre, and produces less of the material proper to be manufactured. The thread of the spider's web, he says, can only bear a weight of two grains without breaking; and that of the bag bears thirty-six. The latter therefore, in all probability, is eighteen times thicker than the former; yet it is weaker than that of the silk-worm, which bears a weight of two drams and an half. So that five threads of the spider's bag must be put together to equal one thread of the silk-worm's bag. Now it is impossible these should be applied so justly over one another as not to leave little vacant spaces between them, whence the light will not be reflected; and of consequence, a thread thus compounded must fall short of the lustre of a solid thread. Add to this, that the spider's thread cannot be wound off as that of the silk-worm may, but must of necessity be carded; by which means being torn in pieces, its evenness, which contributes to its lustre, is destroyed. In effect, this want of lustre was taken notice of by M. de la Hire, when the stockings were presented to the Academy. Again, spiders furnish much less silk than the worms: the largest bags of these latter weigh four grains, the smaller three grains; so that 2304 worms produce a pound of silk. The spiders' bags do not weigh above one grain; and when cleared of their dust and filth, lose two-thirds of that weight. The work of twelve spiders, therefore, only equals that of one silk-worm; and a pound of silk will require at least 27,648 spiders. But as the bags are wholly the work of the females, who spin them to deposit their eggs in, there must be kept 55,296 spiders to yield a pound of silk: yet this will only hold good of the best spiders; those large ones ordinarily found in gardens, &c. scarcely yielding a twelfth part of the silk of the others. Two hundred and eighty, it seems, of these would not yield more than one silk-worm; 663,552 of them would scarcely yield a pound.

The act of generation among spiders varies in different species. As these insects prey upon each other, except during the time of their amours, they dare not come within reach of one another but with the utmost caution. They may be sometimes seen stretching out their legs, shaking the web, and tampering with each other by a slight touch with the extremity of their feet; then, in a fright, dropping hastily down their thread, and returning in a few moments to make a fresh trial by feeling. When once both parties are well assured of the sex they have to deal with, the approaches of their feet in order to feel are more frequent, confidence takes place, and amorous dalliance ensues. "We cannot," says Lyonnet, "but admire how careful they are not to give themselves up blindly to a passion, or venture on an imprudent step, that might become fatal to them." A caveat this to the human kind. Lister and Lyonnet, two accurate observers, say, that the extremity of those arms or claws, which the spider uses to grasp his prey with, suddenly opens, as it were by a spring, and lets out a white body, the sexual organs in the male; those of the female are beneath the abdomen; a fact which later naturalists have ascertained.

These disgusting animals, in every stage of their existence, prey with the most savage ferocity upon all insects they can overcome, and also upon one another, as already observed. They cast their skins once in a year, and this

they perform by suspending themselves in some corner, and creeping out of it. In respect of colour, they vary greatly in individuals of the same species. The sphex and ichneumon are their mortal enemies.

The weapon wherewith the spiders seize and kill their prey is a pair of sharp crooked claws, or forceps, placed in the fore-part of the head. They can open or extend these pincers as occasion may require; when undisturbed, they suffer these to lie one upon another. Leeuwenhoek says, that each of these claws has a small aperture, or slit, through which he supposes a poisonous juice is injected into the wound it makes. Dr. Mead, in his Essay on Poisons, dissenting from this opinion altogether, having never been able, on repeated examinations, to discover any such opening, not even in the claws of the largest spiders; which being above fifty times larger than any of the European spiders, would have more easily afforded a view of the opening, if nature had allotted any to this part of the animal. Besides, repeated observations also convinced him that nothing dropped out of the claws of the living spider when he bit any thing, because they were always perfectly dry; but that a *scort proboscis* was at the same time thrust out of the mouth, which insinuated a liquor into the wound. And the same writer observes, that the quantity of liquor emitted by the common spiders when they kill their prey is visibly so great, and these wounding instruments (the claws) so minute, that they could contain but a very inconsiderable portion thereof, if it were to be discharged through them. In justice to this remark of Dr. Mead, it may be added, that though there is an apparent groove or indentation visible on these fangs, in some very gigantic species, they do not appear to be perforated; and in general they are smooth without even this apparent indent. The form of the fang may be compared in some respects to those of a poisonous snake: the latter, beside the aperture at the base, has a linear opening near the tip; and through this, and perhaps the other also, it discharges a mortally poisonous fluid into the wound it inflicts, in the same manner as the spider is supposed to do: now, in some great spiders, these fangs are nearly, if not quite, as large as those of a rattlesnake of a moderate size; and yet, in such, this aperture, if it does really exist, is not only invisible to the naked eye, at the same time that they are sufficiently obvious in the fang of the snake, but appears even doubtful under the deepest glasses with which the claw can be examined. There is, as before said, a kind of grooved indent in the claws of some species; but whether they answer the above purpose, or are even perforated, is a point on which the naturalist must decide with caution.

The skins that have been shed, and are found in the webs, being dry and transparent, have also the claws attached to them; and these may be more easily examined than in the living spider.

ARANEA, in *Mineralogy*, a silver ore found only in the mines of Potosi, or in the single mine there of Catamito. It owes its name to some resemblance it bears to a cobweb, being composed of threads of pure silver, which to the sight appear like a silver lace when burned to separate the silk from it. It is the richest of all kinds of silver ore.

ARANEA *Tunica*. See ARACHNOIDES.

ARANEIFORMIS, in *Entomology*, a species of CERAMBYX. The thorax is spinous and tuberculated; wing-cafes porous; antennæ long, with a single tooth on the fifth joint. Fabr. Spec. Inf. *Obs.* Gmelin misquotes the Fabrician character, "articulo quinto unideutato," for "articulo quinto barbato," p. 1819. This insect inhabits South America.

ARANEIFORMIS, in *Natural History*, a species of ECHINUS. It is orbicular, grey, with shining greyish-purple

spines, which are thickest in the middle. This is *Echinometra multipes* *f. spinosissima Americana* of Seba; and *Spinneckhoff*. Phleif. Zee-egcl. Inhabits the American seas. Gmelin.

ARANEOIDES, in *Entomology*, a species of CIMEA, in the section "oblongus." It is yellow, with very long legs, and inhabits Germany. Schæff. Gmelin.

ARANEUS, a species of CANCER, found in the European seas. The thorax is ovate, tuberculated, and hairy; front bifid; claws ovated. Linn. Fabr. Gmel.

ARANGAS, in *Ancient Geography*, a mountain placed by Ptolemy in the interior Libya.

ARANGHERA, in *Geography*, one of the Bissagos islands in the Atlantic, at the mouth of the river Grande, near the coast of Africa.

ARANIMEGLIES, a small but beautiful town of Hungary, in the country of Zatmar, situate in the middle of a plain between the rivers Samos and Tur; three leagues north-east of Zatmar.

ARANIOS, a river of Transylvania, which rises near Clausenburg, and joins the Marisch.

ARANJUEZ, a village and royal palace of Spain, in New Castile, situate on the Tagus, six leagues north-east of Toledo, and ten south of Madrid.

ARANJUEZ, a town of South America, in Mexico, in the province of Costa Rica.

ARANNOS, a town of Spain, in Navarre, three leagues from St. Estevan.

ARANTA, a sea-port town of South America, in Peru, and jurisdiction of Arequipa, with a deep harbour and narrow entrance; ten leagues south-west of Arequipa.

ARANTIA, in *Ancient Geography*, a country of Peloponnesus, according to Pausanias; and also a town of the same country, situate on a hill, called "Arantinus Collis."

ARANTIUS, JULIUS CÆSAR, in *Biography*, a celebrated anatomist and physician, born at Bologna, about the year 1530; studied under his uncle Bartholomew Maggius, and under Vesalius; and took his degree of Doctor in Medicine, and was afterwards made professor of medicine, anatomy, and surgery, in the same university; in which situation he continued to the time of his death, in 1589. He was indefatigable in his researches into the structure of the human body, which he took every opportunity of dissecting and examining. In his first work, "De humano fœtu," published at Rome, in 1564, he corrected many mistakes of former anatomists, in their description of the uterus, which they had generally taken from brutes. He properly describes the vessels of the uterus as derived from the spermatics and hypogastrics. He described the foramen ovale, and ductus arteriosus in the fœtus; and denies the existence of urachus, or of allantoid membrane, in the human subject. This book has been frequently republished. In 1579, he published "In Hippocratem de vulneribus capitis brevis commentarius;" and in 1581, "De tumoribus præter naturam liber," 4to.; in which he describes a pair of forceps he had contrived to extract polypi from the nostrils. He shewed there was no passage from the right to the left ventricle of the heart, but that the blood was carried from the heart, through the lungs, by the pulmonary artery; thus making one step towards the discovery of the circulation of the blood, which was afterwards completed by Harvey. Haller Biblioth. Anat. et Bib. Chirurg.

ARANYVAN, in *Geography*, a fortress of Transylvania, in the county of Weissenburg, on the north side of the Marisch, six miles north of Millenbach.

ARAPABACA, in *Botany*. See SPIGELIA.

ARAPIIA, in *Ancient Geography*, an island which belonged to Caria. Steph. Byz.

ARAPUS, the name of a river of Carmania, according to Ptolemy.

ARAQUES, in *Geography*, a town of Spain, in Arragon, four leagues north-north-west of Jaca.

ARAQUIL, a town of Spain, in Navarre, five leagues west of Pampeluna; supposed to be the ancient Aracillum, or Arocellis.

ARAR, in *Ancient Geography*, the Saone, a river of Celtic Gaul, which, according to Cæsar, separated the territory of the Sequani from that of the Ædui; and the course of which is so slow, that its motion cannot be perceived; whence Pliny calls it "the sluggish river;" and Silius Italicus describes it (lib. xv. v. 504. p. 773. ed. Drakeb.) to the same purpose:

"Quorum serpit Arar per rura pigerimus undæ."

Over this river the soldiers of Cæsar built a bridge in one day.

ARARAT, a mountain of Asia, in Armenia, on which the ark of Noah rested after the cessation of the deluge. Concerning the etymology of the name, Dr. Bryant observes (Anc. Myth. v. iii. p. 2.), that it is a compound of *Ar-Arat*, and signifies "the mountain of descent," being equivalent to *הר-ירד*, Har-irad, of the Hebrews.

Of the precise situation of this mountain different accounts have been given. Some have supposed that it was one of the mountains which divide Armenia on the south from Mesopotamia and that part of Assyria inhabited by the Curds, from whom those mountains took the name of Cardue, or Cardu; by the Greeks denominated Gordyæi. It is called by the Arabs Al-Judi, and also Thamanin. In confirmation of this opinion, it is alleged that the remains of the ark were to be seen on these mountains; and it is said, that Berofus and Abydenus both declare, that such a report existed in their time. Epiphanius pretends, if we may credit his assertion, that the relics of the ark were to be seen in his time; and we are further told, that the emperor Heraclius went from the town of Thamanin, up the mountain Al-Judi, and saw the place of the ark. Others maintain, that mount Ararat was situated towards the middle of Armenia, near the river Araxès, or Aras, about twelve miles from it, according to Tournefort, above 280 miles distant from Al-Judi, to the north-east. This mountain is called "Mafis" by the Armenians, and by the Turks "Agridagh," or the heavy and great mountain; and stands about twelve leagues to the south-east of Erivan, and of Ejmiadzin, from which it is distant about two short days' journey; four leagues from the Aras, and ten to the south-west of Naxuan, or Naclidshevan, or Naçshevan, of M. D'Anville, and the Naxuana of Ptolemy. Near this city is another small town, mentioned by William de Rubruquis, who travelled through Armenia in 1253, and called Cernainum, which is by interpretation eight, and as he says, so called from the eight persons who came out of the ark and built it. This is supposed to be the same with Shemainum or Shemanum, formed of the Hebrew *שמן*, eight, or the Themanim and Thamanim of Elmacieri and others, which was said to have been built by Noah. Ararat seems to be a part of that vast chain of mountains called Caucasus and Taurus; and upon these mountains and in the adjacent country, were preserved more authentic accounts of the ark than in almost any other part of the world. The region about Ararat, called Araratia, was esteemed among the ancients as nearly a central part of the earth; and it is certainly as well calculated as any other for the accommodation of its first inhabitants, and for the migration of

of colonies, upon the increase of mankind. The soil of the country was very fruitful, and especially of that part where the patriarch made his first descent. The country also was very high, though it had fine plains and valleys between the mountains. Such a country, therefore, must, after the flood, have been the soonest exsiccated, and consequently the soonest habitable.

Some have objected to the Mosaic account of the dove and olive, and will not allow that the ark rested in Armenia, because travellers of late have discovered no olives in that country. Thus also it might be said, that because there are in these days no balsam at Jericho, nor date trees in Babylonia, there were none in ancient times; but the inference with regard to Armenia would be as false as it is frivolous. Strabo, who was a native of Asia Minor, speaks expressly of the fertility of Armenia, and especially (lib. xi. t. ii. p. 800.) of the region Gogarene, which he particularly mentions as productive of the olive.

It is not certain when the descendants of Noah quitted this country. Many of the fathers were of opinion, that they did not leave it for some ages. According to Epiphanius (Hær. lib. i. p. 5.), they remained in the vicinity of Ararat for five generations, during the space of 659 years. Probably Noah might never depart from it; nor have we any account of his sons leaving it till the general migration.

The mountain has still the name of Ararat, which it has retained through all ages. Tournefort (vol. ii. 267, &c.) has particularly described it, and from his account it seems to consist chiefly of free-stone, or calcareous sand-stone. It is a detached mountain in form of a sugar-loaf, in the midst of a very extensive plain, consisting of two summits; the lesser more sharp and pointed, the higher, which is that of the ark, lies north west of it, and raises its head far above the neighbouring mountains, and is covered with perpetual snow. When the air is clear, it does not appear to be above two leagues from Erivan, and may be seen at the distance of four or five days journey. Its being visible at such a distance, however, is ascribed not so much to its height, as to its lonely situation, in a large plain, and upon the most elevated part of the country. The ascent is difficult and fatiguing. Tournefort attempted it; and after a whole day's toil, he was obliged, by the snow and intense cold, to return without accomplishing his design, though in the middle of summer. On the side of the mountain that looks towards Erivan, is a prodigious precipice, very deep with perpendicular sides, and of a rough black appearance, as if tinged with smoke.

ARARAT, *Mount*, or the *stone head*, is the name of a short range of mountains on the north frontier of North Carolina, in a north-east direction from Ararat river, which is a north-west branch of Yadkin river.

ARARAUNA, in *Ornithology*, a species of PSITTACUS. Above blue, beneath yellow; cheeks naked, with feathered lineations. Gmelin, &c. The length of this bird is two feet seven inches. Its bill is black; forehead to the crown and sides of the head dull green, the rest of the body above fine blue to the coverts of the tail; cheeks and throat covered with a bare white skin; each cheek marked with black lines composed of very short feathers, which arise at the angles of the mouth, and pass beneath the eyes towards the back of the head; the eye-lids are edged with black; irides pale yellow; beneath, the body is of a pale saffron colour, and in some there is an intermixture of this colour on the wing coverts; the tail is blue above, and the inner margins of the feathers violet, except the two in the middle; it is wedge-shaped; the legs cinereous, and the claws black.

This bird inhabits Jamaica, Guiana, Brasil, and Surinam.

Another parrot, nearly resembling this, is described by different authors; it has not the feathered lines on the cheeks which are so conspicuous in this species, and the top of the head is blue instead of green. Gmelin calls it a variety (β), though he gives it a specific name *cæruleus*; blue parrot, or maccaw; psittacus maximus cæruleus varius, cauda producta, Brown, Jam. & Gmel. This bird inhabits the same places as the other, but is more uncommon. The natives know the two birds by their cry, and they say the latter does not pronounce the word *ara* so distinctly as the blue and red maccaw, or parrot.

ARARI, in *Geography*, a river of South America, in Brasil, which runs into the Northern Sea, in the prefecture of Tamaraca.

ARAS, the ancient ARAXES, a river of Asia, which rises in the Caucasian mountains, and after traversing Armenia and part of Persia, discharges itself into the Kur, or Cyrus.

ARASENG, a town of Persia, in the province of Irak, ten leagues south of Casbin.

ARASSI, a maritime town of Italy in the state of Genoa. It is a place of some trade, and well peopled; and here vessels may be hired for Genoa or any part of Italy. N. lat. 44° 4'. E. long. 7° 20'.

ARATEIA, in *Antiquity*, a yearly festival celebrated at Sicyon, on the birth-day of Aratus, wherein divers honours were paid by a priest consecrated to this service, who for distinction's sake wore a ribband bespangled with white and purple spots.

The aratea were solemnized with much pomp of music, the choirsters of Bacchus attending. Potter, Archæol. lib. ii. cap. 20.

ARATHAPESCOW, in *Geography*, an Indian tribe, inhabiting the shores of the lake and river of that name, in the north-west part of North America, between N. lat. 57° and 59°. North of the abode of this nation, and near the Arctic circle, is lake Edlande, around which live the dog-ribbed Indians.

ARATO-BAFABEN, in *Astronomy*, a fixed star of the second magnitude in the head of the DRAGON.

ARATUM *terre*, in our *Ancient Law Books*, as much land as can be yearly tilled with one plough.—“Hoc manerium est 30 aratorum.”

ARAFURA *terre*, an ancient service which the tenant was to do his lord, by ploughing his land.

ARATUS, in *Biography* and *Ancient History*, a famous general of the Achæans, was the son of Clinias of Sicyon, and born about the year before Christ 273. When his father and several of his kindred and friends were either massacred or banished by the tyrant Abantidas; Aratus, being then about seven years of age, made his escape, and found an asylum in the house of the tyrant's sister: after concealing him for some time, she sent him privately to his friends at Argos. Here he received a liberal education, and distinguished himself by his skill and strength in athletic exercises. Having conceived betimes a detestation of tyrants, he had scarcely attained his 20th year before he formed a plan of rescuing Sicyon, his native place, from Nicocles, who was then its tyrant. With his view he scaled the walls by night, and at day-break invited the citizens, by the voice of a herald, to resume their ancient liberty. The summons was joyfully obeyed, and the city regained its freedom by a revolution, which did not cost a single life. For its future security against the partisans of Nicocles, he found it necessary to unite this city with the confederacy, called the Achæan league; and having been entrusted with supreme constitutional power in Sicyon, he exercised it in a manner which gained him universal esteem, and contributed

to the establishment of order and tranquillity. In the office of prætor, or general of this league, to which he was afterwards advanced, he recovered the citadel of Corinth from a Macedonian garrison, by a military stratagem that has been highly applauded, and thus induced other cities to join the confederacy. Aratus also rescued Argos from its tyrant Arilippus, by persevering skill and valour. In the mean time the Ætoliæ, jealous of the growing power of the Achæans, pursued hostilities which were injurious to the reputation of Aratus, and reduced the league to great extremities; and for suppressing parties which were formed against him both in Sicyon and in Corinth, he was under the necessity of recurring to severe measures. In order to obtain effectual assistance, he was constrained, against his own principles and inclinations, to advise the Achæans to engage the support of Antigonus Dofon, king of Macedon; who, entering the Peloponnesus with a large army, afforded them seasonable relief. When, on a subsequent occasion, the Achæans took part with the Messenians against the Ætoliæ, Aratus marched against the invaders, and avoided an action. But, during their retreat, and perceiving that they were laden with plunder, he made an unexpected attack upon them, by which they were completely defeated. For this conduct he was publicly accused, and escaped a censure by his submission. The Achæans were then obliged to have recourse to Philip, the successor of Antigonus: and in the war that ensued, the king of Macedon conceived a dislike to Aratus, which induced him to retire to Sicyon, where he reflected with regret on the imprudence of ever calling the Macedonians into Peloponnesus. This dislike on the part of Philip was gradually heightened into an invincible hatred: and he determined to sacrifice the object of his resentment and aversion. For this purpose he employed Taurion, one of his officers, to dispatch him secretly, and it is said that the charge was executed by means of poison, which was administered at an entertainment to which Aratus was invited. The consequence was a lingering disorder, which the Achæan general bore with patience and without complaint, though he was not ignorant of its cause. Happening one day to spit blood before one Cephalion, who was his intimate friend, and who seemed surpris'd, he said, "Behold, my dear Cephalion, the effect of friendship with kings." Aratus died at Ægium in the year before Christ 216, in the 57th year of his age; being then prætor of the Achæans for the 17th time. The Sicyonians claimed the honour of burying him; and brought his body in triumphal procession from Ægium to Sicyon, dancing before it, and singing hymns and odes in commendation of his eminent virtues. They then buried him in the most elevated and conspicuous part of the city, which was long after called "Aratium," and where they offered two annual sacrifices, one on his birth-day, and the other on the day when he delivered the city from its tyrants. A priest was appointed for performing the rites that were instituted in honour of him by the Achæans.

Aratus was regarded as one of the greatest men of his time, and may be justly denominated one of the founders of the Achæan republic. As a military commander, he excelled more in forming and projecting extraordinary enterprises, than in executing them. In his administration, he adopted measures of policy which his judgment condemned, and which proved detrimental in the issue both to the Achæans and to himself; such especially was that of calling in the kings of Macedon to the assistance of the republic. He was less superstitious than most of the Greeks, and acted from the suggestions of his own mind rather than from omens and oracles. His temper was amiable, and his

manners virtuous. As an historian, he wrote "Commentaries" of his own actions, and the affairs of the Achæans. Plutarch de Arato, apud op. t. i. p. 1027—1052. Polybius, l. viii. p. 518, &c. Anc. Un. Hist. vol. vi. p. 81—89.

ARATUS, a Greek poet and astronomer, was born, according to Strabo, at Soli or Solæ, afterwards called Pompeiopolis, in Cilicia, according to others at Tarsus; and flourished about the 125th Olympiad, or about 278 years before Christ. Having received instructions from Menecrates the Ephesian grammarian, and the philosophers Timon and Menedemus, Dionysius Heracleotes, and Perseus the stoic, he was patronized by Antigonus Gonatas king of Macedon, who encouraged him in his studies and appointed him his physician. He went to Macedon at the time of the celebration of the nuptials of Antigonus and Phila the daughter of Antipater, and continued at his court during the remainder of his life. Of his poetical works, which were his chief productions, the only piece extant is an astronomical heroic poem, in Greek, entitled "Phænomena." In this poem he treats of the nature and motions of the heavenly bodies, the figures of the constellations, their relative situations in the sphere, their rising and setting, and the fables connected with their names. Cicero, when young, translated this poem into Latin verse, and highly commended the poetry, though he does not allow that he understood astronomy. De Orat. lib. i. For the materials of this poem, it is said, that he was indebted to Eudoxus. Grotius thinks, that he transferred into his poem the observations of various authors in different climates, and for want of astronomical knowledge, confounded them. Among the ancients this poem had many admirers, and it has had numerous commentators: Virgil has copied it in his "Georgics;" and St. Paul has made a quotation from it. Act. xvii. 28. The words "Τὸ γὰρ καὶ γένος ἐσμεν," for we are also his offspring, are a part of the fifth line of this poem: and other passages, to which this citation hath been referred, in Cleanthes's hymn to Jupiter, Pythagoras's golden verses, and Oppian's Halieutica, though they agree in sentiment, vary in expression. Quintilian (Instit. Orat. l. x. c. 1.) observes, that the subject of this poem has nothing of the pathos, no variety, no fictitious persons introduced speaking, with the other ornaments which have so great an effect in other kinds of poetry; however that the author was very capable of executing the design he undertook. Besides Cicero's translation of Aratus, of which a few fragments remain, we have an entire version in Latin hexameters, by Cæsar Germanicus, and another by Avienus. In later times, the poem of Aratus has been translated into Latin by Alenus, printed in 4to. at Paris, in 1651; and in 4to. by Grotius at Leyden, in 1600; and also into various modern languages. The principal editions of the Greek original are in 4to. by Morell, at Paris, 1559; in folio, by H. Stephens, at Paris, in 1566; in 8vo. at Oxford, by bishop Fell, in 1672; in Greek and Latin, with the ancient versions, &c. at Paris, in 4to. 1540; at Basil, in 1649; in 8vo. by Salvinus, in Greek, Latin, and Italian, at Florence, in 1765. It is also contained in the editions of the ancient astronomers. Fabr. Bib. Græc. l. iii. c. 18. t. 2. p. 490, &c. Gen. Diçt.

ARAVA, in *Geography*, a fortress of Upper Hungary, in a country and upon a river of the same name. N. lat. 49° 20'. E. long. 20°.

ARAVACOURCHY, a town of Hindostan, in the Mysore country, 17 miles south-west of Carroor, and 23 north of Dindigul. N. lat. 10° 45'. E. long. 73° 1'.

ARAUCO, a fortress and town of Chili in S. America, situate in a fine valley on a river of the same name, north by west from Baldivia. The native Indians, called Arauques

or Arauceans, are so brave that they drove the Spaniards out of their country, though destitute of fire-arms. A peace was concluded between them and the Spaniards in 1659, which was celebrated in a poem by Alonzo de Ercilla. S. lat. $37^{\circ} 30'$. W. long. $73^{\circ} 20'$.

ARAVITA, a town of Spain, in the country of Cordova, 16 leagues from Cordova.

ARAUROS, now *Eraut*, in *Ancient Geography*, a river of Gallia Narbonensis, called by Strabo, Araura.

ARAUSA, a town of Iltria, placed in the itinerary of Antonine, 20 miles from Blandona, in the way to Salona.

ARAUSIO, *Civitas Arausensis*, or *Arausicorum*, called *Colonia Secundanorum*, because the veterans of the second legion were settled there, the capital of the Cavares in Gallia Narbonensis. This is now Orange in the west of Provence, on an arm of the River Egue, which soon after falls into the Rhone, from which it is distant about a league to the east, at the foot of a mountain. An ancient amphitheatre is still to be seen in this place. N. lat. $44^{\circ} 10'$. E. long. $4^{\circ} 46'$.

ARAUZONA, a town of Illyria, according to Ptolemy.

ARAW, or ARAU, in *Geography*, a town of Switzerland, in the Argow, and canton of Berne, situate on the river Aar, in a fertile country, and containing about 1700 inhabitants. The principal manufactures are cotton, cotton fluffs, printed linens, cutlery, and tanning. It is a large and handsome town; 21 miles south-east of Basle. The treaty of peace concluded in 1712, at Aarau, between the protestant and catholic cantons, is one of the fundamental principles of the Helvetic union, or of the code of public law between the combined republics of Switzerland. N. lat. $47^{\circ} 23'$. E. long. $4^{\circ} 46'$.

ARAXA, a river of Spain, which runs into the Orio at Tolosa.

ARAXA, in *Ancient Geography*, a town of Asia, in Lycia, according to Ptolemy and Stephan. Byz.

ARAXAI, in *Geography*, a river of South America, in Brasil; its course was towards the prefecture of Paraiba, where it discharged itself into the river Mongaguaca.

ARAXES, in *Ancient Geography*, now ARAS, a river of Armenia Major, which rose in a mountain called by Strabo Abus (see ABA), and by others Capotes and Achos, a part of the Caucasus; continued its course eastward to the city of Atropatane, and thence inclining north-westward, flowed near Azara and Artaz, and fell at length, as Strabo and other geographers say, into the Caspian sea, near the mouth of the Cyrus; but according to Plutarch, Pliny, and Arrian, with whom our modern geographers agree, into the Cyrus. Ptolemy, indeed, divides the Araxes into two branches, and represents one as falling into the Cyrus and the other into the Caspian sea. Its impetuous course, which would not admit of a bridge, is described by Virgil, *Æn.* viii.

“ — pontem indignatus Araxes.”

On the banks of this river have appeared, at different times, the most renowned warriors of antiquity, Xerxes, Alexander, Lucullus, Pompey, and Mithridates. See ABORAS. Reland and Calmet are of opinion, that the Araxes is the Gihon of Genesis; and the name of Gihon signifying, according to its Hebrew etymology, the *impetuous, eruptive* river, confirms this opinion. However, the Gihon of the Arabians was the Oxus, and not the Araxes of the ancients. There are two rivers which bear the name of Araxes, one in Media and the other in Persia, which have been sometimes confounded. The first is that above described; the other runs through Persia, washes the walls of Schiras, and is now distinguished by the name of Bend-Emür, or BUNDAMIR.

ARAXUM, a promontory of Achaia, bearing towards the north-west.

ARAYA, in *Geography*, a celebrated cape of South America, in S. lat. $11^{\circ} 2'$, situate in Terra Firma and New Andalusia, and forming the gulph called by the Spaniards “Golfo di Cariaco.”

ARAZ, a mountain of Africa, within the precinct of Gigeri or Jigel, bordering on the Numidian deserts; which stretches between 25 and 30 leagues in length from north to south, and is every where very difficult of access. The inhabitants are a race of Arahs, called Cabeyl zen: a warlike people, who made this ridge the last refuge of their liberty, and have preserved it ever since by the natural strength of their precipices. Before the year 1664, they used to traffic with the French factory at Gigeri, and carried thither hides, corn, and wax; but upon the breaking out of a war between France and Algiers, a fort was built on the sea-coast to be a check on these Arabs. The French admiral was attacked during the work, and the fort demolished; and since this time they have occasionally plundered all strangers that are wrecked upon their coasts, and indiscriminately made slaves of their prisoners, though they have belonged to nations in amity with Algiers and the Porte; the Mahometans only are discharged, and sent home with a small viaticum.

ARBA, in *Ancient Geography*, a name given to Hebron, first possessed by giants of the race of Anak; and afterwards given to the tribe of Judah, and the property of it to Caleb. The rabbins pretend that Hebron had the name *Arba*, signifying *four*, because the four most illustrious patriarchs, Adam, Abraham, Isaac, and Jacob, were buried there; or, as others say, with as little reason, because four of the most celebrated matrons of antiquity were interred there; viz. Eve, Sarah, Rebecca, and Leah.

ARBA, now *Arbe*, an island and city of Illyria, now belonging to the states of Venice, and situate in the gulf of Quarnero on the coast of Dalmatia. The city is a bishop's see. Although this island is not larger in circumference than about 30 miles, wholly uncultivated, and in some parts uninhabitable, the city has always, from the time of the Romans, maintained its reputation. In the eleventh century, gold and silk were not rare among the inhabitants. It became subject to the kings of Hungary, and afterwards dependent on Venetian feudatories, and at length it was reduced under the dominion of the republic, which appoints a governor with the title of count and captain. The whole number of people in the island does not exceed 3000, who are nevertheless obliged to maintain three convents of friars, and as many of nuns, and near 60 priests. The climate is very variable, and subject to tremendous and destructive storms, which are very fatal to the sheep that are kept in the pastures of the mountain; and no less injurious, when they occur, to the plants and corn. The air, however, is upon the whole salubrious; and the aspect of the island is very pleasant. On the east it has a high mountain, at the foot of which, towards the west, are fruitful plains interspersed with little hills which are very productive. At the northern extremity is a delightful promontory called Loparo, that stretches into the sea, and that incloses a cultivated plain; near which are two small islands called S. Gregorio and Goli, very useful to shepherds and fishermen. The coast that faces the Morlaccia mountains is steep and inaccessible, and the channel between them is very dangerous. The long and narrow island, called Dolin, lying parallel to Arbe, along the coast of Barbado, forms a channel less dangerous. In the vicinity of the city of Arbe there are several harbours, by which the trade of the best part of the island is facilitated. The city stands on an eminence between two harbours, which form a peninsula, and contains about a thousand inhabitants.

inhabitants. At the foot of the Moracca, the soil towards the shore is nothing but marble; but in the district of Barbado it is gravelly and fit for vines, which yield a wine that is much esteemed. Below the ruins of Colento, the land bears vines, olives, mulberry, and other fruit-trees; and also in the lower parts, corn. The island is well supplied with springs of water, and would furnish its inhabitants with ample subsistence, if they were not in the extreme stupid and indolent. It produces, however, fire-wood, of which quantities are annually conveyed to Venice; corn, oil, wine, brandy, and silk; and also hides, wool, sheep, hogs, and horses of a good breed. It has likewise abundance of good salt; and the fisheries of tunny and mackerel supply no inconsiderable articles of trade. The island, notwithstanding these advantages, is poor, because much of the land remains uncultivated, and the peasants are lazy.

ARBA, *Astab*, a river of Asia in Persia. Its source is in about 34° 36' N. lat., and after flowing in a south-west direction, it discharges itself into the Delas, a little above its mouth. It was near this river that the Persian army assembled to protect Ctesiphon, when it was threatened by Heraclius.

ARBA, a town of Peloponnesus, in Achaia.

ARBACA, a town of Persia, in Arachosia, supposed to have derived its name from some of the kings of Parthia named Arbaces.

ARBACE, the name of a town of Celtiberia, mentioned by Steph. Byz.

ARBACES, in *Ancient History*, was general of the Medes and governor of Media under Sardanapalus, king of Assyria. Disgusted by the effeminate manners of Sardanapalus, he took up arms in conjunction with some of the principal officers of the Median army; and having formed an alliance with Belshis, governor of Babylon, attacked Sardanapalus, with an army of 400,000 men. After three successive defeats, Arbaces was joined by the Bactrians, and falling suddenly in the night on Sardanapalus, drove him from his camp; upon which this prince retired to Nineveh, and entrusted the command of his army with Salamanus, his wife's brother, who was overpowered by the conspirators, and lost almost the whole of it. The conspirators proceeded to besiege Nineveh, and after ineffectual efforts, during two years, for reducing it, a considerable breach was made in the wall by the inundation of the river Tigris, and thus they were enabled to enter and take possession of the city. Upon this success, Sardanapalus retired into his palace, and placed himself, his companions, and his treasures, on a pile of wood, to which he set fire, and they were thus all destroyed. This event terminated the Assyrian empire about the year 820 before Christ, according to Eusebius; but according to Justin and others, in the year 900 before Christ; and Arbaces was declared king. With him commenced the monarchy of the Medes, and he reigned 28 years. He is represented as a prince of great generosity and gratitude; and Dr. Prideaux supposes that Tiglath-Pileser and Arbaces are the same person, under different names; whereas archbishop Usher distinguishes them, and assigns to the one the possession of Media, and to the other that of Assyria. Prid. Conn. pt. i. b. 1. See MEDIA.

ARBAEJN, in *Geography*, a town of Arabia, 12 miles north of Zebid.

ARBALET. See *Cross Bow*, and BALLISTA.

ARBALI, in *Ancient Geography*, a Sarmatian nation, according to Ptolemy, and supposed to have inhabited the part of Asia which is near the Wolga.

ARBANA, the name of an island in the vicinity of Taprobana, according to Ptolemy.

ARBANIUM, a town placed by Stephan. Byz. in the neighbourhood of the Euxine sea.

ARBASERA, a town of Asia Minor, towards Galatia.

ARBATTIS, a town of Palestine in Galilee, taken and destroyed by Simon Maccabaeus. 1 Mac. v. 23.

ARBECA, in *Geography*, a town and castle of Spain in Catalonia, 10 miles east of Lerida.

ARBEGEN, a town of Transylvania, seven miles north of Stoltzenburg.

ARBELA, now called *Erbil* or *Irbil*, in *Ancient Geography*, a city of Assyria, in the province of Adiabene, and district of Arbelis, famous for the complete victory gained by Alexander the Great in the battle with Darius Codomannus, which was fought at the village of Gaugamela in its neighbourhood. Ptolemy places it on the river Capros; but Strabo on an equal distance from that river and the Lycus, near mount Nicatorius, so called by Alexander, from the above-mentioned victory. Diodorus Siculus and Curtius call it a village; but Arrian (l. vi. p. 391.) dignifies it with the name of a city; and from this the adjacent country was denominated Arbelis and Arbelitis. This battle was fought in the month of October, in the second year of the 112th Olympiad, or 331 years before Christ. According to Arrian (*De Exped. Alex.* l. iii. p. 115. ed. Gronov.), the army of Darius consisted of a million of foot, and 40,000 horse; but according to Diodorus (l. xvii. vol. ii. p. 202. ed. Wesseling.) of 200,000 horse, and 800,000 foot. Plutarch (*Oper. t. i. p. 682.*) says that the whole army consisted of a million; and Justin (l. xi. c. 13.) states the number at half that of Diodorus. The Macedonian army consisted of 40,000 foot, and 7000 horse. Arrian (*ubi supra*) and Curtius (l. iv. c. 25, &c.) have given a particular description of this famous battle. We shall here subjoin the account of it given by Dr. Gillies, in his "History of Greece." Alexander, when apprized of the great strength of the enemy, expressed neither surprise nor apprehension. When advised by Parmenio to attack Darius's camp in the night, he replied, that it did not become Alexander to steal a victory, and therefore he was resolved to fight and conquer in broad day-light. Darius, he also said, by bringing all his forces into one place, had freed him from the trouble of thinking how he might pursue them into different countries. "Having commanded a halt (says Dr. Gillies), he encamped four days, to give his men rest and refreshment. His camp being fortified by a good intrenchment, he left in it the sick and infirm, together with all the baggage; and, on the evening of the fourth day, prepared to march against the enemy with the effective part of his army, which was said to consist of 40,000 infantry and 7000 horse, unincumbered with any thing but their provisions and armour. The march was undertaken at the second watch of the night, that the Macedonians, by joining battle in the morning, might enjoy the important advantage of having an entire day before them to reap the full fruits of their expected victory. About half way between the hostile camps, some eminences intercepted the view of either army. Having ascended the rising ground, Alexander first beheld the Barbarians drawn up in battle array, and perhaps more skilfully marshalled than he had reason to apprehend. Their appearance, at least, immediately determined him to change his first resolution. He again commanded a halt, summoned a council of war; and different measures being proposed, acceded to the single opinion of Parmenio, who advised that the foot should remain stationary until a detachment of horse had explored the field of battle, and carefully examined the disposition of the enemy. Alexander, whose conduct was equalled by his courage, and both surpassed by his

his activity, performed these important duties in person at the head of his light horse and royal cohort. Having returned with unexampled celerity, he again assembled his captains, and encouraged them by a short speech. Their ardour corresponded with his own; and the soldiers, confident of victory, were commanded to take rest and refreshment.

“Meanwhile Darius, perceiving the enemy’s approach, kept his men prepared for action. Notwithstanding the great length of the plain, he was obliged to contract his front, and form in two lines, each of which was extremely deep. According to the Persian custom, the king occupied the centre of the first line, surrounded by the princes of the blood and the great officers of his court, and defended by his horse and foot guards, amounting to 15,000 chosen men. These splendid troops, who seemed fitter for parade than battle, were flanked on either side by the Greek mercenaries and other warlike battalions, carefully selected from the whole army. The right wing consisted of the Medes, Parthians, Hyrcanians, and Sææ; the left was chiefly occupied by the Bactrians, Persians, and Cardusians. The various nations composing this immense host were differently armed, with swords, spears, clubs, and hatchets; while the horse and foot of each division were promiscuously blended, rather from the result of accident than by the direction of design. The armed chariots fronted the first line, whose centre was farther defended by the elephants. Chosen squadrons of Scythian, Bactrian, and Cappadocian cavalry advanced before either wing, prepared to bring on the action, or, after it began, to attack the enemy in flank and rear. The unexpected approach of Alexander within sight of his tents prevented Darius from fortifying the wide extent of his camp; and, as he dreaded a nocturnal assault from enemies who often veiled their designs in darkness, he commanded his men to remain all night under arms. This unusual measure, the gloomy silence, the long and anxious expectation, together with the fatigue of a restless night, discouraged the whole army, but inspired double terror into those who had witnessed the miserable disasters on the banks of the Granicus and the Issus.

“At day-break, Alexander disposed his troops in a manner suggested by the superior numbers and deep order of the enemy. His main body consisted in two heavy-armed phalanxes, each amounting to above 16,000 men. Of these the greater part formed into one line; behind which he placed the heavy-armed men, reinforced by his targeteers, with orders that when the out-spreading wings of the enemy prepared to attack the flanks and rear of his first line, the second should immediately wheel to receive them. The cavalry and light infantry were so disposed on the wings, that while one part resisted the shock of the Persians in front, another, by only facing to the right or left, might take them in flank. Skilful archers and darters were poited at proper intervals, as affording the best defence against the armed chariots, which (as Alexander well knew) must immediately become useless whenever their conductors or horses were wounded.

“Having thus arranged the several parts, Alexander with equal judgment led the whole in an oblique direction towards the enemy’s left; a manœuvre which enabled the Macedonians to avoid contending at once with superior numbers. When his advanced battalions, notwithstanding their nearness to the enemy, still stretched towards the right, Darius also extended his left, till, fearing that by continuing this movement his men should be drawn gradually off the plain, he commanded the Scythian squadrons to advance, and prevent the farther extension of the hostile line. Alexander immediately detached a body of horse to

oppose them. An equestrian combat ensued, in which both parties were reinforced, and the barbarians finally repelled. The armed chariots then issued forth with impetuous violence; but their appearance only was formidable; for the precautions taken by Alexander rendered their assault harmless. Darius next moved his main body, but with so little order, that the horse, mixed with the infantry, advanced, and left a vacancy in the line, which his generals wanted time or vigilance to supply. Alexander seized the decisive moment, and penetrated into the void with a wedge of squadrons. He was followed by the nearest sections of the phalanx, who rushed forward with loud shouts, as if they had already pursued the enemy. In this part of the field, the victory was not long doubtful: after a feeble resistance, the barbarians gave way; and the pusillanimous Darius was foremost in the flight.

“The battle, however, was not yet decided. The more remote divisions of the phalanx, upon receiving intelligence that the left wing, commanded by Parmenio, was in danger, had not immediately followed Alexander. A vacant space was thus left in the Macedonian line, through which some squadrons of Persian and Indian horse penetrated with celerity, and advanced to the hostile camp. It was then that Alexander derived signal and well-earned advantages from his judicious order of battle. The heavy-armed troops and targeteers, which he had skilfully posted behind the phalanx, speedily faced about, advanced with a rapid step, and attacked the barbarian cavalry, already entangled among the baggage. The enemy, thus surprised, were destroyed or put to flight. Meanwhile, the danger of his left wing recalled Alexander from the pursuit of Darius. In advancing against the enemy’s right, he was met by the Parthian, Indian, and Persian horse, who maintained a sharp conflict. Sixty of the *Companions* fell; Hephæstion, Cœnus, and Menidas were wounded. Having at length dissipated this cloud of cavalry, Alexander prepared to attack the foot in that wing. But the business was already effected, chiefly by the Thessalian horse; and nothing remained to be done, but to pursue the fugitives, and to render the victory as decisive as possible.

“According to the least extravagant accounts, with the loss of 500 men he destroyed 40,000 of the barbarians, who never thenceforth assembled in sufficient numbers to dispute his dominion in the East. The invaluable provinces of Babylonia, Susiana, and Persis, with their respective capitals of Babylon, Susa, and Persepolis, formed the prize of his skill and valour. The gold and silver found in those cities amounted to thirty millions sterling; the jewels and other precious spoil, belonging to Darius, sufficed, according to Plutarch, to load 20,000 mules and 5000 camels.”

ARBELA, a town of Sicily mentioned by Steph. Byz. and also by Suidas.

ARBELA, a village of Palestine on the other side of Jordan, dependent upon Pella, according to Eusebius.—Also a place of Galilee, in the vicinity of Sephoris, according to Josephus, Antiq. 1. 12.—Also, a village of Upper Galilee, near which were caverns, where thieves retired for concealment.

ARBENGIAN, in *Geography*, a town of Tartary, in the country of Zagatai, and territory of Samarcand.

ARBERG, a town of Switzerland, in the canton of Berne, situate on the river Aar, which almost encompasses it. N. lat. 47°. E. long. 17° 15’.

ARBEROUE, the name of one of the seven districts that compose lower Navarre, containing seven parishes.

ARBESPACH, a town of Germany, in the archduchy of Austria, six miles south-west of Zwettl.

ARBESTAAL, a town of Germany, in the archduchy of Aultria, five miles north of Brugg.

ARBI, a small country of South America, near the Andes, between Popayan and New Granada.

ARBIA, a small river of Italy, which rises in the territory of Florence, passes through that of Sienne, and discharges itself into the Ombrina.

ARBICA, a town of Spain, in Navarre, ten leagues W. N. W. of Pampeluna.

ARBII, in *Ancient Geography*, a people of Asia, in Gedrosia, mentioned by Pliny (H. N. l. vi. c. 23.), being the same that are placed by Strabo near the mouth of the Indus.

ARBIS, a river of Asia, which ran, according to Pliny, between the Orite and Indians, and after watering a town of the same name, fell at a small distance from it into the Indian Ocean.—Also, the name of a town of Gedrosia, belonging to the Arbi, and situate on a river of the same name.

ARBIS, in *Geography*, a town of France, in the department of the Gironde, and chief place of a canton, in the district of Cadillac, seventeen miles south-east of Bourdeaux.

ARBITER, in the *Civil Law*, a judge nominated by the magistrate, or chosen voluntarily by two contending parties, on whom they confer a power, by compromise, of deciding their differences according to law.

The Romans sometimes submitted to a single arbiter; but ordinarily they chose several, and those always of an uneven number.

In matters wherein the public was concerned, as crimes, marriages, affairs of state, &c. it was not allowed to have recourse to arbiters: nor was it permitted to appeal from an arbitral sentence; the effect of an appeal being to suspend the authority of a jurisdiction, not of a compact.

The arbiter, among the Romans, judged in those causes which were called “*bonæ fidei*,” and arbitrary, and was not restricted by any law or form; hence he was called “*honorarius*.” A person chosen by two parties by compromise to determine a difference, without the appointment of the prætor, was also called arbiter, but more properly “*compromissarius*.”

Among the moderns, there are properly divers kinds of arbiters; some obliged to decide by the rigour of the law; and others are authorized by the contending parties to relax, or give way to natural equity: these are properly called ARBITRATORS.

The ancient Romans, at their feasts, appointed a person to preside, by throwing the dice, whom they called “*arbiter bibendi*,” and who directed every thing at his pleasure. Vid. Hor. Od. l. 4. 18. II. 7. 25.

ARBITRARY, in a general sense, that which is not defined or limited by any certain express law or constitution, but is left solely to the judgment and discretion of another. Thus arbitrary punishments denote such as are left by the statute to the discretion of the judges. Arbitrary fines or mulcts are usually called *amercements*.

The word is formed from *arbitrium*, will; whence also *arbiter*, *arbitrator*.

ARBITRARY power. See DESPOTISM, MONARCHY, &c.

ARBITRATION, or ARBITRAGE, the referring of a cause or dispute concerning any personal chattels or personal wrong, to the decision of two or more indifferent persons, under the quality and denomination of arbiters or arbitrators.

If in deciding the controversy, these do not agree, it is usual to add that another person be called in as umpire

(*imperator*, or *impar*), to whose lot the matter is then referred: or frequently there is only one arbitrator originally appointed. This decision, in an arbitration, is called an *award*. Thus the question is actually determined, and the right transferred or settled, as it could have been by the agreement of the parties, or the judgment of a court of justice. But the right of real property cannot pass by a mere award: yet, doubtless, an arbitrator may now award a conveyance or a release of land; and it will be a breach of the arbitration bond to refuse compliance. For, though originally the submission to arbitration used to be by word, or by deed, yet both of these being revocable in their nature, it is now become the practice to enter into mutual bonds, with condition to stand to the award or arbitration of the arbitrators or umpire therein named. And experience having shown the great use of these peaceable and domestic tribunals, especially in settling matters of account and other mercantile transactions, which are difficult and almost impossible to be adjusted on a trial at law; the legislature has now established the use of them, as well in controversies where causes are depending, as in those where no action is brought, enacting by statute 9 & 10 W. III. c. 15., that all merchants and others, who desire to end any controversy, suit, or quarrel, for which there is no other remedy but by personal action or suit in equity, may agree, that their submission of the suit to arbitration or umpirage shall be made a rule of any of the king's courts of record, and may insert such agreement in their submission, or promise, or condition of the arbitration bond; which agreement being proved upon oath by one of the witnesses thereto, the court shall make a rule that such submission and award shall be conclusive: and, after such rule made, the parties disobeying the award shall be liable to be punished, as for contempt of the court; unless such award shall be set aside for corruption or other misbehaviour in the arbitrators or umpire, proved on oath to the court, within one term after the award is made. And, in consequence of this statute, it is now become a considerable part of the business of the superior courts, to set aside such awards when partially or illegally made; or to enforce their execution when legal, by the same process of contempt as is awarded for disobedience to those rules and orders which are issued by the courts themselves. Blackl. Comm. b. iii. vol. iii. p. 16.

The power of arbitrators is to be regulated by the compromise between the parties, as to what concerns the differences they are to determine; and whatever they decree beyond that is of no effect.

Among the Athenians, any one who submitted his cause to arbitration, was to abide by its sentence. Arbitrators were to swear before verdict was given. If the plaintiff did not appear before sun set, he might be fined; and appeal might be made from arbitrators chosen by lot to other courts of justice. The office of arbitrators was annual, and if they were found guilty of corruption, they were punished with *αἴμα*, infamy.

ARBITRATOR, an extraordinary judge or commissioner, in one or more causes between party and party, chosen by their mutual consent.

The civilians make a difference between arbiter and arbitrator: though both ground their power on the compromise of the parties, yet their liberty is diverse; for an arbiter is tied to proceed and judge according to the forms of law; whereas an arbitrator is permitted wholly to use his own discretion, without solemnity of process, or course of judgment, to hear and accommodate the controversy committed to him; so it be *justa arbitrium boni viri*. See EPITROPUS.

ARBITRIO, in *Musie*, is equivalent to *ad libitum*, *al suo arbitrio*, at your pleasure, *al suo commodo*, at your convenience. In lessons and solos, and in the solo parts of concertos, where all the other parts wait at a pause or close on the pleasure of the principal performer, these notices are given. See *AD libitum*.

ARBOGA, or **ARBOGEN**, in *Geography*, a town of Sweden, in the province of Westmanland, situate on the river Stora. Within a quarter of a mile is the canal of Arboga, begun in the reign of Christina, widened and deepened by Charles XI. and finished under the reign of his son Charles XII. which joins the lake of Hielmars with that of Mælars. In this place a synod was held in 1297, under Nicholas, archbishop of Upland.

ARBOIS, a town of France, in the department of Jura, and principal town of the district of Poligny, celebrated for the excellent wine made in its environs. The place contains 6414, and the canton 12,888 inhabitants: the territory includes 150 kilometres and 14 communes. N. lat. 46° 55', E. long. 5° 40'.

ARBON, a town of Switzerland, in the Turgov, situate on the south side of the lake of Constance. The inhabitants are chiefly protestants. N. lat. 47° 38', E. long. 9° 30'.

ARBOR, in *Botany*, *Gardening*, &c. signifies a tree or perennial plant that has the property of rising with a simple woody and durable stem or trunk to a considerable height and thickness. These last circumstances, in some measure, form a distinction between trees and shrubs, which last are supposed to be of a smaller growth, and to have generally several stems proceeding from the root, or the same stem dividing near to it, into different smaller ones; and also from herbaceous plants, whose stems are soft, often succulent, and mostly rise in spring, and perish in autumn. This is not, however, general.

It has, indeed, been observed by Linnæus, that this distinction between trees and shrubs is by no means universally obvious. Nature, says he, has put no limits betwixt trees and shrubs; for to say that trees are taller than shrubs is, in fact, saying nothing; unless a certain immutable standard were previously established. Besides, every thing respecting dimensions is so variable in its nature, and depends so much upon the difference of climate, soil, and culture, that no certain standard or boundary can, with propriety, be fixed between them, since the same plant, in different countries, often assumes very different growths: thus the *arbutus* and *laurel*, in warm climates, grow to large trees; while in this country they are generally considered as shrubs. See **FRUTEX**.

ARBOR Camphorifera. See **LAURUS**.

ARBOR crepitans. See **HURA**.

ARBOR Jude. See **CERCIS**.

ARBOR, in *Chemistry*.—**ARBOR philosophica** is a name common to several metalline crystallizations; thus called from their ramifications resembling a tree.

ARBOR Dianæ.—**Arbor mineralis philosophica**.—**Arbre de Diane**.—**Dianenbaum**, **Silberbaum**. It is the property of silver, lead, and tin, when combined with an acid into a readily soluble salt, to be easily separable in the reguline state from such acid by the superior affinity of zinc, mercury, &c.; and while precipitating, to arrange themselves in a branching filamentous mass. Hence they were called by the ancient chemists *arbores*, trees. Silver being denoted in alchemical language by the moon, Luna, or Diana, the term **Arbor Dianæ** means therefore metallic silver brought by art into an arborescent form. As this is a very beautiful preparation, and susceptible of great varieties of figure, a mul-

titude of receipts are to be found in different writers, all of which, however, may be reduced to two. The first consists in the decomposition of a solution of pure *nitrat of silver* by mercury: the second varies from the first in the silver being amalgamated with mercury previously to solution in nitrous acid. The latter of these methods is the most ancient, being described by Homberg (Mem. de l'Acad. de Paris, 1692) in the following terms: "Make an amalgam without heat of four drams of silver filings, or still better of silver leaf, and of two drams of mercury (see **MERCURY**, *Alloys of*); dissolve this amalgam in four ounces or a sufficient quantity of nitrous acid, pure and moderately strong; dilute this solution with about a pint and a half of distilled water, shake the mixture, and preserve it in a bottle with a glass stopper. When this preparation is to be used, an ounce of it is to be put into a vial together with about the size of a pea of an amalgam of gold or silver about as soft as butter, and the whole is to remain at rest: soon afterwards small filaments will be seen issuing from the amalgam, which quickly increase, branch out on both sides, and take the form of shrubs."

The simpler method appears to have been first mentioned by Lemery (Cours de Chymie, 1726). He advises to dissolve an ounce of fine silver in a sufficient quantity of pure nitrous acid, and afterwards to mix the solution in a flask with about twenty ounces of distilled water: add to this mixture two ounces of mercury, and let the whole remain at rest. In about forty days a kind of silver tree will be formed upon the mercury with branches resembling vegetable ramifications.

The two essential conditions for the complete success of this experiment are, first, that the nitrat of silver should be free from any excess of acid; and secondly, that the silver should have a firm base to adhere to as soon as it begins to be precipitated. To ensure the first, it is advisable so to proportion the acid to the silver, that a very minute portion be left undissolved, and then by concentrating the solution to dispose it to crystallize. The crystals thus obtained, being dried on blotting paper, should be dissolved in distilled water, the proportions of which may be varied at pleasure, provided the solution is not, on the one hand, so strong as to deposit crystals by standing, and, on the other hand, so dilute as to require many days before the experiment is completed: from five to twelve times as much water as nitrat of silver is upon the whole, the most convenient proportion. The fibres of the precipitate will be crowded and short, when the process is brought about rapidly; but long and branched, if a greater time is allowed.

The mercury that is added to effect the precipitation should be mixed with silver so as to destroy its fluidity; for when pure mercury is poured in, the first portions of silver that are deposited unite with and dissolve in the mercury till it is thus brought to a proper consistence.

The tree or arborescent precipitate thus obtained is an amalgam of silver, the proportions of which appear subject to some variations. For the theory of this and similar phenomena, see **PRECIPITATION**, and **METALLIC PRECIPITATES**. Macquer's *Chémisches Wörterbuch*, art. **Dianenbaum**. *Encyclopedic Method*, art. **Arbre de Diane**, &c.

ARBOR plumbi, is the result of a beautiful vegetation of lead. For producing it, two drams of acetite of lead are dissolved in six ounces of distilled water; the filtered solution is poured into a cylindrical glass, and a thin roll of zinc being hung in it, the whole is left standing at rest. The lead precipitates, adhering to the zinc in metallic leaves, in the form of a tree. Gren's *Chem.* vol. ii. p. 382.

ARBOR Genealogica, tree of consanguinity, signifies a lineage

neage drawn out under the figure or resemblance of root, stock, branches, &c.

ARBOR Porphyriana, among the schoolmen, denotes a scale of beings; or a figure consisting of three rows or columns of words; the middlemost whereof contains the series of genera and species, and bears some analogy to the trunk; and the extremes, containing the differences, to the branches of a tree.

	SUBSTANCE	
Thinking		Extended
	BODY	
Inanimate		Animate
	ANIMAL	
Irrational		Rational
	MAN	
This		That
	PLATO	

The *arbor porphyriana* is otherwise called *scala predicamentalis*.

ARBOR Vita, in *Botany*. See *THUYA*.

ARBOR is also figuratively used in *Mechanics*, for the principal part of a machine, which serves to sustain the rest.—It is also used for a spindle, or axis, whereon a machine turns; thus, *arbor* of a crane, a mill, windmill, &c.

ARBOREA, in *Entomology*, a species of *PODURA* described by Scopoli and others. It inhabits trees in Europe; is oblong and black; legs and fork white. Linnæus. Gmelin.

ARBOREA, in *Ornithology*, a species of *ANAS*, that inhabits Jamaica, and is called by Ray, Sloane, and Edwards, the black-billed whistling duck. It is brown; the head slightly crested; and the abdomen spotted with black and white. Gmelin. This is also *Anas ffulularis Jamaicensis* of Brisson; *Canard siffleur de la Jamaïque* of Buffon Pl. Enl.; and *Siffleur à bec noir*. Nat. Hist. Ois. of the same author.

The most remarkable circumstances of this duck are, that it builds its nest in trees, and makes a whistling noise. It is supposed to frequent Carolina in winter, at least one of the same name is said to be found on those coasts at that time by Lawson and Catesby. A bird of this kind is in the British Museum, and is called the Opano Duck, which is the name it bears at Guiana.

In size it is less than the Mallard, and stands high upon its legs; the neck is also long and slender. The bill is black; irides hazel; crown of the head dusky, somewhat crested behind, and of a rufous brown; hind part of the neck brown; back and scapulars the same, but the feathers margined with rufous; rump and upper tail-coverts darker; sides of the head and throat white; fore-part of the neck white spotted with black; the breast pale rufous spotted also with black; belly, thighs, and vent much like the forepart of the neck, but the spots are smaller and most numerous on the sides; the wing-coverts rufous spotted with black; quills and tail dusky; legs lead-colour; claws black.

ARBOREA, a species of the *ALAUDA* genus. See *ALAUDA*.

ARBOREA, in *Zoology*, a species of *RANA*, called the tree frog, and thus defined by Gmelin: body granulated beneath, and the feet cleft. Linnæus describes it as having the body smooth; the underpart beset with contiguous tuberculations; the feet cleft, and the toes terminated in orbicular dilated tips. Gmelin enumerates eight supposed varieties of this species, which are as follows:

β. *HYLA fusca* of Laurent. Amph.—*Rana pedibus fissis, palmis tetradactylis, plantis pentadactylis; geniculis subtus*

tuberosis. Amoen. Acad. I. p. 135. (Frog with cleft feet, four toes on the anterior, and five on the posterior feet; and the knees warted beneath.)

γ. *HYLA viridis*, lineæ flava utrinque recta. Laurent. and Catesby. (Green, with a straight yellow line on each side.)

δ. *HYLA ranaformis*. Laurent. Amph. p. 33. n. 25.

ε. *RANA americana rubra*. Seb. Mus. 2. t. 70. f. 4.

ζ. *HYLA viridis fusca*. Laurent. Amph. p. 34. n. 29.

η. *HYLA tiliatrix*. Laurent. Amph. p. 34. n. 30.

θ. *HYLA rubra*. Laurent. Amph. p. 35. n. 31.

ι. *HYLA sceleron*. Laurent. Amph. p. 35. n. 33.—*Rana brassiliensis gracilis* of Seba.

Dr. Shaw gives a new specific character to this creature; *RANA arborea; viridis, subtus albida, lineæ laterali nigricante, abdomine granulato, pedibus fissis*. (Green frog, whitish beneath, with blackish lateral line, granulated abdomen, and unwebbed feet.)

“In the beauty of its colours, as well as in the elegance of its form, and the agility of its movements, the tree frog exceeds every other European species. It is a native of France, Germany, Italy, and many other European regions, but is not found in the British islands. Its principal residence, during the summer months, is on the upper parts of trees, where it wanders among the foliage in quest of insects, which it catches with extreme celerity, stealing softly towards its prey in the manner of a cat towards a mouse, and when at a proper distance seizing it with a sudden spring, frequently of more than a foot in height. It often suspends itself by its feet or abdomen to the under parts of the leaves, thus continuing concealed beneath their shade. Its size is smaller than any other European frog, except the fire frog. Its colour, on the upper parts, is green, more or less bright in different individuals; the abdomen is whitish, and marked by numerous granules; the under surface of the limbs is reddish; and the body is marked on each side by a longitudinal blackish or violet-coloured streak, separating the green of the under parts from the white colour of the lower; the inferior edge of this dark lateral stripe is tinged with yellow. The body is smooth above, and moderately short or plump; the hind legs are very long and slender; the fore feet have four, and the hind feet five toes, all which terminate in rounded, flat, and dilated tips, the under surface of which being soft and glutinous, enables the animal to hang with perfect security from the leaves of trees, &c. The skin of the abdomen is also admirably calculated by nature for this peculiar power of adhesion, being covered with small glandular granules in such a manner as to fasten closely even to the most polished surface; and the animal can adhere at pleasure to that of glass, in whatever position or inclination it be placed, by merely pressing itself against it.” Dr. Shaw, Zool. &c.

It is further remarked by this and other authors, that though the tree frog inhabits the woods during the summer months, on the approach of winter it retires to the water, where it conceals itself in the soft mud or banks, and remains in a state of torpidity till the spring; when it again emerges; and, like the rest of this genus, deposits its spawn in the water at that season. The male, at this period, inflates its orbicular gular pouch in a surprising manner, and emits a loud and sharp croak, which may be heard at a vast distance; they make the same noise on the approach of rain while they live among the trees, and may be considered, in some measure, as a kind of living barometers, more especially the males, which, if kept in glasses and supplied with proper food, will afford an infallible preface of the changes of weather. In the German Ephemerides Naturæ Curioforum

Curioform, we meet with an account of one which was kept in this manner for the space of seven years.

ARBOREOUS, ARBOREUS, is applied by some naturalists to such excrescences, funguses, mosses, and other parasites, as grow on trees; in contradistinction to such as grow on the ground; such are the *lichenoides* and *agarics*.

ARBORESCENS, in *Natural History*, a species of DORIS (*Vermes Mollusca*), that inhabits the Norway seas. The feelers are ramose; back gibbous, and beset with protuberances. Müll. Zool. Gmelin.

ARBORESCENT, a term used to denote any thing that shoots or grows up in form of a tree, or which gradually becomes firm and woody; and *arbores* is that which resembles a tree, having a permanent woody stem.

Botanists speak of arborescent shrubs and plants, &c. Mineralists treat of arborescent metals, arborescent silver, arborescent iron, arborescent stones, &c. The fungus marinus is ranked by some in the class of arborescent sponges; the chemists produce arborescent crystallizations, which they call philosophical trees. Phil. Trans. N° 198, N° 111, and N° 129.

Zoologists give instances of arborescent animals, particularly fishes.

The *arborescent star-fish, stella arborescens*, a species of ASTERIAS, is one of the curiosities of nature found in several cabinets of natural rarities.

ARBORETI, in *Entomology*, a species of CURCULIO, that inhabits Cayenne. It is of a cinereous colour; thighs of the anterior legs toothed; wing-cases striated with punctures. Fabr. Gmelin.

ARBOREUM, in *Natural History*, a species of ALCYONITUM (*Vermes Zoophyta*), found in the Norway and Indian seas. The stem is arborescent, with obtuse branches and papillary pores. This is LITHOXYLON *Norvegicum* of Müll. Tassin.; ALCYONITUM *ramosum*, poris papillaribus in tubera lateralia terminaliaque congestis of Pallas; ARBUSCULA *marina coralloides* of Clusius; *Planta marina coralloides rubra*, J. Bauh.; and *Accarbaar gabba-garba f. Accarbaar boazagu, Amboynensibus Hualupia*, Rumphius.

ARBOREUS, in *Entomology*, a species of CIMEX described by Degeer. Above it is brown-green, beneath yellowish; a transverse yellow line across the thorax; wing-cases bordered with red; tail of the same colour, and bidentated. This is a small insect, being only five lines in length, and lives in trees. Gmelin.

ARBORIBONZES, in *Modern History*, priests of Japan, who live an erratic life, and subsist on alms. They dwell in caverns, and cover their heads with bonnets made of the bark of trees.

ARBORIS PECTEN. See PECTEN.

ARBORIST, ARBORISTA, a person skilled in trees, their forms, natures, &c.

Arborist is an appellation of less extent than botanist.

ARBOR SCIENTIÆ, a general distribution or scheme of science or knowledge.

ARBOUC, in *Geography*, a town of Arabia, 116 miles north-west of Mecca.

ARBOUCAVE, a town of France, in the department of Landes; four leagues south-east of St. Sever, and $4\frac{1}{2}$ E. N. E. of Orthez.

ARBOURS, in *Gardening*, are small compartments formed with various sorts of trees and shrubs, in such order as to inclose a certain space, and make a kind of recess or shady retreat for the hot summer months. They were formerly held in much higher estimation than at present, and were commonly formed of ever-greens, as yews, planted very close, the sides trained erect six, eight, or ten feet high,

and the tops formed like vaults or trained archways, over arched frames or lattice-work of wood or iron; having arched openings or arcades formed on the sides, the whole being shorn or clipped annually to keep them in due order, which in many cases appeared very ornamental, according to the ancient style of gardening. They were also frequently formed of deciduous trees, particularly the elm, and sometimes with the horn-beam, beech, and lime, which were constantly shorn every summer. The forms of both the ever-green and deciduous kinds, were either square, hexagonal, octagonal, or round, and their dimensions generally from ten to fifteen feet in width and height; the tops were mostly made either pavilion, turret, or dome-shaped, and sometimes terminated by a globe, pyramid, or other figure, formed of the extreme branches.

The authors of the "Universal Gardener" observe, that covered arbours or bowers may be formed very quickly, even in one season, with several sorts of shrubby herbaceous climbing plants; some of which will advance fifteen or twenty feet in one summer. It is likewise added, that they should, if possible, be erected upon a somewhat rising ground, for the greater advantage of free air, and to enjoy the prospect of the garden and adjacent country.

They are also sometimes formed in the heads of single large trees, particularly elms, where the trunks have divided at the height of ten or twelve feet, into several lesser spreading stems, so as to admit of erecting a small platform between them, cutting down the large boughs, and training the pliable branches archways over lattice-work, till those on each side meet; then clipping the sides annually, the tops may either be cut, or permitted to grow up, or the whole suffered to advance in a natural growth. They may likewise be formed on the ground in this manner: plant some of the tallest-growing flowering shrubs round the inside, to form the dimensions of the arbour; then, on the outside of these, others of somewhat lesser growth; so continue three or four ranges, diminishing gradually in stature from the arbour outwardly, permitting the whole to take their natural growth; so that at a distance it may assume the appearance of one of the common shrubby clumps.

The bottoms of them when on the ground, should be well gravelled, and garden chairs placed in them during the summer.

ARBRE DE MER, in *Natural History*, a name given by one French author to the Linnæan GORGONIA FABELLUM. Vide Rochef. Antill. c. 19. act. 13. p. 234.

ARBE Coche, in *Geography*, an island in the north part of lake Michigan in Upper Canada. N. lat. $45^{\circ} 25'$. W. long. $85^{\circ} 18'$.

ARBRESLE, L', a town of France, in the department of the Rhone and Loire, and chief place of a canton in the district of Lyon; nine miles north-west of Lyons. The place contains 871 and the canton 11,597 inhabitants; the territory includes 170 kilometres, and 17 communes.

ARBROATH. See ABERBROTHICK.

ARBUCKLE, JAMES, M. A. in *Biography*, was born at Glasgow, in 1700, and educated in the university of that city, and afterwards kept an academy in the north of Ireland. His poems were published in one volume, 12mo.; but his translation of Virgil, which he undertook, was never finished. He was a person of fine taste, and much esteemed by the learned in general. He died in 1734. Biog. Diet.

ARBUSCULA is used by Bradley to denote a little, or dwarf-tree, above the rank of shrubs, but below that of trees, such e. gr. as the elder.

ARBUSCULA *marina coralloides alba*. Valent. Ind. 4.

t. 52. f. D. D. This is *MADREPORA muricata* of Gmelin.

ARBUSTIVA, in *Botany*, an order of plants in the *Fragmenta Methodi Naturalis* of Linnæus.

ARBUSTORUM, in *Conchology*, a species of *HELIX*; a land snail found in hedges and shrubberies in Europe. This shell may be better characterized in the words of Da Costa than Linnæus; for the latter neglects to include in its specific character the single spiral line which is invariably found upon this species. It is thus defined by Da Costa; shell somewhat umbilicated, spotted, with a single narrow spiral band along the middle of the wreaths of whorls.—*Testa umbilicata convexa acuminata; apertura suborbiculari bimarginata; anterius elongata.* Linn. F. Sv.—The shell is brown with yellow lines, or yellowish with brown lines, in little irregular dashes, and the spiral streak is darkest. Vide Donovan. Brit. Shells.

ARBUSTORUM, in *Entomology*, a species of *MUSCA*, (*Syrphus*, Fabr.) that inhabits Europe, and lives in trees. The thorax is grey; abdomen black, except the first joint and sides of the second, which are rufous. Linnæus. Gmelin.

ARBUSTUM implies a number or multitude of trees planted for the sake of the fruit.

The word was more peculiarly applied to a place planted with trees for fastening vines to, which are hence called by Columella, *arbutina*.

ARBUSTUM is sometimes also used to denote an orchard or field wherein trees are planted at such a distance, that there is room for ploughing and growing corn between them.

ARBUTELLA, in *Entomology*, a species of *PHALÆNA* (*Tinea* Linn.). The wings are rufous, with streaks of silver, the middle ones bifid. Fabricius.

ARBUTHNOT, ALEXANDER, in *Biography*, an eminent Scots divine, was the son of the baron of Arbuthnot, and born in the year 1538. Having studied the languages and philosophy in the university of Aberdeen, and civil law under Cujacius at Bourges in France, he took ecclesiastical orders, and became a zealous advocate and promoter of the reformation. In 1568, he assisted as a member of the general assembly at Edinburgh; and by this assembly he was entrusted with the charge of revising a book, intitled, “The Fall of the Roman Church,” which had given great offence, and which incurred the censure of the assembly, chiefly on account of an assertion contained in it, “that the king was the supreme head of the church.” On this occasion the assembly, in direct opposition to the principles of the reformation, to which they professed a zealous attachment, issued an order that no book should be published for the future, till it should be licensed by commissioners of their own appointment. In the following year, Mr. Arbuthnot was advanced to the office of principal of the king’s college at Aberdeen. In 1572, he was a member of the general assembly held at St. Andrews, which strenuously opposed a scheme of church government called “the book or policy,” and which was formed by some statesmen for the purpose of restoring the old titles in the church, and retaining among themselves all the temporalities annexed to them. In the general assemblies held at Edinburgh in 1573 and 1577, Mr. Arbuthnot was moderator; and he seems to have been constantly employed, on the part of the church of Scotland, for conducting the contest with the regency concerning the plan of ecclesiastical jurisdiction to be adopted in this church. By the course he pursued in this business, and also by his publication of Buchanan’s History of Scotland, he gave offence to James VI.; and a royal order was issued forbidding him to absent himself from his college at Aberdeen. The clergy, who were likely to be thus de-

prived of his important and useful services, remonstrated; but the king was inflexible, and the clergy submitted. By this persecution Arbuthnot’s health and spirits were affected; and in the next year, viz. 1583, he sunk into a decline, and died. Arbuthnot appears to have possessed a degree of good sense and moderation, which eminently qualified him for the conduct of public business. Possessed of a considerable share of learning, he patronized and promoted it, and contributed to revive in Scotland a taste for polite literature. The only literary work which he has left is a learned and elegant treatise in Latin, intitled, “*Orationes de origine et dignitate juris*,” printed at Edinburgh, in 1572, in 4to. Biog. Brit.

ARBUTHNOT, JOHN, M.D. not less celebrated for his wit than for his learning, was son of an episcopal clergyman in Scotland, and born at Arbuthnot, near Montrose, soon after the restoration. He received his education at the university at Aberdeen, where he took his degree of Doctor in Medicine. He then came to London, and taught mathematics, in which he was well skilled. In 1697, he published “An Examination of Dr. Woodward’s Account of the Deluge.” This first brought him into public notice, and the reputation thence acquired was increased by his “Treatise on the Usefulness of Mathematical Learning,” which soon followed. In 1704, he communicated a paper to the Royal Society, which is published in their Transactions for that year, “On the constant regularity observed in the births of both sexes.” Though there is a small disparity, the males exceeding the females by about one in twenty, yet as the males are engaged in occupations of greater hazard and danger, he supposes their number to be nearly equal, at an adult age. Whence he concluded, “that polygamy is contrary to the law of nature and justice, and to the propagation of the human race:” an argument affording a complete answer to the doctrine contained in the *Thelyphthora*, a publication by the late Mr. Madan. On the credit of this paper he was made fellow of the Royal Society, and obtained a more intimate connection with the principal literary characters in the country. Being soon after called to attend prince George of Denmark, who was taken ill at Esom, where the Doctor happened to be at the time, his success in restoring him to health brought him into favour with queen Anne; and in 1709, Dr. Hannes being indisposed, he was made her physician in ordinary, and admitted Fellow of the Royal College of Physicians. This would be attended of course with an increase of professional fame and employment; but it does not appear he was ever popular as a physician, or had much general practice, as on the death of queen Anne, in 1714, he found himself so much neglected, as to have leisure to go to Paris. On his return he thanks Mr. Pope for “taking notice of a poor old distressed courtier”; and tells him, “that his friends shall find the same welcome at Martin’s Office in Dover-street, they had met at his house in St. James’s, and that he can still afford to give them half a pint of claret.” His fondness for the conversation of Pope, Swift, Gay, and the other wits of the time, and their affectionate attachment to him, although contributing to his pleasure, as most congenial to his disposition, was probably the real cause of the little estimation he was in as a physician, except among his friends. For though Apollo is called the father of medicine as well as of verse, yet those who addict themselves to him in his latter capacity, rarely attain eminence in the first. This was afterwards exemplified in the fate of Armstrong and Akenfide, whose fame as physicians decreased in proportion to their increasing celebrity as poets.

Arbuthnot had been for some time engaged with Pope and

and Swift in writing the "Memoirs of Martinus Scriblerus," intended as a general satire on the abuses in human learning; but which was never completed. It was in allusion to this, that he called his house in Dover-street *Martin's Office* (see his letter to Pope in 1714), which shews also that he had no inconsiderable share in that exquisitely witty production. "The life of that solemn and absurd pedant, Dr. Scriblerus," Warton says (Introduction to the Memoirs), "of which Johnson speaks too contemptuously, is the only true and genuine imitation we have in our language of the ferious and pompous manner of Cervantes." Besides the large share Arbuthnot contributed to these memoirs, he is upon good authority supposed to have written "The history of John Bull," "A Treatise on the scolding of the Ancients," and "The Art of Political Lying." There is also a philosophical poem written by him, remarkable for its philosophical sentiment, in Dodsey's collection the title "Know thyself;" but his principal work is, "Tables of ancient Coins, Weights, and Measures," consisting of several dissertations on these subjects, which he collected together and published in 4to. in 1727; they are still held in esteem. In 1732, now in the decline of life, he published a treatise "On the Choice of Aliments;" and in the following year, "On the effect of Air on human Bodies;" both founded on the doctrine of Boerhaave, the prevailing system of the time. Among his satirical pieces should be mentioned his "Epitaph on Chartres," a noted usurer of the time. "Here continues to rot, &c." It is written with uncommon asperity, but not more than the subject demanded. In almost all his satirical poems there is a good-humoured vein of pleasantry, which confirms the character given of him by Swift to a lady who desired his opinion of him: "he has more wit than all our race, and his humanity is equal to his wit." Although they are strongly tinged with party, yet they are generally free from the gall and rancour that too often affects party writings. If indeed the "Memorandums of the six days preceding the death of a late Right Reverend," (meaning bishop Burnet) be his, he cannot, in this instance, be acquitted of suffering his personal dislike to get the better of his humanity. Dr. Arbuthnot was also skilled in music; and sir J. Hawkins mentions an anthem, and a burlesque song of his composition. (Hist. Mus. vol. v. p. 126.) The two volumes published in 12mo. in 1751, and entitled, "The Miscellaneous Works of the late Dr. Arbuthnot," contain some of his genuine productions; but as for the greatest part of them, his son George Arbuthnot, Esq., upon whose judgment and probity we may depend, says that they were not written by his father. He had been long afflicted with an asthma, to which a dropsy was now added. With a view of obtaining relief under this accumulated distress, for he did not, he told his friends, expect a cure, he removed to Hampstead, a village in the neighbourhood of London; but, finding little advantage from change of situation, he soon returned to his house in town, where he died Feb. 27, 1735; and supposing him to have been thirty, when his "Examination of Woodward's Account of the Deluge" appeared, in the 68th year of his age. Dr. Arbuthnot passed his days amidst the endearments of domestic life, and the affectionate esteem of his friends; and bore, with resignation and cheerfulness, the afflictions that fell to his lot. His literary associates, by whom he was beloved, have recorded their mutual friendship. Pope dedicated to him an epistle, called "A Prologue to the Satires;" and Swift feelingly laments, in one of his poems, that he is

"Far from his kind Arbuthnot's aid,
Who knows his art, but not his trade."

During his last illness, his serenity supported by habitual piety, never deserted him; and these qualities, with an ardent love of virtue and disdain of meannesses and vice, are beautifully displayed in his latest letters.

ARBUTI, in *Entomology*, a species of *PHALÆNA* (*Noctua* Linn.) found in England. The anterior wings are brown; posterior black, with a yellow band across. Fabr. *Donov. Brit. Inf.*

ARBUTUS, in *Botany*, *Strawberry-tree*. Linn. *gen.* 552. Schreb. 750. Gærtn. 59. Juss. 160. *Uva ursi*. Tournef. 370. Class. *decandria monogynia*. Nat. Order. *Bicornes. Erica*. Juss. *Gen. Char. Cal.* perianth five-parted, obtuse, very small, permanent. *Cor.* monopetalous, ovate, flatish at the base, diaphanous, with a quinquelid mouth; divisions obtuse, revolute, small. *Stam.* filaments ten, subulate-swelling, very slender at the base, affixed to the edge of the corolla, and half the length of it; anthers slightly bifid, nodding. *Pist.* germ subglobular, on a receptacle marked with ten dots; style cylindrical, the length of the corolla; stigma thickish, obtuse. *Per.* berry roundish, five-celled; seeds small, bony.

Ess. Gen. Char. Cal. five-parted. *Cor.* ovate, diaphanous at the base. *Capf.* five-celled.

Species, 1. *A. unedo*, common strawberry-tree; stem arboreous; leaves oblong-lanceolate; panicles smooth, nodding. This tree rises to the height of twenty or thirty feet and usually puts out branches very near the ground. It is in constant verdure; for, during the whole winter, it retains its leaves till pushed off by those which appear in the spring. In the months of October and November, the arbutus makes a very beautiful appearance, as, at this time, its fresh flowers and fruit of the preceding year are in their utmost perfection: hence it becomes a very desirable tenant in shrubberies, producing a pleasing contrast with most other plants, whose season of beauty is past. Mr. Aiton enumerates the following varieties, viz. α . Common white-flowered strawberry-tree. β . Red-flowered strawberry-tree. γ . Double-flowered strawberry-tree. Besides these varieties the nurserymen make others founded upon the shape and size of the leaves. It is a native of the south of Europe and of Asia. This arbutus, we are told, is also a native of some parts of Ireland, especially about the lake Killarney. 2. *A. laurifolia*, laurel-leaved strawberry-tree; stem arboreous; leaves oblong, acuminate, sharply serrate, smooth; racemes axillary, one-ranked, sessile, solitary. This is very like the common arbutus, but differs in its sharp cuspidate serratures, and its axillary, very simple racemes, shorter than the leaves, with the flowers all directed the same way. A native of North America. 3. *A. andrachne*, oriental strawberry-tree; stem arboreous, leaves ovate, entire, and serrate; panicles pubescent, erect. This also has some resemblance to the common arbutus, but the bark is not rough; some of the leaves are not serrate; the panicle is viscid. It grows to a middle-sized tree, with large smooth leaves. The flowers resemble those of the first species, but grow more thinly on the branches. The fruit is oval, and the seeds flat. It grows abundantly in the East, about Magnesia. Cultivated in 1724, by Dr. Sherard, at Eltham. 4. *A. ferruginea*, long-flowered strawberry-tree; stem arboreous; leaves oblong, obtuse, smooth, entire; racemes terminal. Branches singular, smooth; leaves alternate, petioled; racemes axillary, solitary, terminating the branches; flowers remote, nodding, longer than those of the other species. Found in America by Mutis. 5. *A. mucronata*, pointed-leaved strawberry-tree; stem shrubby; leaves alternate, ovate, serrate, pointed; peduncles axillary, one-flowered. This is a very stiff shrub.

Leaves

Leaves flat, stiff, cartilaginous at the edge, with four serratures on each side, on very short petioles; peduncles single, one-flowered. Found in Terra del Fuego, by Back. 6. *A. pumila*, dwarf Strawberry-tree; stems diffusid; leaves alternate, distich, oblong, entire; flowers lateral, solitary. A low shrub, with leaves like those of *Empetrum*, very smooth above, keeled beneath. It is a native of the same country as the fifth species. 7. *A. acadiensis*, Acadian Strawberry-tree; stems procumbent; leaves ovate, subserrate; flowers scattered; berries many-seeded. A small shrub with slender trailing branches. Flowers in thin loose bunches, axillary. It grows in Acadia and other northern parts of America, affecting swampy land. 8. *A. alpina*, black-berryed alpine arbutus; stems procumbent; leaves rugose, serrate. Branches trailing, flat on the ground; leaves alternate, oval, slightly serrate, reticulated underneath, wrinkled above; flowers in reflex clusters, white, each standing upon a single short peduncle; berries globular, on a small blood-red calyx, about the size and, when ripe, the colour of a sloe. It grows in alpine situations in the northern parts of Europe; and with us, on many of the highland mountains of Scotland. 9. *A. uva ursi*, bear-berry or trailing arbutus; stems procumbent; leaves entire. Branches trailing upon the ground to the extent of two or three feet round the root; leaves like those of the preceding species, firm and rigid like those of box; flowers of a flesh-colour, in small clusters at the ends of the branches, upon short red peduncles; berries, when ripe, are red, and of the size of a holly-berry. Common in many mountainous parts of the continent, and in the north of England and Scotland. Eng. Bot. 714. W. Med. Bot. 70. The leaves of this plant, about the middle of the last century, acquired great celebrity, not only for their efficacy in gravelly complaints, but in almost every other to which the urinary organs are liable, as ulcers of the kidneys and bladder, cystirrhœa, diabetes, &c. Among the numerous physicians who extolled the virtues of *uva ursi* in calculous complaints, De Haen may be considered the principal, and upon his authority it has been much used in this country; but in no instance does it appear to have produced that essential or permanent relief which is said to have been experienced by the German physicians. The leaves of this plant are powerfully astringent, and the advantage they have occasionally afforded in gravelly pains is now wholly ascribed to this quality. They are usually given in powder from a scruple to a dram, two or three times a day. This plant has been used in tanning leather, and also in dying an ash-colour. 10. *A. thymifolia*, thyme-leaved arbutus. Aiton. Hort. Kew; stems procumbent; leaves oval, acute, obscurely serrate, strigose underneath; flowers axillary, eight-flowered. This has the structure of the *vaccinium oxycoccus*, or cranberry, but all the parts are larger. The stem is imbricate, with bristle-shaped scales. A native of North America, in swamps; and extremely abundant there. The berries are brought to market at Philadelphia late in autumn, and used for tarts and other kinds of pastry. Considerable quantities of them are exported to Europe and the West Indies. They are much used by our pastry-cooks in London, though thought to be inferior to the cranberries of British growth. The plant was introduced by Dr. Fothergill in 1776.

ARBUTUS, trailing. See *EPIGÆA*.

ARBUTUS, in *Ornamental Gardening*, is applied to a genus of plants, the different species of which supply the finest evergreens for the principal situations in shrubberies and pleasure-grounds. They are such as may be set out in the open ground or in pots, but in whatever mode of planting it is designed to employ them, they should be

placed in so detached a manner, as to appear conspicuous at all times, and be permitted to take their own natural growth. The best season for transplanting all sorts of these shrubs is in the end of September or October and beginning of November, or in March and April.

The propagation of the different species is effected most commonly by seed; they will, however, sometimes grow by layers and cuttings, though in the latter mode rather more reluctantly; but the seed grows freely, from which the handsomest plants are frequently obtained. To continue the double-blossomed and scarlet kinds with certainty, it must be done either by layers, cuttings, grafting, or inarching, as these varieties will not retain their difference if continued from seed. From the seed of either the common oval or round-fruited kinds some of both sorts may be expected; but that of the former is rather to be preferred for sowing. The berries containing the seed may be had of the nurserymen and seedsmen in October, November, and Spring; and the seeds may either be sown in pots in autumn, and sheltered in a frame all winter, or be preserved in dry sand until March, and then sown in pots of light dry earth, and covered about a quarter of an inch deep; if the pots are then plunged into a hot-bed, it will so greatly forward the germination of the seed, that the plants will rise in a month or six weeks; when they must have plenty of air admitted to them, moderate waterings, and be inured by degrees to the full air in summer, at which season the pots should be plunged into the common ground until October, and then be set in a green-house or frame, to have shelter from the frost, till March, at which time it is advisable to transplant the seedlings singly into small pots, which if directly plunged into a slender hot-bed, shielded and shaded occasionally with mats, giving moderate waterings, they will quickly take root, when the pots may be plunged into a bed of common earth in a sheltered place, to remain two or three years, indulging the plants with larger pots and protection from severe frosts, till they are two or three feet high; then transplanting them with balls of earth about their roots into the full ground.

To propagate them by layers, the young shoots must be employed, otherwise they rarely emit roots in less than two years. Cuttings will send out roots by the aid of heat; in this view plant a number of the short young shoots in pots in spring and summer, and plunge them into a substantial hot-bed of tan and dung.

Inarching or grafting is performed in the usual way upon stocks of any of the varieties. See *INGRAFTING*, and *IN-ARCHING*.

ARC, ARCH, or ARK, formed of *arsus*, a bow. See *ARCH* and *ARK*.

ARC, Joan of, in *Biography*, called also "the Maid of Orleans;" an extraordinary heroine, was the daughter of a peasant of Domremi, near Vaucouleurs, on the borders of Lorrain, and born about the beginning of the 15th century. At the age of twenty-seven years, she was servant in a small inn, where she was accustomed to tend horses, and to perform other menial offices which commonly fall to the share of men-servants. About this time king Charles VII. was reduced to the most distressed condition by the English; but the siege of Orleans, which was bravely defended by the garrison and inhabitants, in some measure retarded their progress. Joan partook of the feelings of sympathy with the beleagued, that very generally prevailed, and determined to make some effort for relieving her sovereign in his present distresses. Whilst she was indulging these feelings, her enthusiasm led her to fancy that she saw visions and heard voices exhorting her to re-establish the throne of France, and to expel the foreign invaders.

vaders. Under the strong impulse of passion and of imagined inspiration, she obtained admission to Baudricourt, the governor of Vaucouleurs, who after being informed of her inspiration and intentions, treated her for some time with neglect; but, in consequence of her renewed and importunate solicitations, he gave orders that she should be conducted to the French court, which then resided at Chinon. It is pretended that Joan, immediately on her admission, knew the king, though she had never seen his face before, and though he purposely kept himself in the crowd of courtiers, and laid aside every thing in his apparel that might seem to distinguish him; and that she offered, in the name of the supreme creator, to raise the siege of Orleans, and to conduct him to Rheims to be there crowned and anointed. In order to remove his doubts of her mission, it is said, that she disclosed a secret, known only to himself, and which she must have derived from heavenly inspiration. She also demanded, as the instrument of her future victories, a particular sword which was kept in the church of St. Catharine of Fierbois, and which, though she had never seen it, she described by all its marks, and by the place in which it had long lain neglected. Her intrepid and determined mode of address excited attention, and gained confidence; and she was referred to matrons for proofs of her virginity, and to doctors of the church for evidence of her inspiration; their report being favourable, she was sent to the parliament at Poitiers; but they, considering her as insane, demanded from her a miracle. Her reply was, that she would soon exhibit one at Orleans. Accordingly she was at length completely armed, mounted on horseback in the presence of the multitude, and sent amidst the loudest acclamations to join the army destined to the relief of Orleans. Upon joining the army, consisting of 10,000 men, she ordered all the soldiers to confess themselves before they set out on the enterprise; she banished from the camp all women of bad fame; she displayed in her hands a consecrated banner, representing the Supreme Being as grasping the globe of earth, and surrounded with slower de lucas; and after thus communicating to the soldiers a great degree of that enthusiasm by which she herself was actuated, she advanced towards Orleans. The English besiegers were overawed by her orders and menaces, dictated in the name of the Almighty Creator; and she entered Orleans arrayed in her military garb, and displaying her consecrated standard, and was received by all the inhabitants as a celestial deliverer. The convoy approached without finding any resistance on the part of the besiegers; the waggons and troops passed without interruption between the redoubts of the English; and a dead silence and astonishment reigned among those troops, formerly so elated with victory, and so fierce for the combat. Joan, having thus far succeeded, ordered the garrison, at the same time encouraging them with the promise of heavenly assistance, first, to attack the English redoubts, in which measure they were successful; and then to fall upon the main body of the English in their entrenchments. In one of these latter attacks the French were repulsed, but the intrepid maid led them back to the charge and overpowered the English. In one of these attacks, she was wounded in the neck with an arrow; but retreating behind the assailants, she pulled it out with her own hands, had the wound quickly dressed, and hastened back to head the troops, and to plant her victorious banner on the ramparts of the enemy. In consequence of these successes, attended with a loss to the English of more than 6000 men, their courage and confidence gave way to amazement and despair. The French, in order to magnify the wonder of all these prosperous events, represent the maid, as not only

active in combat, but as performing the office of general; directing the troops, conducting the military operations, and swaying the deliberations in all the councils of war. But whatever the policy of the French court might suggest for maintaining this opinion among the multitude, it is much more probable that this unexperienced country girl was prompted in all her measures by the wiser commanders. Having raised the siege of Orleans, Joan now insisted that she should proceed to the accomplishment of the second part of her promise, which was that of crowning the king at Rheims. The king, accompanied by the victorious maid, marched at the head of 12,000 men towards Rheims; receiving the submission of the towns through which he passed; till at length arriving near Rheims, a deputation met him with the keys of the city, and he was admitted into it with transport. Here the ceremony of his coronation was performed with the holy oil of Clovis; and the maid stood by his side in complete armour, and displayed her sacred banner. When the ceremony was finished, she threw herself at the king's feet, embraced his knees, and with a flood of tears she congratulated him on this singular and marvellous event. Charles testified his gratitude by ennobling the family of Joan, giving it the name of *du Lys*, probably in allusion to the lilies of her banner, and assigning to her a suitable estate in land. Having accomplished both the objects which she had proposed, the maid of Orleans expressed her wish to return to her former condition, and to the occupation and course of life which became her sex; but the French general Dunois urged her continuance with the army, till the English should be completely expelled, and her predictions fully accomplished. Overpowered by his advice, she threw herself into the town of Compiègne, which was then besieged by the duke of Burgundy and the English; where, on a sally, having twice driven the enemy from their entrenchments, and finding their number increasing, she ordered a retreat; but was deserted by her friends, surrounded by the enemy, and taken prisoner by the Burgundians. Instead of treating Joan as a prisoner of war, with the courtesy and good usage, to which, as such, she was entitled, and which civilized nations practise towards enemies on occasions of this kind, she was purchased from the captors by the regent duke of Bedford, and a criminal prosecution was instituted against her on the charges of sorcery, impiety, idolatry, and magic. The clergy in his interest, and even the university of Paris, concurred in the accusation. An ecclesiastical commission was held at Rouen for her trial, and the maid, clothed in her former military apparel, but loaded with irons, was produced before this tribunal. Her trial lasted four months; and in the course of that time, many captious interrogatories were put to her, which she answered with firmness and dignity. Upon being asked, whether she would submit to the church the truth of her pretended visions, revelations, and intercourse with departed fairs? she replied, that she would submit them to God, the fountain of truth; and when she was charged with being a heretic, and denying the authority of the church, she appealed to the pope; but her appeal was rejected. When she was asked, why she put her trust in her standard, which had been consecrated by magical incantations? she answered, that she put her trust in the Supreme Being alone, whose image was impressed upon it. When it was demanded, why she carried in her hand that standard at the unction and coronation of Charles at Rheims? she replied, that the person who had shared the danger was entitled to share the glory. When she was accused of going to war, she scrupled not to declare, that her sole purpose was to defeat the English, and to expel them the kingdom. In the issue, however, she

was condemned for all the crimes of which she had been accused, aggravated by heresy, her revelations were declared to be inventions of the devil to delude the people; and she was sentenced to be delivered over to the secular arm. At length her resolution failed her; and through dread of the punishment to which she was sentenced, she declared that she was willing to recant; and, accordingly, she acknowledged the illusion of those revelations which the church had rejected; and she promised never more to maintain them. Upon this her sentence was mitigated; and she was condemned to perpetual imprisonment and to be fed during life on bread and water. But with this vengeance her enemies were not satisfied. In order to justify the severest measures against her, they insidiously placed in her apartment a suit of men's apparel; upon the sight of this garb, in which she had acquired so much renown, and assumed, as she once believed, by the appointment of heaven, her former ideas and passions revived, and she ventured in her solitude to put on the forbidden dress. In this apparel she was detected; it was regarded as a relapse into heresy; her recantation became void; her partial pardon was revoked; and she was to be burned in the market-place of Rouen. In June 1431, this barbarous sentence, much more ignominious to those who inflicted it than to her who was the object of it, was executed. "This admirable heroine, to whom the more generous superstition of the ancients would have erected altars, was, on pretence of heresy and magic, delivered over alive to the flames, and expiated, by that dreadful punishment, the signal services which she had rendered to her prince and to her native country." She met her fate with resolution, and the English themselves beheld the scene with tears. The king made no effort for avenging her cause; he merely procured a revision of the process, and a restoration of her memory ten years afterwards by the pope, in an act which styled her a "Martyr to her religion, her country, and her king." Her countrymen, more prompt in the tribute of their respect, propagated many tales relating to her execution; and some of them would not even allow her to be dead, but professed to expect her speedy return to conduct them again to victory. Of the character and conduct of this singular heroine, the most probable opinion is, that of her being an honest and deluded enthusiast, of whose fancies and passions the principal persons in the interest of Charles availed themselves for deluding and rousing into exertion the passions of the people, at a crisis of peculiar importance; in which the maid of Orleans was instrumental in giving a decisive turn to the contest between the French and English. The exploits of Joan of Arc have been celebrated both in prose and verse. Of the latter, the serious poem of Chapelain has been much less successful than the burlesque and licentious one of Voltaire; but the injury done by it to her memory has been in some degree repaired in England, by Southey's sublime and spirited poem of "Joan of Arc," which exhibits her in the brightest colours of virtue and heroism. Hume's Hist. of Engl. vol. iii. p. 141, &c. Nouv. Dict. Histor. art. *Jeanne*.

ARC, in *Geography*, a rapid river of Savoy, which rises in the northern part of mount Cenis, on the confines of Aosta, traverses the country of Marienne, and discharges itself into the Isere about four miles from Montmelian.

ARC, or *Ar*, a river of France, rises on the side of Porciouls, traverses the plain of Pourieres, where Marius defeated the Cimbric; passes by Aix, and loses itself in the lake of Martigues in the department of the mouths of the Rhone. Some have supposed this to be the *Canum flumen* of Ptolemy.

ARC en Barrois, a town of France, in the department of the Upper Marne, and chief place of a canton in the district of Chaumont, fourteen miles north-west of Langres. The

place contains 1768, and the canton 5,737 inhabitants: the territory includes 26,5 kilom. tres, and 9 communes.

ARC sur Tille, a town of France, in the department of the Côte d'Or, and chief place of a canton in the district of Dijon, on the river Tille, seven miles east-north-east of Dijon.

ARCA, in *Ancient Geography*, a town of Asia in Melitene on the well of the river Melas, and toward 37° 50' N. lat.

ARCA, a town of Phœnicia, at the foot of mount Libanus, between Antaradus and Tripoli, upon a small river about half a league from the sea coast. This was the city of the Arkites, who were the off-spring of Canaan, and said by some to have been founded by Arac, one of his sons. The inhabitants consecrated a temple in this place to Alexander the Great; and the city was denominated in honour of the Roman Emperors, and on account of its situation, "Cæsarea of Libanus," which name, as is seen in medals, it had borne about a century before the time of Alexander Severus. Shaw, in his travels (p. 270) speaks of the ruins of Arca, and says, that the situation of this ancient city was very delightful; having to the north the prospect of an extensive plain, diversified with a great variety of towns and villages, ponds and rivers; to the west the sun might be seen setting in the sea, and to the east rising over a long and distant chain of mountains. The citadel was erected upon the summit of an adjacent mount of a conical form, and mult in former times have been impregnable. Water was conveyed from the mountains to the city by an aqueduct, whose principal arch could not have been less than 100 feet in diameter.

ARCA, *Cape d'*, in *Geography*, lies on the coast of Africa, E. S. E. from the N. E. end of the island of Forteventura, the most southerly of the Canaries. It is about N. lat. 27° 15', and W. long. 12° 10'.

ARCA cordis is used by some *Anatomists*, to denote the PERICARDIUM.

ARCA, in *Conchology*, a genus of Bivalves, the animal of which is supposed to be a *Tethys*: the valves are equal; and the hinge beset with numerous sharp teeth, inserted between each other. The species are arranged in two sections, viz. the first has an entire margin, and in the other the margin is crenulated: each of these sections is subdivided into two parts, the first having the beaks recurved, and in the second they are inflected. The species enumerated by Gmelin are, tortuosa, noae, barbata, modiolus, pella, ovata, pellicuda, rostrata, striata, pulchella, afra, fossilis, cancellata, minuta, lactea, nodulosa, antiquata, fenilis, granosa, corbicula, decussata, aquilatera, pallens, cucullus, magellanica, reticulata, candida, indica, jamaicensis, campechiensis, lata, senegalensis, undata, pectuncululus, pectinata, glycymeris, pilosa, nummaria, nucleus, rhomboidea, marmorata, angulosa, scapha.

ARCADE, in *Architecture*, is used to denote any opening in the wall of a building formed by an arch.

ARCADES, or *Arcadia*, in *Ancient Geography*, a town on the west side of the island of Crete.

ARCADIA was one of the six districts into which the Peloponnesus was divided. Its name is said to have been derived from Arcas their fourth king; and it was anciently called Pelasgi, being inhabited by the Pelasgi, who boasted of their descent from Pelasgus. The Pelasgians were found in several parts of Greece; but their chief and primitive seat is generally supposed to have been Arcadia, whose inhabitants are universally allowed to be the most ancient people in Greece. Bounded on the north by Elis, on the east by Argolis, on the south by Laconia, and on the west by Messenia, Arcadia occupied a central situation, and was the only district of the Grecian peninsula which was not maritime

time. It consisted chiefly of mountainous regions, embosoming vallies which were often intersected by rivers and streams; but in certain places there descended from the mountains too abundant waters, which finding no outlet in the plain, suddenly precipitated themselves into profound gulphs, pursued their course for some distance through subterraneous caverns, and at length burst forth and again appeared above the earth. The soil, in most parts extremely fertile, was peculiarly favourable to pasturage, and nourished a race of herdsmen who, like other highlanders, invigorated by the exercise and efforts which the rugged scenes of their occupations often required for subsistence, and emboldened by the dangers of the chase, encountered not merely for amusement but for the security of their flocks, were strong and courageous; and their courage was increased by the confidence which the natural bulwarks of their country afforded against foreign invasion.

Arcadia was divided into upper and lower, the former on the north, and the latter on the south; and this which was the most mountainous of the two, was famous for its breed of horses and asses, whence the lait of these animals was denominated the Arcadian nightingale. Both these districts abounded with cities, of which the following have been recorded, viz. Megapolis, now Leontari, Mantinea, now Goriza, Palantium, Mœnalus, Tegea, Orchomenon, Clitorium, Nonacris, Psophis, now Dimazana, Heræa on the river Alpheus, Stymphalus on the lake and river of its name, in which there was a temple of Minerva, and Phialia or Phigala on the river Neda. The chief mountains were Cillene, Pholoe, now Xiria, Stymphalus, now Poglii, Parthenus, and Lycæus, called also Olympus, by Pausanias Ceraufus, and by the present inhabitants Mitena.

At first the Arcadians were a savage people, living in the woods and fields, and feeding promiscuously on the products of the ground. At last they were taught by Pelægus, the founder of their monarchy, to build huts, to live sociably, to exchange their common food for nuts, acorns, or beech-mast, and to clothe themselves with the skins of wild beasts. They began afterwards to feed cattle, being invited to it by the fertility of their soil. The shepherds of Arcadia, amidst their numerous flocks and herds, were distinguished by the tuneful strains of their vocal and instrumental music, and for the worship which they paid to their god Pan.

Affording few temptations to commercial adventures, they had very little of the intercourse of peace with surrounding principalities. The secure and insulated position of their territory long preserved the Arcadians, on the one hand unimproved by the advancing refinement of Grecian civilization, and on the other uninfected by Grecian degeneracy; and when other states had exhibited the highest exertions of genius, and were advanced to eminence in the arts, accommodations, and luxuries of life, the Arcadians were distinguished by the innocent simplicity of their manners and by their fond attachment to pastoral retirement. "The exuberant fertility (as Dr. Gillies observes) the inland situation, the generous warmth, yet lively verdure, together with the picturesque and animating scenery of this delightful region, seemed peculiarly adapted to inspire, and to gratify, the love of rural happiness; and to afford in all their elegance and dignity, those sublime and sacred joys of the country, which the genius of ancient poets had felt and described with such affecting sensibility."

Lycaon, the son of the founder of the Arcadians, improved what his father had done towards civilizing them, by introducing among them the worship of Jupiter. Each of his sons built a city, which they called respectively by their own names; in them the people acquired the habits of social

life; and in the next reign they began to sow corn, make bread, spin wool, and manufacture cloth for garments; so that in four generations, the Arcadians, from being but one remove from wild beasts, became civilized, industrious, inured to society, husbandry, and a regular police.

Arcadia, like other states of Greece, was anciently governed by kings. Of these kings they reckon twenty-five from Pelægus, the founder of their monarchy, to Aristocrates II. with whom it terminated. This last king was murdered by his subjects for his treachery to the Messenians his allies, whom he betrayed to the Spartans, then at war with them. This event happened in the first year of the 28th olympiad, or the 668th year before Christ; and if Pelægus was contemporary with Cærops, the founder of Athens, as Sir Isaac Newton supposes, and we refer him, with Blair in Tab. ii. of his Chronology, to the year 1556 before Christ, the duration of the Arcadian monarchy will be about 888 years. But about the commencement of this period there is a considerable difference of opinion among chronologers. However this be, the kings of Arcadia possessed only limited authority, but afterwards constructed a federal republic, of which the several departments sent respectively deputies to the states general. With such manners, and a form of policy so well adapted to virtuous simplicity and a moderate extent of territory, the Arcadians, while they adhered to their innocent pursuits and occupations, were contented and happy.

But the ambition of neighbouring states, and especially the rivalry of the two chief powers of Greece, Athens and Sparta, which involved intermediate and adjacent countries in their contentions, reached the mountains of Arcadia, and compelled the inhabitants frequently to change the crook for the sword. When obliged by necessity, or excited by honour, the Arcadian Islanders took the field, they displayed such stubborn valour, and exerted such efforts of vigour and activity, as made their services eagerly desired, and purchased with emulation, by the surrounding states. They commonly appeared clad with the skins of wolves and bears, and carried either a little bundle of javelins, or a lance in their hands, which they used with a peculiar dexterity. Their women also became at length such expert warriors, that they have sometimes by their seasonable succour decided a doubtful victory. Hence such offers were made to them as induced many, when their own country was at peace, to serve as mercenaries in foreign armies. The warfare in which the Arcadians were engaged, first from necessity, and afterwards from choice, made a very important change in their internal situation. From farms and villages they assembled into walled towns; they fortified Tegea, and afterwards Mantinea.

The Arcadians of Tegea joined the Grecian patriots of Athens and Sparta, in vindicating the freedom and independence of their native land against the attempts of oriental despotism, and bore an important share in the battle of Plataea, which consummated the victories of liberty. In the Peloponnesian war, Arcadia, situated between the contending parties, was involved in their hostilities. The Spartans, after having vanquished their principal rival, endeavoured to subjugate the Arcadians, but though sometimes victorious, yet they were never completely successful. At length, after the peace of Antalcidas had withdrawn their chief enemies from the field, they directed their efforts against Mantinea, and that city, become the capital of Arcadia, was after a gallant defence compelled to submit. The Arcadians however were not ultimately subdued; Epaminondas, in vindicating the liberties of his own country, asserted the independence of other states against the overbearing domination of Sparta. In the

first invasion of Laconia, the Arcadians joined the punisher of their imperious oppressors. Now so much accustomed to the conflicts of war, they also partook of its rapacity, and instead of the honest simplicity of shepherds, imbibed the plundering spirit of mercenary soldiers. Auxiliaries to the Theban hero, they had profited by his success: encouraged by their advantages, and the depression and distress of Sparta, they gave scope to their ambition, and planned the subjugation of the whole peninsula. Acquiring the policy as well as views of their changed national character, to pave the way for the total conquest of the Peloponnesus, they began by wresting several places from the Elians, the least warlike and most wealthy of their neighbours. But the ardour of rapacious avarice operating with too much violence and precipitation, by rousing confederate resistance, ultimately defeated the purposes of ambition. Injustice and robbery they aggravated by impiety and sacrilege; they directed their depredations against the temple of Olympia, containing the collected treasures of many centuries, the rich gifts of vanity and superstition. Not only neighbouring powers but many of their own countrymen censured this spoliation; internal discord arose between the plunderers and those who reprobated the deed, and their schemes of boundless aggrandisement proved abortive. The Arcadians now intermingling so much in the wars and intrigues of the Grecian states, accompanied them in their declension from patriotism to selfish corruption, from corruption to enervation and the decay of military prowess, until they became dependent and tributary appendages of the Macedonian kings, and afterwards provinces of the Roman empire. Since that time all traces of Arcadia are lost, and the country is only known as a part of the Grecian or the Turkish empire. Several colonies of Arcadians migrated at different periods from their own country, and settled in Latium; and may therefore be justly reckoned among the first inhabitants of Italy. Pausanias in *Arcad. lib. viii. oper. p. 511. ed. Kuhnii. Anc. Un. Hist. vol. v. p. 64, &c.*

ARCADIA, or CYPARISSA, in *Geography*, a sea-port town of European Turkey, in the Morea, situate on a gulf to which it gives name, open to the Mediterranean sea, six leagues to the north of Navarin. N. lat. $37^{\circ} 24'$. E. long. $21^{\circ} 42'$.

ARCADIUS, in *Biography and History*, an emperor of the east, and eldest son of Theodosius the Great, was born in Spain, A. D. 377, and invested by his father with the purple at the age of six years, A. D. 383. At his death, in 395, Theodosius divided the empire between his two sons, Arcadius and Honorius; allotting to the former Thrace, Asia Minor, Syria, and Egypt, with Dacia, Macedonia, and half of Illyricum. Arcadius possessed none of those qualities that were adapted to his station, and to the extensive dominion which was assigned him; and he had the misfortune, at the commencement of his reign, to be under the direction of his father's unworthy favourite, Rufinus, whose ambition led him to aspire to the sovereignty itself. In order the more effectually to secure his influence over the young prince, he concerted a marriage between Arcadius and his daughter: but the eunuch Eutropius contrived to attach the emperor's affections to Eudoxia, and he was married to her in the first year of his reign. Rufinus being cut off by an untimely death, Eutropius, who was even a worse man than Rufinus, succeeded to the ministerial power, and by fraud or violence, removed from the view of Arcadius all those in whom he placed any confidence. This minister, however, did not long enjoy the power which he acquired by artifice, and which he exercised merely to serve the purposes of his own ambition and avarice. Having fomented

discord between Arcadius and his brother Honorius, and persuaded Gildo to transfer the allegiance of Africa from the latter to the former, he caused the emperor A. D. 397, with a view to his own security and that of his adherents, to pass an unjust and cruel law of treason, extending the crime to all practices against the ministers and officers of the sovereign, and the punishment of it to descendants. His power was at length overthrown by the rebellion of Tribigild, the Ostrogoth, A. D. 399, and by the concurring influence of the empress Eudoxia, by whom he was succeeded in the absolute direction and government of the feeble Arcadius. She assumed the title of "Augusta," and had her image borne through all the provinces of the empire, which was honoured with the respect bestowed on that of the emperor himself. By her persecution of the venerable Chrysostom, who was banished and died in exile, because he too freely exposed the vices of the court, and of the empress, Eudoxia excited disturbances at Constantinople; but in the bloom of youth she died of a miscarriage, A. D. 404. Arcadius survived her a few years, and witnessed the calamities that were accumulating on the eastern empire. At length in his thirty-first year, he died at Constantinople; A. D. 408, after having reigned twelve years with his father, and nearly fourteen years after his death. He had one son, viz. Theodosius, who at the time of his decease was eight years of age, and four daughters. Arcadius was a prince of very moderate talents; being indolent, and also addicted to pleasure, he was shamefully imposed upon, and entirely governed by his ministers and the empress, who, under the sanction and by an abuse of his authority, oppressed the people in the most despotic and tyrannical manner. "It is impossible," says Mr. Gibbon, "to delineate his character; since, in a period very copiously furnished with historical materials, it has not been possible to remark one action that properly belongs to the son of the great Theodosius."

The supposed testament of Arcadius, by which he appointed Jezdegerd, the Persian monarch, guardian of his son, and which is mentioned by Procopius, is not authenticated by any sufficient evidence. *Anc. Un. Hist. vol. xiv. p. 324—356. Gibbon's Hist. vol. v. p. 372. 412.*

ARCADIUS, in *Entomology*, a species of PAPILIO (P. Nymph. Fab.) The wings are very entire; the anterior ones black with blue and white spots; posterior ones fuscous, beneath chestnut-brown. This kind inhabits Africa. Fabricius. Obs. Gmelin overlooked this new species in his *Syst. Nat.*

ARCÆ CUSTOS, in *Ecclesiastical Antiquity*, a title formerly given to the archdeacon, on account of his having the custody of the church's chest, or treasure.

ARCAGANTES, in *Ancient Geography*, called also Liligantes and Limigantes, were Sarmatians, who, being expelled their own country, took possession of some parts of the Roman territory.

ARCALU, in *Geography*, the name of a small principality of the Tartar Moguls, on the river Hoamko; where the great wall of China commenced.

ARCAN, a town of Asia, in Tartary, upon the frontiers of Mawaralnabrah, situate upon the river Cassima, and called also Adereand.

ARCANE, a small town of Asiatic Turkey, in Natolia, upon the coast of the Black Sea, between Seriape, or Sinape, and the Cape Pisello.

ARCANGIS, in the *Turkish Armies*, an inferior kind of infantry, which serve as *enfants perdus*, and to harass and pillage the enemies' frontiers.

The Arcangis are an order inferior to the Janizaries; and,

and, when any of them distinguish themselves, are usually preferred in the Janizaries order. They have no pay, but are to subsist on their plunder.

ARCANI, in *Geography*, a town of Mingrelia, at the mouth of a river of the same name, supposed to be the ancient Apfarrus.

ARCANIUS, in *Entomology*, a species of PAPILO (Dan. Fell.). The wings are very entire, ferruginous beneath, on the anterior pair one ocellated spot; on the posterior pair five, the first of which is separated from the others by a band. Fabricius. This is *Papilio Amyntas* of Scopoli and Poda, and inhabits Europe. It is produced from a green larva, which has an obscure line along the back, is yellow on the sides, and bidentated at the tail.

ARCANNA, a kind of red chalk, called by physicians *rubrica fabrilis*, as being used by carpenters to colour their lines for marking timber, &c.

ARCANO, in *Geography*, a town of Italy, belonging to the Venetian states, in the province of Friuli, eleven miles west of Udina.

ARCANUM literally signifies a *secret*; and is therefore very pertinently applied by quacks and impostors in medicine, who conceal their ignorance and fraud under the pretence of secrecy. Hence a multitude of arcana.

ARCANUM CORALLINUM, a name formerly given to red mercurial precipitate, on which spirit of wine has been burnt in order to render it milder.

ARCANUM DUPLICATUM. This term was invented by Glauber, and applied by him to the salt remaining after the distillation of nitrous acid, from nitre and sulphuric acid. It is the same as was afterwards known by the name Vitriolated Tartar; or, according to the modern nomenclature, SULPHAT of Potash.

ARCAS, in *Astronomy*, a name given by some old writers to the star Arcturus, in the constellation Bootes. Arcas, the son of Calisto by Jupiter, it is said, when he was about to kill his mother in the shape of a bear, was, together with her, snatched up into heaven; where she was converted into the constellation of the Great Bear; others say into this single star.

ARCAS, in *Entomology*, a species of PAPILO. The wings are very entire and fulvous; margin and spots black; posterior ones beneath grey, and without spots. Inhabits the Cape of Good Hope. Fabricius and Gmelin.

ARCAS, in *Ancient Geography*, a town of Armenia Minor, according to the Antonine Itinerary.

ARCAS, in *Geography*, a small place of Spain, in Castile, the Arcabrica of the ancients.

ARCAS, an island in the gulf of Mexico, in the bay of Campeachy. N. lat. 20°. W. long. 92° 50'.

ARCASSON Bay, lies on the coast of France, 18 leagues south-westerly from the river of Bourdeaux to Cape Ferret, its north entrance; and before it lies the island Terry, with a channel on each side.

ARCASTE, an island on the west coast of Africa, south of the river Gambia, and of Cape Roxo.

ARCATIS *Regia Sora*, in *Ancient Geography*, ARCADE, a town in the interior of the Indian peninsula, on this side the Ganges, and the capital of a country called Soretanum Paralia.

ARC-BOUTANT, in *Building*, a kind of flat arch, or part of an arch, abutting against the feet of an arch, or reins of a vault, to support, and prevent their giving way.

The name is French; formed of *arc* and *bouter*, to abut. Arc-boutants are only arched BUTTRESSES.

ARCE, in *Ancient Geography*, also called Rakem and Petra, the capital of Arabia Petræa.

ARCE. See ARCA and ARACEANS.

ARCE, in *Geography*, a town of Italy, in the kingdom of Naples, and country of Lavora, six miles south of Sora.

ARCEGOVINA, a province of Dalmatia, between the country of the Dulcignotes to the south-east, the republic of Ragusa to the north-west, a part of Bosnia to the north-east, and the Adriatic sea to the south-west. The principal towns are Rifano, Castel-Novo, Cataro, and Budoa, which are all fortified; and the river Moracica traverses the country, which abounds with mountains, and yet is very fertile, from the north-west to the south-west. The Venetians possess the greatest part of it, and the rest belongs to the Turks.

ARCELES, a town of France, in the department of the Eastern Pyrenées, and chief place of a canton, in the district of Ceret, four leagues south-east of Perpignan, and four east-north-east of Ceret.

ARCELLA, in *Entomology*, a species of PHALÆNA (*Tinea*); wings pure white, with a common arched mark, and two marginal spots of brown. Fabricius, Gmelin. Inhabits Germany.

ARC-EN-QUEUE, in *Ornithology*, the name of the Linnæan ORIOLEUS *Annulatus*, in Buffon's Hist. Nat. des Ois.

ARCES, in *Geography*, a town of France, in the department of the Eastern Pyrenées, and chief place of a canton, in the district of Ceret, seven leagues south-south-west of Perpignan, and two south-west of Ceret.

ARCESILAUS, in *Biography*, a Greek philosopher, the founder of the Middle Academy, was a native of Æolis, and born in the first year of the 116th olympiad, or the 316th year before Christ. He followed his first preceptor, Autolycus the mathematician, to Sardis; but he afterwards went to Athens, where he studied music under Xanthus, geometry under Hipponicus, and philosophy under Theophrastus, Aristotle, Polemon, and Crantor. With the latter, and also with Zeno the founder of the Stoic sect, he formed an intimate friendship. Poetry was his favourite amusement, and he was so familiarly acquainted with Homer and Pindar in particular, that he often cited in conversation pertinent passages from their works; and it was his practice every night before he went to sleep, to read a portion of Homer. After having in early life been initiated in mathematics and polite literature, he was designed for the profession of the law, but he rather chose to devote himself to philosophy. After the death of Crates, he took possession of the academic chair, and his method of instruction was universally admired. However, the innovations which he introduced in the Platonic school, gave rise to a new school, called, in reference to Plato's school, the Second Academy; and with respect to a subsequent innovation by Carneades, the Middle Academy. See ACADEMY.

The school of Arcesilaus was founded upon the principle of the uncertainty of knowledge; and it was instituted in opposition to the Dogmatists, and particularly the Stoicks, whose doctrine was different from that of Plato. This philosopher, under the sanction of Socrates and Plato, and without explicitly avowing the doctrine of universal scepticism as taught in the school of Pyrrho, maintained, that whatever certainty there may be in the nature of things, every thing is uncertain to the human understanding. He, therefore, taught his disciples not with confidence to assert their own opinions, but to controvert those of others; that truth has no certain characters by which it may be distinguished from error; and therefore he suspended his judgment, and disputed merely with a view of convincing him-

self that opposite opinions may be supported by arguments of equal weight. Hence his school became a theatre of unprofitable contention, in which his disciples were allowed to propose and to maintain their opinions; and then the master, by his skill in disputation, and by his captivating power of address, astonished the audience by confuting them. Thus the point in debate seemed to be determined, till the same ingenuity was employed on the opposite side of the question.

Arcefilus has been compared to Tiberius Gracchus, as a disturber of the peace, who endeavoured to overturn the established philosophy, without the merit of that political reformer; who attempted the correction of abuses and errors; for he brought the world of science into a worse state of confusion than that in which he found it. Accordingly his doctrine of uncertainty alarmed not only philosophers but civil magistrates; and he was considered as a common enemy to science and to society; and unquestionably his tenets seem necessarily to destroy the foundations of virtue, and to introduce uncertainty and indifference with regard to the obligations of morality. When Arcefilus was once reproached by an enemy for living according to his principles, Cleanthes, though a Stoic, justified him, and averred, "that though he destroyed morals by his doctrine, he established them by his conduct." "You flatter," said Arcefilus. "Is this flattery," replied Cleanthes, "to assert, that you say one thing and do another?" This, however, was a mere compliment, to which Arcefilus was not entitled; for, according to the representation of Diogenes Laertius, he was addicted to the most shameful intemperance and lewdness, and deserved the character of the corruptor of youth; so that the pernicious tendency of his principles was exemplified in his own practice. He died, in the 4th year of the 134th olympiad, 241 years before Christ, though at the age of 75, a martyr to his licentious conduct; for the cause of his death was a delirium produced by excessive drinking. On many occasions, however, he manifested a generous and liberal spirit. When one of his pupils expressed a predilection in favour of a Peripatetic philosopher, named Hieronymus, Arcefilus took him by the hand, and conducting him to his school, requested the philosopher to treat him in a manner suitable to his merit. When Cleanthes, who was the successor of Zeno, the professed adversary of Arcefilus, was affronted by one of his pupils, he would not restore him to his school till he had made a satisfactory acknowledgment for the offence. Having lent some silver vessels to a friend for an entertainment, when he found that he was poor, he would not allow them to be returned. Visiting a sick friend, whom he observed to be in poverty, he silently conveyed a purse of gold under his pillow. When the sick man discovered it, he said with a smile, "This is one of the generous frauds of Arcefilus." He is said to have spent a great part of the ample income arising from an estate at Pitane, the place of his birth, in similar acts of liberality. None of the writings of this philosopher have descended to our times. During his life he was honoured, and after his death the Athenians paid respect to his memory by a magnificent funeral. Two Christian fathers, viz. Numenius and Lactantius, have inveighed against his doctrine. Diogenes Laertius, l. iv. § 28, &c. Suidas. Athén. l. vii. p. 276. Cic. Acad. Quell. l. i. c. 5—12. 24. De Fin. l. ii. c. 1. l. v. c. 31. Euseb. Præp. Evang. l. xiv. c. 6. 9. Lactant. Inst. l. iii. c. 4. Gen. Dict. Brucker's Hist. Philos. by Enfield, vol. i. p. 244, &c.

ARCESINE, in *Ancient Geography*, a town formerly situate in the island Amorgus, one of the Cyclades.

ARCESIUM, a cavern of mount Ida, in the isle of Crete.

ARCEUTHIUS, a river of Syria, which watered the territory of Antioch, according to Strabo.

ARCEUTUM, is used in some *Ancient Law-Writers*, for a procurator due to a bishop, abbot, or archdeacon, from their clergy, in time of entertainment.

ARCII, ARC, ARCS, in *Geometry*, a part of any curve line; e. gr. of a circle, an ellipse, or the like. The arc of a circle is any part of its circumference. Such is A F B, *Plate III. Geometry, fig. 35.*

The base or line A B, that joins the two extremes of the arc, is called the CHORD; and A D, half of the chord bisected by the diameter at right angles, is the SINE of half the said arc, viz. A E.

All angles are measured by arcs. For this purpose an arc is described, having its center in the point or vertex of the angle: and as every circle is supposed to be divided into 360 degrees; an arc is estimated according to the number of degrees which it contains. Thus an arc is said to be of 30, of 80, of 100 degrees. However, the measure of angles by the arcs of a circle is founded upon the uniform curvature of the circle.

ARCS, *concentric*, are those which have the same center.

ARCS, *equal*, are such arcs of the same or equal circles, as contain the same number of degrees. Hence, in the same or equal circles, equal chords subtend equal arcs. And hence, again, arcs intercepted between parallel chords are equal.

A radius, C E, *fig. 35*, which bisects the chord in D, does also bisect the arc in E; and is perpendicular to the chord; and on the contrary. And hence the problem, to *bisect an arch*, is solved, by drawing a line C E from the center perpendicular to the chord in D. Equal arcs have equal chords, sines, tangents, &c.

ARCS, *similar*, or *like*, are those which contain the same number of degrees of unequal circles. Such are the arcs A B and D E, *fig. 36. or fig. 1. Plate VI. Architecture.*

Two radii being drawn from the center of two concentric circles, the two arcs intercepted between them bear the same ratio to their respective peripheries, and their radii; and also the two sectors to the areas of their respective circles. Similar arcs and other like curves are also like parts of the whole, or determined by like parts alike posited.

ARC of a circle, the length of an, may be found by the following rule: viz. as 180 is to the number of degrees in the arc, so is 3.1416 times the radius to its length. Or, as 9 is to the number of degrees in the arc, so is .0174533 times the radius to its length. For, when the radius is 1, half the circumference is 3.14159265, &c. consequently

$\frac{3.14159265}{180 \text{ degrees}}$, &c. = .0174532925199, &c. = the length of

an arc of 1 degree; hence $r \times .01745$, &c. = the length of 1° to the radius r , and, therefore, $.01745$, &c. $\times r \times$ number of degrees in any arc = the length of that arc: e. g. let the length of the arc A D B (*fig. 37*), whose chord A B is 6, the radius being 9, be required. By trigonometry, 9

(A C) : 3 (A P) :: 1 (radius of the tables) : $\frac{3}{9}$ = .3333333

= sine of the angle ACP, or arc A D, to the radius 1; and the degrees in the table of sines answering to the sine are 19.4712206, the double of which is 38.9424412, or the degrees in the whole arc A B. Then, by the rule, $38.9424412 \times .0174533 \times 9$ = 6.117063 = the length of the arc required. Dr. Hutton has given several other theorems, with

with their demonstrations, for finding the lengths of circular arcs in his "Treatise of Mensuration," p. 124, &c. : some of which are as follow. Let the radius of a circle be 1, any arc a , tangent t , line s , cosine c , and versed sine v : and we shall have,

$$a = t - \frac{1}{3} t^3 + \frac{1}{5} t^5 - \frac{1}{7} t^7 + \frac{1}{9} t^9 \text{ \&c.}$$

$$a = \frac{s}{c} - \frac{1}{3} \cdot \frac{s^3}{c^3} + \frac{1}{5} \cdot \frac{s^5}{c^5} - \frac{1}{7} \cdot \frac{s^7}{c^7} \text{ \&c.}$$

$$a = s + \frac{1}{2.3} s^3 + \frac{1.3}{2.4.5} s^5 + \frac{1.3.5}{2.4.6.7} s^7 \text{ \&c.}$$

$$a = \sqrt{2v} \times 1 + \frac{1}{2.3} \cdot \frac{v}{2} + \frac{1.3}{2.4.5} \cdot \frac{v^3}{2^2} + \frac{1.3.5}{2.4.6.7} \cdot \frac{v^5}{2^3} \text{ \&c.}$$

$$a = \frac{3.14159}{180}, \text{ \&c. } d = .01745329, \text{ \&c. } \times d, \text{ where } d$$

denotes the number of degrees in the given arc ; $a = \frac{8c-C}{3}$ nearly, when C is the chord of the arc, and c the chord of half the arc, whatever be the radius.

To investigate the length of the arc of any curve, put $x =$ the abscisse, $y =$ the ordinate of the arc z of any curve whatever, put $\dot{z} = \sqrt{\dot{x}^2 + \dot{y}^2}$; then, by means of the equation of the curve, find the value of \dot{x} in terms of \dot{y} , or of \dot{y} in terms of \dot{x} , and substitute that value instead of it in the above expression $\dot{z} = \sqrt{\dot{x}^2 + \dot{y}^2}$; and hence, taking the fluents, they will give the length of the arc z in terms of x or y . See RECTIFICATION.

TABLE for finding the Length of Circular Arcs, Radius being Unity.

Deg.	Length.	Deg.	Length.	Min.	Length.	Sec.	Length.
1	0.0174533	60	1.0471976	1	0.0002909	1	0.0000048
2	0.0349066	70	1.2217305	2	0.0005818	2	0.0000097
3	0.0523599	80	1.3962634	3	0.0008727	3	0.0000145
4	0.0698132	90	1.5707963	4	0.0011636	4	0.0000194
5	0.0872665	100	1.7453293	5	0.0014544	5	0.0000242
6	0.1047198	120	2.0943951	6	0.0017453	6	0.0000291
7	0.1221730	150	2.6175939	7	0.0020362	7	0.0000339
8	0.1396263	180	3.1415927	8	0.0023271	8	0.0000388
9	0.1570796	210	3.6651914	9	0.0026180	9	0.0000436
10	0.1745329	240	4.1887902	10	0.0029089	10	0.0000485
20	0.3490659	270	4.7123890	20	0.0058178	20	0.0000970
30	0.5235988	300	5.2359878	30	0.0087266	30	0.0001454
40	0.6981317	330	5.7595865	40	0.0116355	40	0.0001939
50	0.8726646	360	6.2831853	50	0.0145444	50	0.0002424

In using the above table, take the degrees, minutes, and seconds from the first, third, and fifth column, and against them are the corresponding lengths, the sum of which is required : e. g. what is the length of an arc of $37^\circ 42' 58''$?

30°	0.5235988
7°	0.1221730
$40'$	0.0117355
$2'$	0.0005818
$50''$	0.0002424
$8''$	0.0000388

the length required . 0.6582703

If the radius be not unity, the length may be found by proportion, thus, unity : radius :: the length here found : the length required.

See a table of circular arcs for each degree, minute, second, and third, of the semiperiphery, in Hutton's Tables, p. 340. See a paper on an elementary manner of obtaining series for expressing circular arcs, by Mons. L'Huilier in the Phil. Transf. for 1796, pt. i. p. 142—163.

To find the center of gravity of an arc of a circle ; see CENTER of gravity.

For the sines, tangents, &c. of arcs, see SINE, TANGENT, &c.

ARCH, in Astronomy, has various denominations according to the circle to which it is applied.

ARCH, Diurnal, of the sun is part of a circle parallel to the equator, described by the sun in his course betwixt rising and setting. The half of this comprehended between the meridian and horizon, is called the *semidiurnal arch*, and by

means of this the time of his rising and setting is easily ascertained. Tables of femidiurnal arcs may be found in most of our astronomical almanacs or ephemerides. The term is also applied to other celestial bodies, as the planets and stars. His nocturnal arch is of the same kind, excepting that it is described between his setting and rising.

The latitude and elevation of the pole are measured by an arch of the meridian ; and the longitude, by an arch of a parallel circle.

ARCH of progression or direction, is an arch of the ecliptic, which a planet seems to pass over, when its motion is direct, or according to the order of the signs.

ARCH of retrogradation, is an arch of the ecliptic, described while a planet is retrograde, and moves contrary to the order of the signs.

ARCH between the centers is an arch, as AI (Plate I. Astronomy, fig. 11.), passing from the center of the earth's shadow, A, perpendicular to the moon's orbit, OB, and meeting her center at the middle of an eclipse. See ECLIPSE.

If the aggregate of the arch between the centers AI, and the apparent semidiameter of the moon, be equal to the semidiameter of the shadow, the eclipse will be total without any duration ; if less, total with some duration ; and if greater, yet less than the sum of the semidiameters of the moon and the shadow, partial.

ARCH of position, or angle of position, is the same with the horary angle. See POSITION.

ARCH of vision is the sun's depth below the horizon, at which a star, before hid in his rays, begins to appear again.

TABLE exhibiting the *Arch of Vision* of the PLANETS and FIXED STARS nearly.

Planets.			Fixed Stars.	
	(^o)	(')	Magnitude	(^o)
Mercury,	-	10 0	1	- 12
Venus,	-	5 0	2	- 13
Mars,	-	11 30	3	- 14
Jupiter,	-	10 0	4	- 15
Saturn,	-	11 0	5	- 16
			6	- 17

However, the quantity of this arch is not always the same; but varies with the latitude, declination, right ascension or descension, and distance of any planet or star. With respect to Venus, it is sometimes reduced to nothing, as the is sometimes visible when the sun is at a considerable elevation above the horizon. Ricciol. Alm. v. i. p. 42.

ARCH, in *Architecture*, is a concave structure, raised or turned upon a mould, called the centering, in form of the arch of a curve, and serving as the inward support of some superstructure. Sir Henry Wotton says, an arch is nothing but a narrow or contracted vault; and a vault is a dilated arch.

Arches are used in large intercolumnations of spacious buildings; in porticoes, both within and without temples; in public halls, as ceilings, the courts of palaces, cloisters, theatres, and amphitheatres. They are also used to cover the cellars in the foundation of houses, and powder magazines; also as buttresses and counterforts to support large walls laid deep in the earth; for triumphal arches, gates, windows, &c.; and, above all, for the foundations of bridges and aqueducts, and they are supported by piers, butments, &c.

Arches are of several kinds, and are commonly denominated from the figure or curve of them, as circular, elliptical, cycloidal, catenary, &c. according to their curve, in the form of a circle, or ellipsis, cycloid, catenary, &c.

There are also other denominations of circular arches, according to the different parts of a circle, or manner of placing them; thus,

Semicircular arches, which are those that make an exact semicircle, having their center in the middle of the span or chord of the arch; called also by the French builders, perfect arches, and arches en plein centre. The arches of Westminster bridge are semicircular.

Scheme arches, or ikene, are those which are less than semicircles, and are consequently flatter arches, containing 120 or 90 or 60 degrees; &c.; they are also called imperfect and diminished arches.

Arches of the third and fourth point, or Gothic arches, or, as the Italians call them, di terzo and quatro acuto, because they always meet in an acute angle at top, consist of two eccentric circular arches meeting in an angle above, and are drawn from the division of the chord into three or four, or more parts at pleasure; of this kind are many of the arches in churches and other old Gothic buildings.

Elliptical arches usually consist of semiellipses, and were formerly much used instead of mantle-trees in chimnies, and are now much used, from their bold and beautiful appearance, for many purposes, particularly for the arches of a bridge, like that at Blackfriars, on account of their strength, beauty, convenience, and cheapness.

Straight arches are those which have their upper and under edges parallel straight lines instead of curves; these are chiefly used over doors and windows, and have their ends and joints all pointing toward one common center.

The term arch is peculiarly used for the space between two piers of a bridge, intended for the passage of water, boats, &c.

Arch of equilibration, is that which is in equilibrium in all its parts, having no tendency to break in any one part more than in another, and which is therefore safer and stronger than any other figure, the materials and all other circumstances being alike.

An investigation of the nature and property of arches of equilibration will be found in the following propositions and examples:

Problem I. (*Plate VI. Architecture, fig. 3.*) The nature of the curve ABD, forming an arch, being given to find the nature of the extrados or curve PSR, bounding the top of the wall APRD, supported by that arch, by the pressure or weight of which wall all the parts of the arch are kept in equilibrio.—1st. Let several equal right lines AB, BC, CD, &c. (*fig. 2.*) placed in a vertical plane, be moveable round the angles A, B, C, D, &c. whilst the points A, G at the base remain fixed and immovable; through B, C, D, &c. draw the lines Bi, Cm, Dp, &c. perpendicular to the horizon, and complete the parallelogram Bbik, and make Cl = Bk, and complete the parallelogram Clmn. In like manner make Do = Cn or Im, Er = op, Ft = rs, and complete all the parallelograms in the figure as at first.—2d. Let several weights which are to one another as the lines Bi, Cm, Dp, &c. lie respectively on the points B, C, D, &c.: now the force Bi is equivalent to Bb, Bk, acting in the directions BA, BC; the force Bb is destroyed by the resistance of the point A, but Bk endeavours to move the point B towards C; in like manner the force CM is equivalent to Cl and Cn; the force Dp to Do, op, &c.; now the forces Bk, acting towards C, and Cl, acting towards B, being equal by construction, destroy one another; and in like manner the forces Cn and Do, Dp and Er, Ev and Ft, &c. destroy one another; and the point G, being fixed, it is manifest the figure ABCD, &c. will not be moved by the incumbent weights Bi, Cm, Dp, &c. but all its parts will remain in equilibrio.—3d. The force Bb : force Bk or Cl :: sine \angle biB or iBC : S, \angle ABi :: $\frac{1}{S \cdot ABi}$

: $\frac{1}{S \cdot iBC}$ or $\frac{1}{S \cdot mCB}$. Likewise the force Cl : force Cn or

Do :: S. mCD or pDC : S. mCB :: $\frac{1}{S \cdot mBC}$: $\frac{1}{S \cdot mCD}$ or $\frac{1}{S \cdot pDC}$, and so on; whence it is plain, in general, that

any force Cl is as $\frac{1}{S \cdot \angle mCB}$; now since Cm = $\frac{S \cdot Clm \times Cl}{S \cdot Cml}$ = $\frac{S \cdot BCx \times Cl}{S \cdot mCD}$, therefore the force Cm is as $\frac{S \cdot BCx}{S \cdot mCB \times S \cdot mCD}$. —4. Now let the number of the

lines AB, BC, CD, &c. be increased and their lengths diminished ad infinitum, that the figures may obtain the form of a curve, and the pressure will then act on all parts of it; and the angle BCx will then become the angle of contact, and the sines of mCB and mCD become equal to the sine of mCx; therefore drawing the tangent An (*fig. 3.*), the pressure on any point A to preserve the equilibrium will be as the angle of contact at A directly, and the square of the sine of the angle mAn reciprocally; but the angle of contact is as the curvature, or reciprocally as the radius of curvature, therefore the pressure is reciprocally as that radius, and the square of the sine of that angle mAn.—5. Cor. 1. If a weight like a wall nPSR, be incumbent on the arch ABD, standing

ing in a vertical plane, and all the parts kept in equilibrio, then the weight Ag , on any point A , is as the curvature at A directly, and the cube of the sine of ATC reciprocally; AT being a tangent at the point A , meeting the axis BC produced in T : for the weight on the given part of the arch is as

$\frac{C}{S.ATC^3}$, C being the curvature at A , and the weight of the column Ag bris as $Ag \times wr = Ag \times Ar \times S.ATC = Ag \times S.ATC$, because Ar is given; therefore $Ag \times S.ATC$ is as $\frac{C}{S.ATC^3}$, and Ag as $\frac{C}{S.ATC^4}$, to keep the parts in equilibrio.—Cor. 2. If R be the radius of curvature in

A , then the weight Ag is as $\frac{1}{R \times S.ATC^2}$. —Cor. 3.

If $BC = x$, $AC = y$, $BA = z$, then Ag is as $\frac{-\dot{x}\dot{y}}{j^3}$, where \dot{x} is constant; for $\dot{z} : j :: AT : AC :: \text{rad. } 1 : S.ATC = \frac{j}{z}$; therefore $Ag = \frac{\dot{z}^3}{R \times j^3}$, and R may be found by supposing either \dot{x} or j given. If \dot{x} be given, $R = \frac{\dot{z}^3}{-\dot{x}\dot{y}}$, therefore Ag is as $\frac{\dot{z}^3}{j^3} \times \frac{-\dot{x}\dot{y}}{\dot{z}^3} = \frac{-\dot{x}\dot{y}}{j^3}$.

Problem II. The nature of the curve ABD (*fig. 3.*) being given for the figure of an arch to find the height Ag of the wall insisting thereon, at every point A , so that all the parts shall remain in equilibrio. Draw the ordinate AC , and let $BC = x$, $AC = y$, Arch $BA = z$, BS the height of the wall at the vertex = a , $R = \text{rad. curvature in } A$, draw the tangent AT , which will be found from the nature of the curve; find the $S.$ angle ATC ; then take Ag as

$\frac{1}{R \times S.ATC^3}$ for the height.

Example I. Let AB (*fig. 4.*) be the arch of a circle, radius = r , $BC = x$, cof. $BC = c$, $BS = a$, then $c = S.ATC$, whence Ag is as $\frac{1}{r^3}$ or as $\frac{1}{c^3}$ which at B is

$\frac{1}{r^3}$, therefore $\frac{1}{r^3} : \frac{1}{c^3} :: a : Ag = \frac{ar^3}{c^3}$. Let $BO = ON$, $BS = a$, (*fig. 4.*). Then as $\text{rad. } r : \text{cof. } BA = c :: BO : CO$ and $r^3 : c^3 :: BO^3 : CO^3$, where $\frac{r^3}{c^3} = \frac{BO^3}{CO^3}$ and $\frac{ar^3}{c^3}$

$= \frac{aBO^3}{CO^3} = \frac{BS \times BO^3}{CO^3} = Ag = BS$ when $CO = BO$,

and when $CO = 0$, Ag is infinite; hence SgM is a curve running up to an infinite height towards M , the perpendicular NM being an asymptote to it, and the curve is as accurately as represented in the figure, when the thickness BS at the top is about 1-tenth of the span diameter. But if a circular arch, and a right line at the top was necessarily required, the proportion of BS to the radius BO may be found, so as the arch may be nearly in equilibrio thus:—When Sg is a right line, then SQ in the figure must be nothing, or rather when the curve crosses the horizontal line, then SQ is equal to nothing. Now to find that

point from the general equation: $Ag = \frac{ar^3}{c^3} = \frac{BS \times BO^3}{CO^3}$

$= \frac{BS \times BO^3}{BO - BC^3}$. Put $BC = x$, then $\frac{ar^3}{c^3} = \frac{ar^3}{r-x^3} = Ag$

$= x + a$ when the curve crosses the horizontal line, whence $ar^3 - a \times r - x^3 = x \times r - x^3$, and by division $a = \frac{x \times r - x^3}{r^3 - r - x^3}$

Now this value of a or BS evidently becomes = 0 , when the arch consists of the whole femicircle; but when the arch is less than the femicircle, a will have a finite value; and between 60 and 120 degrees, many arches of equilibration of a certain thickness at the top may be found. Thus, if the half arch contain 30 degrees, then a will be $= \frac{1}{4}r$ very nearly. And if BA was an arch of 45 degrees, then a or $BS = \frac{1}{2}$ of the span nearly. Farther, if BA were 55 degrees, then $a = .0992r$, which is between the sixteenth and seventeenth part of the span or chord; so that in each of these cases, the points A and B would be in equilibrio; but then about the middle parts between B and A , or rather nearer to B than to A , the materials should be a little lighter than at B and A , and the exact proportion in which their gravity should be diminished, might be easily found by calculation: thus, in the first case in particular (*fig. 5.*) the specific gravity of the materials in the middle of the arch between B and A , that is, at 15 degrees from B , should be to that at B or A , as 278 to 284 ; which is but a very inconsiderable decrease, and may be very well neglected. In the first two cases, the thickness at the top would be too much; but in this latter one, when the whole arch is 110 degrees, the thickness is but just about that which the best architects now allow, and in greater arches the thickness would become too little; so that an arch of nearly about 110 degrees is the only part of a circle that can be used with much propriety.

Example II. Let NAB (*fig. 6.*) be an ellipse, $t = NO$, the semitransverse parallel to the horizon, $r = BO$ the semi-conjugate, $BC = x$, $CA = y$, $BS = a$; then by the nature

of the ellipse, $r : t :: \sqrt{2rx - x^2} : y = \frac{t}{r} \sqrt{2rx - x^2}$; hence

$j = \frac{t \times \dot{x}}{r} \times \frac{r - x}{\sqrt{2rx - x^2}}$ and $\dot{y} = \frac{-t\dot{x}^2}{2rx - x^2}$ by making \dot{x}

constant. Then $Ag = \frac{-\dot{x}\dot{y}}{j^3} \times Q$, is $= \frac{tr\dot{x}^3 Q}{2rx - x^2}$

$\frac{r^3}{t^3 \dot{x}^3} \times \frac{2rx - x^2}{r - x} = \frac{rQ}{t^2 \times r - x^2}$; but when $x = 0$, this ex-

pression becomes $a = \frac{rQ}{t^2}$, and then $Q = \frac{at^2}{r}$, consequently

$= a \times \frac{r}{r - x} = \frac{BS \times BO^2}{CO^3}$, the same as in the circle;

but the elliptic arch may take a straight line at top better than the circular one, when the longer axis is horizontal, because the arch is flatter, or of a less curvature; and worse than the circular, when the shorter axis is horizontal.

For the convenience of those readers who may not be acquainted with the fluxionary or algebraical expressions, we shall give the calculation in numbers for the two last kinds of arches, viz. the circular and elliptical. Let ABD (*fig. 5.*) be a segment of a circle of 110° whose chord or span AD may be 100 , then the versed sine CB will be 26 nearly, and the radius AO or BO 61.04 nearly. Take $BS = 6.05$, which will be a little less than the 16th part

of the span AD , then $\frac{AC^3}{CO^3} \times BS$ will be equal to the

height AG . First suppose BC equal 5 , and $CO = 56.04$, then AG , the height of the wall from the arch to the top, will be equal to 6.05 multiplied by 61.04 cubed and divided

by.

by 56.04, cubed equal to 7.8248: if BC be equal to 10, AG will be equal to 10.368, and so on, whatever number BC be taken.

For the ellipsis, let NABD (fig. 6.) be an ellipsis with the longer axis NH horizontal and semitransverse NO = 48.29 semi-conjugate BO = 41.04 feet: then if we suppose AD to be the span of the arch ABD, its height BC will be 30 feet; and when AD = 8; nearly, let BS be taken = 6 feet. Then the general equation for any height

AG of the wall is $\frac{BS \times BO^3}{CO^3}$. Suppose BC = 10, then

$$CO = 31.04, \text{ and AG in this case is equal to } \frac{6 \times 41.04^3}{31.04^3}$$

$$= 13.86; \text{ again suppose BC} = 20, \text{ then AG} = \frac{6 \times 41.04^3}{21.04^3}$$

= 44.53, and by cubing the value of CO for a denominator to the constant numerator, 6×41.04^3 , the value of AG in every point of the arch may be readily found.

For the method of determining the figure of the extrados of the parabola, hyperbola, and catenarian, see Dr. Hutton's Principles of Bridges, sect. 2. from page 31 to 40. Emerson's Miscellanies, p. 156, &c.

Problem III. Having the form of the extrados given to find the intrados; that is, having given the form of the line bounding the top of a wall supported by an arch, to find the figure of that arch, so that by the pressure of the superincumbent wall, the whole may remain in equilibrium. When the extrados is an horizontal line, Dr. Hutton and Mr. Emerson have both determined the nature of the curve, and calculated tables for constructing it, where the height, the span, and the thickness at the crown are given. Dr. Hutton supposes the span NH = 100, height BO = 40, and the thickness BE at the crown = 6. Put a or BE = 6, b or NO = OH = 50, and r or BO = 40, x = BC, y = AC, (fig. 7.) The equation of the curve is thus expressed:

$$\text{hyp. log. of } \frac{a + x + \sqrt{2ax + x^2}}{a}$$

$$y = b \times \text{hyp. log. of } \frac{a + r + \sqrt{2ar + r^2}}{a}$$

Then the corresponding values of ED and DA, or horizontal and vertical lines, will be as in this table.

TABLE for constructing the curve of equilibration.

Value of DE.	Value of AD.	Value of DE	Value of AD.	Value of DE.	Value of AD.
0	6.000	21	10.381	36	21.774
2	6.035	22	10.538	37	22.948
4	6.144	23	11.368	38	24.190
6	6.324	24	11.911	39	25.505
8	6.580	25	12.489	40	26.894
10	6.914	26	13.106	41	28.364
12	7.330	27	13.761	42	29.919
13	7.571	28	14.457	43	31.563
14	7.834	29	15.197	44	33.299
15	8.120	30	15.980	45	35.135
16	8.430	31	16.811	46	37.075
17	8.766	32	17.693	47	39.126
18	9.168	33	18.627	48	41.293
19	9.517	34	19.617	49	43.581
20	9.934	35	20.665	50	45.000

The chief properties of arches of different curves may be seen in sect. 2. of Dr. Hutton's "Principles of Bridges," above quoted. It there appears that none, except the mechanical curve of the arch of equilibration, can admit of a horizontal line at top; that this arch is of a form both graceful and convenient, as it may be made higher or lower at pleasure, with the same span or opening; that all other arches require extrados that are curved, more or less, either upwards or downwards: of these, the elliptical arch approaches the nearest to that of equilibration for strength and convenience; and it is also the best form for most bridges, as it can be made of any height to the same span, its hanches being at the same time sufficiently elevated above the water, even when it is very flat at top. Elliptical arches also appear bolder and lighter, are more uniformly strong, and are much cheaper than most others, as they require less materials and labour. Of the other curves, the cycloidal arch is next in quality to the elliptical one for these properties, and lastly the circle. As to the others, the parabola, hyperbola, and catenary, they are quite inadmissible in bridges that consist of several arches; but may, in some cases, be employed for a bridge of one single arch which may be intended to rise very high, as in such cases they are not much loaded at the hanches. The weight of the arch, the pressure on the abutment, &c. &c. will all be considered under the article BRIDGE.

ARCH, in Building, is a number of stones placed together over a hollow space, in the form of some curve, as a part of a circle, of an ellipsis, a parabola, hyperbola, &c., having the joints so formed, that it is supported without falling, by the piers or abutments from which it springs. Of circular and elliptical arches, some consist of semicircles or semiellipses, others are composed of segments of these curves.

Arches are chiefly used for bridges, entrances to cities and large buildings, and in general for the covering of any very large opening in walls; as also for smaller apertures, as doors, windows, &c.

The decoration of arches is various according to the nature and destination of the building, but it generally consists of mouldings surrounding the curve, called an archivolt.

For the application of arches to particular purposes, see BRIDGE, TRIUMPHAL ARCH, GATE, DOOR, WINDOW, DOME, VAULT.

ARCH, triumphal, is a gate or passage into a city, built of stone or marble, and magnificently adorned with architecture, sculpture, inscriptions, &c. serving not only to adorn a triumph at the return from a victorious expedition, but also to preserve the memory of the conqueror to posterity.

These arches were at first very simple, being built of brick, such as that of Romulus; or of roughly hewn stone, as that of Camillus; and they were also for a long time of a semicircular figure, and hence called "fornices" by Cicero. In process of time they acquired a greater degree of magnificence; and they were constructed of the finest marble, and of a square figure, with a large arched gate in the middle, and two small ones on each side, adorned with columns and statues, and various figures executed in sculpture. From the vault of the middle gate hung small winged images of victory, with crowns in their hands, which they let down on the victor's head as he passed in triumph. This kind of magnificence commenced under the first emperors; so that Pliny (H. N. xxxiv. 6. § 12.) calls it "novicium inventum." During the time of the republic, arches were appropriate to generals who obtained victories over

over the enemies of Rome; and none were erected in honour of the dead. But when Augustus became emperor, this was one species of adulation that was rendered him; and the Roman senate proposed to him to have a triumphal arch erected in honour of Nero Drusus who died in Germany. He approved the proposal; and an arch of marble, adorned with trophies, was erected on the Via Appia. Caligula was the second on whom this honour was conferred after his death by the Pisans, to whom he had sent a colony. Germanicus was the third. This honour was afterwards extended to women; which Dion considers as an evidence of the degeneracy and fervility of the Romans: it was granted to Livia after her decease.

Antiquarians have reckoned 36 triumphal arches in Rome. The most celebrated of the ancient arches now remaining at Rome, are those of Titus, of Septimius Severus, and of Constantine; of which we have figures given us by Des Godetz.

The arch of Titus, placed between the forum and the coliseum, was erected, as some have thought, by the senate and Roman people, to Titus and his father Vespasian, in honour of their victories: but it was more probably dedicated to Titus after his death and apotheosis, as the epithet "divo," applied to him in the inscription still extant, suggests; and its chief design seems to have been to commemorate the conquest of Judæa, and the destruction of Jerusalem. The frieze of this arch, which is of the Composite order, is supported by two columns, and upon it is represented the triumphant procession of Titus, including a figure of the river Jordan, with captives and animals, as well as instruments of sacrifice, in sculpture. On the inner sides of the arch are two basso-relievos, one of which exhibits the emperor drawn in his triumphal car by four horses; the lictors accompany the chariot; and victory follows, holding in her left hand a branch of palm, and in her right hand a crown of laurel over his head: the horses are conducted by a figure representing the city of Rome, with a helmet and spear; and she is followed by magistrates, &c. bearing branches of laurel. The other bas-relief represents the table of shew-bread, the trumpets, the golden candlesticks with seven branches, the tables of the law, the ark of the covenant, and other utensils, brought as spoils by the conqueror from the temple of Jerusalem.

The arch of Septimius Severus was erected by the Roman people, as the inscription intimates, in honour of his victory over the Parthians and other barbarous nations, that were enemies of Rome. This arch stands near the back part of the capitol; and though it is much sunk in the earth and mutilated, several basso-relievos are still distinguishable. On the two sides of the vault of the grand arch are two winged victories bearing trophies, two genii with perfumes, flowers, and fruits, symbolical of the provinces subdued by Severus, and four rivers. Eight fluted columns, of the Corinthian order, support the frieze that bears the inscription. A staircase of marble led to its summit, on which were placed Caracalia with his father and brother, in a triumphal chariot drawn by six horses, and at their sides ranks of soldiers who accompanied the triumph. The inscription imports that this arch was erected in honour of Marcus Aurelius, as well as of S. Severus, "in acknowledgment of the restoration of the safety of the state, and the aggrandizement of the Roman empire, by their valour and eminent virtues."

The arch of Constantine subsists almost entire, and is by much the finest of the three. It was erected by the senate and Roman people in honour of Constantine after his victory over Maxentius, and stands in the Appian Way at the junction of the Cœlian and Palatine mounts. The inscription on both

sides of the architrave imports, that it was dedicated "to the emperor Cæsar Flavius Constantine Augustus, the greatest, the pious, and the happy; because, by a divine impulse, the greatness of his courage, and the aid of his army, he avenged the republic by his just arms, and, at the same time, rescued it from the tyrant and his whole faction." On one side of the arch are the words "Liberatori urbis," to the deliverer of the city; and on the other, "Fundatori quietis," to the founder of public tranquillity. Antiquarians have observed that some of the basso-relievos, and other carvings upon this arch, appear to have been borrowed from the forum of Trajan, and that they represent that emperor's victories over the Dacians. This was the case with respect to the eight mutilated statues, whose heads Lorenzo de Medicis broke off and conveyed away to Florence. This theft might not, perhaps, have been so notorious to posterity, if the artists of Constantine's time had not added some figures which make the fraud apparent, and by their manifest inferiority evince the great decline of the arts in the interval between the reigns of those emperors. Although the decree for erecting this arch was, without doubt, passed immediately after the defeat of Maxentius, it appears from the monument itself, that the building was not finished and dedicated till the tenth year of Constantine's reign, or the year of Christ 315 or 316.

Triumphal arches were not confined to Rome and its environs. Two arches, with statues of the natural size, were erected on the Flaminian way, one on the bridge of Tiber, and the other at Rimini, in honour of Augustus, who made this way from Rome to Rimini; and another arch was constructed on the summit of mount St. Bernard in the Alps, in honour of the victory which Augustus obtained over the inhabitants of these mountains. The triumphal arch of Ancona was erected in honour of Trajan, the empress Plotina and her sister Marciana. One of the gates of Orange is a triumphal arch of C. Marius, supposed to have been erected in honour of the victory obtained by him and Catulus over the Teutones, Cimbri, and Ambrones. The gates, Peyro at Montpellier, and of St. Denis, St. Martin, and St. Antoine, at Paris, may also be reckoned triumphal arches of the moderns.

In China, triumphal arches are very numerous. They are erected not only in all the cities, but on the mountains and eminences along the roads; and were originally designed for the commemoration of their illustrious heroes, such as princes, generals, philosophers, and ministers of state. The number is computed to exceed 1100, among which there are nearly 200 of exquisite beauty and grandeur. Some few, less noble and beautiful, are erected to their most distinguished females. The height of these arches is commonly between 20 and 25 feet, and they are decorated with figures of men, beasts, and birds, placed in various attitudes, festoons and other ornaments, which are but indifferently carved; but in some the relievos are so bold, that they seem to be separated from the work.

ARCH, *Mural*. See MURAL.

ARCH, in the *Scripture History*. See ARK.

ARCH, or Arco, in *Geography*, a small town of Germany in the Tyrol, seated on the Sarca, with a citadel standing on a mountain. It is the capital of a country, founded in 1413 by the emperor Sigismund. It is distant six leagues south-west from Trent, and twelve north-west from Verona.

ARCH, or ARCHI, formed of αρχη, *beginning*, whence αρχη, *princeps*, *chief*, is also a term without any meaning of itself, but which becomes very significant in composition with other words; as it heightens and exaggerates them; and has the force of a superlative, to shew the greatest degree or eminence of any thing.

Thus we say, *arch-treasurer, arch-angel, arch-bishop, arch-heretic, &c.* to denote such as have a pre-eminence over others. So also *arch-fool, arch-rogue, &c.* to express folly and knavery in the utmost degree.

In English, we usually cut off the final *i*, from *archi*, though with very ill effect, as the words with which it is joined sound much harsher on that account, than they would do, were it preserved entire, as it is in most other languages.

ARCHABIS, in *Ancient Geography*, a river of Asia, in the territory of Colchis, which, according to Arrian, discharges itself into the Euxine sea.

ARCHAD, or **ACCHAD**, was built by Nimrod after he had founded Babylon, from which it was not far distant. Bochart supposes that it was seated on the banks of the Argad, which passed by the walls of Sitace; and indeed he suggests that there were the same city under different names.

ARCHADIAPOLIS, an episcopal city of Asia, mentioned in the sixth council of Constantinople.

ARCHÆA, the name of a city of Asia, in the district of Eolis, according to Pausanias.

ARCHÆOGRAPHIA, the art of describing or explaining ANTIQUITIES. See ANTIQUE.

ARCHÆOPOLIS, a city of Asia Minor, in Ionia, according to Pliny, in whose time it was destroyed, after having been often rebuilt. It was also called Cobe, Sipyllum, and Lebade.

ARCHÆOPOLIS, a town of the territory of Colchis, and metropolis of Lazica, seated, says Procopius, on a barren hill, and watered by a river that flowed from an adjacent mountain.

ARCHÆOTA, a keeper of ancient records.

ARCHÆUS. See ARCHEUS.

ARCHAISM, properly denotes a phrase or diction now obsolete and out of use, though anciently deemed good, or passable.

ARCHAISM, *etymologic*, *archaismus etymologicus*, is when either an obsolete word, declension, or conjugation, is used.

ARCHAISM, *syntactic*, *archaismus syntacticus*, is an unusual and obsolete construction in discourse.

ARCHAMA, in *Ancient Geography*, a town of Capadocia, in the state of Cilicia, according to Ptolemy.

ARCHANDROPOLIS, a city of Egypt, according to Herodotus and Stephan. Byz.; but not mentioned by Ptolemy, and probably not existing in his time.

ARCHANGEL, compounded of the Greek *αρχος*, *prince*, and *αγγελος*, *angel*, an intellectual substance or angel, placed in the ninth order among the blessed spirits which compose the celestial HIERARCHY. See ANGEL.

The scripture (says lord King, Prim. Church. p. 73.) mentions but two orders of angels; viz. archangels, presiding over the angels; and the angels, obeying and attending on the archangels. Indeed, we have no account in scripture but of one exalted spirit, anciently styled archangel (see 1 Thess. iv. 16.); though it is not improbable that as there are different degrees of glory in the celestial state, there may be different ranks, and corresponding denominations and offices among these superior beings.

ARCHANGEL, in *Botany*. See LAMIUM.

ARCHANGEL, *baum-leaved*. See MELITTIS.

ARCHANGEL, *yellow*. See GALEOPSIS.

ARCHANGEL, in *Geography*, a sea-port town of Russia, and capital of the government to which it gives name. This government is bounded on the north by the Frozen Ocean, on the east by the government of Tobolsk, on the south by the governments of Olonetz and Vologda, and on the west by the White Sea and the dominions of

Sw den. It was formerly included in the government of Vologda, but separated by a late partition of Catharine II. Accordingly it contains 7 districts; viz. Archangel, on the Dvina, about 70 versts from its mouth; Kolmogori, on the Dvina; Schenkursk, on the river Vaga; Pineg, on the right side of the Dvina, where the river Pinega falls into it; Onega, on the river Onega, in Russian Lapland; Kola, on the river Kola, near the bay of Kola, in the Frozen Ocean; and Mefen, on the river Mefen, falling into the Frozen Sea. The town of Archangel is seated on the river Dvina, near its mouth, where it forms the gulph of Archangel in the White Sea. It was discovered in 1553, on occasion of the first enterprize of the English for opening a trade with Russia, by Richard Chancellor, who, under Sir Hugh Willughby, had the command of a small fleet of 13 ships, destined for discovering a north-east passage to China and India. Two of these ships were forced by effects of weather into the bay of the river Arzina, in Russian Lapland; and Sir Hugh Willughby, together with both crews, were frozen to death. Chancellor, discovering the country bordering on the White Sea, landed near the mouth of the Dvina, in a bay which he denominated the bay of St. Nicholas, from a convent near the present port of Archangel. Soon after this, the tzar Ivan Vassilievitch II. caused the harbour of the Archangel Michael to be constructed; granted several privileges to the English nation; and thus grew up at length the trading port Archangel: the commerce soon increased, and with some occasional interruptions, Archangel continued the sole port for the exports and imports of Russia, until the building of St. Petersburg, when Peter the Great removed the commerce of the White Sea, to the havens of the Baltic. From 1691 to 1701, the exports, on a yearly average, amounted to the value of 112,251 pounds sterling; whereas the imports from England were estimated at only 58,834 pounds sterling. The revenue of the crown at Archangel amounted annually to about 100,000 rubles; a sum which, according to the value of money at that time, may be deemed very considerable. The principal articles of export were then potashes, caviar, tallow, wax, hides, hemp, feathers, tar, yarn, beef, rhubarb, silk (probably Chinese and Persian), cork, bacon, cordage, furs, bristles, &c. all rough commodities. In 1752, Elizabeth again restored the ancient immunities of Archangel; and its present trade is not inconsiderable. To the former articles of exportation, several others of importance are added, such as corn, linseed, iron, flax, train-oil, sail-cloth, and other coarse linens, tobacco, &c. This port supplies the government of Archangel, and part of those of Nishnei-Novogorod, and Casan, with European commodities, and draws in exchange from those parts corn, flax, hemp, coarse linen, cordage, sails, malts, tallow, which are mostly conveyed by the Dvina: and it also forms a principal communication with the northern and western parts of Siberia, whence fur-skins and iron are procured. A ship goes every year from Archangel to winter at Spitzbergen; and at least one frequently goes to Novaya Zemlia, for the benefit of the fishery.

From a statement of the port-duties, given by Mr. Tooke for 1775, it appears that the imports of Archangel amounted to 281,747 rubles, 63 kop; its exports to 1,367,926 rubles, 38 $\frac{3}{4}$ kop; and duties to 144,961 rubles, 84 $\frac{1}{2}$ kop. The water of the sea near Archangel is so briny, that quantities of sea-salt are prepared from it; though that of the White Sea in general contains proportionably but little salt. The fishery here, and on other parts of this sea, is very considerable, particularly of stock-fish, herrings, whales, morfes, porpoises, sea-dogs, &c. The

dock-yards of Archangel are not in the town, but at the distance from it of five versts, on an island in the Dvina, named Solombol, which is pretty large, and inhabited by people belonging to the yards. The ships are built in docks, and then launched from the stocks; and the timber of which they are constructed is that of the larch-tree, which is very cheap: a quantity sufficient for a ship of 60 guns costs there, if carefully and honestly purchased, somewhat more than 2000 rubles. The oak timber, which is used for particular parts of the vessel, is brought thither from the precincts of Casan.

In the government of Archangel, and particularly in the southern parts, the breeding of cattle is carried on with great success; and every where about the town there is a fine breed of large cows, brought originally from Holland, and which are not found in the least to degenerate. In the district of Archangel is also found a good kind of poney, fleet and hardy; but the genuine breed begins to be rare.

Mr. Coxe informs us, that the most honest and intelligent persons of the mercantile and trading order among the Russians are the inhabitants of Archangel and its environs: most of them are able to read, write, and cast accounts: many of them are much employed at Petersburg by the members of the British factory, to superintend their warehouses, and they have the general character of industrious and faithful servants. This ingenious traveller traces the distinguishing character of the inhabitants of Archangel and its environs, to this town's having been, during a considerable period, the great emporium of Russia; so that many of them, being connected with foreign merchants, who required great exactness in their dealings, were gradually trained to business. By a kind of local enthusiasm, and traditional instruction, they have continued to distinguish themselves among their countrymen, by acquiring the rudiments of arithmetic, and by a diligent discharge of their trust. Archangel is situated in N. lat. $64^{\circ} 34'$. E. long. $38^{\circ} 55'$.

ARCHANGELICA, in *Botany*. See ANGELICA.

ARCHANGELICÆ, in *Entomology*, a species of APHIS, found on the plant Angelica Archangelica, and described by Scopoli: it is black; beak and abdomen greenish. Gmelin.

ARCHANGELSKOI, in *Geography*, a town of Siberia, in the government of Irkutsk, at the conflux of the Tangui and the Oka, 116 miles north-east of Udinsk. N. lat. $53^{\circ} 20'$. E. long. $101^{\circ} 44'$.

ARCHARD, in *Commerce*, a kind of green fruit, pickled in vinegar, and much valued throughout the East Indies.

The best are those brought from Persia, in bottles, much like small cucumbers among us.

ARCHASIA, in *Entomology*, a species of PAPILIO found in Java. The wings are dentated, brown, with a common fulvous band, the first half of which is blue on the anterior wings. Gmelin. *Olf.* This author is indebted to Fabricius for his description, and by him this species is called ARCHESIA. It is the same size as Papilio Atalanta.

ARCHBISHOP, ARCHIEPISCOPUS, a metropolitan prelate, having several suffragan bishops under him.

Archbishops were not known in the East till about the year 320; and though there were some soon after this who had the title, yet that was only a personal honour, by which the bishops of considerable cities were distinguished. It was not till of late that archbishops became metropolitans, and had suffragans under them.

Athanasius appears to be the first who used the title archbishop, which he gave occasionally to his predecessor.

Gregory Nazianzen, in like manner, gave it to Athanasius; not that either of them was entitled to any jurisdiction, or any precedence, in virtue of it.

Among the Latins, Isidore Hispalensis is the first that speaks of archbishops. He distinguishes four orders or degrees in the ecclesiastical hierarchy, viz. patriarchs, archbishops, metropolitans, and bishops.

In the fourth century, when Constantine the Great modelled the ecclesiastical government according to the civil, new gradations of eminence and rank were introduced among the bishops, corresponding to those that were established in the state. Before this period, three prelates seem to have enjoyed a certain degree of pre-eminence above the rest of the episcopal order; these were the bishops of Rome, Antioch, and Alexandria; and to these the bishop of Constantinople was added, when the imperial residence was transferred to that city. These four prelates answered to the four prætorian prefects created by Constantine; and it is possible that in this century they were distinguished by the Jewish title of patriarchs. After these followed the exarchs, who had the inspection over several provinces, and answered to the appointment of certain civil officers who bore the same rule. In a lower class were the metropolitans, who had only the government of one province, under whom were the archbishops, whose inspection was confined to certain districts; but in this gradation the bishops brought up the rear. Mosh. Eccl. Hist. v. i. p. 349. See BISHOP.

ARCHBISHOPRICK, ARCHIEPISCOPATUS, the dignity of archbishop, or the province under his jurisdiction.

There are now two archbishopricks in England; viz. of Canterbury and York; the prelates whereof are called *primates*, and *metropolitans*; with this only difference, that the former is called primate of all England, and the latter, simply, primate of England.

The latter yields likewise in prerogative and jurisdiction to the former. The archbishoprick of York extends over the counties of Northumberland, Durham, Cumberland, Westmoreland, Cheshire, Lancashire, and the isle of Man, besides its proper and peculiar diocese of the greatest part of Yorkshire and Nottinghamshire. That of Canterbury comprehends the other counties, and has its peculiar diocese, being a great part of Kent. The archiepiscopal office is rather a dignity than a jurisdiction; and the primates rarely interfere in any dioceses except their own. They are appointed by the king, in the same manner as the bishops, by what is called a "congé d'elire."

The archbishop, beside the inspection of the bishops and inferior clergy in the province over which he presides, exercises episcopal jurisdiction in his own diocese. As archbishop, he, upon receipt of the king's writ, calls the bishops and clergy of his province to meet in convocation; but he cannot assemble them without the king's writ. To him all appeals are made from inferior jurisdictions within his province; and, as an appeal lies from the bishops in person to him in person, so it also lies from the consistory courts of each diocese to his archiepiscopal court. He is guardian of the spiritualities of any vacant see in his province, as the king is of the temporalities; and exercises ecclesiastical jurisdiction in it. He is entitled to present by lapse to all the ecclesiastical livings in the disposal of his diocesan bishops, if not filled within six months. He has likewise a customary prerogative upon consecrating a bishop, to name a clerk or chaplain to be provided for by such bishop; in lieu of which it is now usual to accept an OPTION. He is said to be *enthroned* when vested in the archbishoprick; whereas bishops are said to be *inflated*.

Archbishops, as well as bishops, may become void by death, deprivation for any gross and notorious crime, and resignation, which, on the part of an archbishop, must be made to the king himself. When an archiepiscopal see is vacant, the dean and chapter are the spiritual guardians, ever since the office of prior of Canterbury was abolished at the reformation.

The archbishop of Canterbury had anciently, viz. till the year 1152, jurisdiction over Ireland as well as England, and was styled a *patriarch*, and sometimes *alterius orbis papa*, and *orbis Britannici pontifex*. Matters were done and recorded in his name thus, *anno pontificatus nostri primo*, &c. The first archbishop of Canterbury was Auslin, appointed by king Ethelbert, on his conversion to Christianity, about the year 598. He was also *legatus natus*. See LEGATE. He even enjoyed some sort of royalty: as to be patron of a bishoprick, which he was of Rochester; and to make knights, coin monies, &c.—He is still the first peer of England, and the next to the royal family; having precedence of all dukes, and all great officers of the crown. It is his privilege, by custom, to crown the king and queens of this kingdom. He may retain and qualify eight chaplains; whereas a duke is by statute allowed only six.

He has, by common law, the power of probate of wills and testaments, and granting letters of administration.

He has also (by stat. 25 Hen. VIII. c. 21) a power to grant licences and dispensations in all cases formerly sued for in the court of Rome, and not repugnant to the law of God. He accordingly issues special licences to marry, to hold two livings, &c.; and he exercises the right of conferring degrees.

He is addressed with the title of *Grace*, and *Most Reverend Father in God*; and writes himself by *Divine Providence*; whereas bishops only use by *Divine Permission*.

He also holds several courts of judicature; as court of arches, court of audience, prerogative court, and court of peculiars.

The archbishop of York has the like rights in his province, as the archbishop of Canterbury. He has precedence of all dukes not of the royal blood; and of all officers of state, except the lord high chancellor. He has also the right of a count palatine over Hexamsire.

The first archbishop of York was Paulinus, appointed by pope Gregory about the year 622. He had formerly jurisdiction over all the bishops of Scotland; but in the year 1470, pope Sextus the IV. created the bishop of St. Andrews, archbishop and metropolitan of all Scotland.

ARCH-BUTLER, ARCHIPINCERNA, the great butler or skinker of the empire.

The king of Bohemia is archbutler: and his business is such is to present the first cup at an imperial entertainment; but he is not obliged to officiate with his crown on.

His other prerogatives are, that he precedes all other temporal electors; walks in procession immediately after the emperor, the empress and the electors of Mentz and Cologne following next; and in the electoral college he has the third voice, &c. He has for vicar or deputy the hereditary prince of Limbourgh.

ARCH-CHAMBERLAIN, ARCHICAMERARIUS, an officer of the empire; much the same with what in England we call *great chamberlain*.

The elector of Brandenburg is arch-chamberlain of the empire, being so appointed by the golden bull; and in that quality, he bears the sceptre before the emperor, which he bears in his coat of arms, walking on the left hand of the elector of Saxony. At some solemnities he also serves on

horseback like other electors, carrying a basin with a towel in his hands; which, alighting, he sets for the emperor to wash. He may proceed with respect to his fiefs, principalities and lands, as with all-odial estates; and at his own pleasure impose new tolls, and erect mills on all the rivers. He has his vicar, or sub-arch-chamberlain, who is prince of Hohenzollern, of the house of Brandenburg, and also bears the sceptre in his arms.

ARCH-CHANCELLOR, ARCHICANCELLARIUS, a great chancellor who anciently presided over the notaries, that is, the secretaries of a court.

This office chiefly obtained in France, under the two first races of their kings; and afterwards under the empire; as they had three several territories, Germany, Italy, and Arles; they had three arch-chancellors; and hence the three arch-chancellors still subsisting in Germany; the archbishop of Mentz being arch-chancellor of Germany, the archbishop of Cologne of Italy, and the archbishop of Treves of Arles.

The arch-chancellor of Germany is also denominated director, and also dean or decanus of the electoral college. To him it belongs to notify the demise of a Roman emperor to his co-electors, to appoint the diet, to administer the oath of election to the whole body of electors or their envoys, to collect their voices, to proclaim the election, and also to anoint the elected emperor, when the coronation happens within his diocese. At the diet he bears the general director, in which he acts without controul; and before him or his envoys all those of the states of the empire, as well as of foreign princes, legitimate themselves. He names the vice-chancellor of the empire, or an aulic vice-chancellor, who is obliged to take an oath to him as well as to the emperor. He also appoints all the chancery officers of the empire, and has supreme jurisdiction over them, and also the inspection of its archives. By him the emperor causes the aulic council of the empire to be visited. The arch-chancellor of Italy has the second voice at an election of a king of the Romans; and when the emperor is crowned at Aix-la-Chapelle, and in the archbishoprick of Cologne, the right of performing the coronation belongs solely to him.

The arch-chancellor of the holy Roman empire in Gaul and Arles is at present only a bare title, without any power belonging to it. At an election of a king of the Romans, he has the first voice, and constantly precedes the elector of Cologn.

Bern. de Mallinerot, in an express treatise *De Archicancellariis Imperii Romani*, shews that these three archbishops were arch-chancellors before they were electors.—We also read of arch-chancellors of Burgundy, &c.

ARCH-CHANTOR, ARCHICANTOR, the chief or president of the chantors of a church.

ARCH-count, *archicomites*, a title anciently given to the earl of Flanders, on account of his great power and riches.

ARCH-DEACON, ARCHIDIACONUS, a church officer vested with ecclesiastical jurisdiction over the laity and clergy, next after the bishop, either through the whole diocese, or only a part of it.

He is usually appointed by the bishop himself, and hath a kind of episcopal authority, originally derived from the bishop, but now independent and distinct from his. He therefore visits the clergy, and has a separate COURT for punishment of offenders by spiritual censures, and for hearing all other causes of ecclesiastical cognizance.

The archdeacon, sometimes also called *arch-levite*, was originally the first and eldest of the deacons who attended on the bishop: whence his name.

But as the archdeacons, in their original institution, had

no relation to the diocese, but only to the episcopal see, so it was by several steps and degrees that they attained to the power they now enjoy. At their first institution, their proper business was, to attend the bishop at the altar; to direct the deacons and other inferior officers in their several duties, for the orderly performance of divine service; to attend the bishop at ordinations; and to assist him in the management of the revenues of the church: but without any thing that could be called jurisdiction in the present sense of the word, either in the cathedral or out of it. Gibson.

An archdeacon was not known before the council of Nice: his function has since become a dignity: and even set above that of priests; though anciently it was quiet otherwise. The archdeacon was the bishop's chief minister, for all external concerns, and particularly the administration of the temporalities. He took care that order and decency were observed in divine service; looked to the ornaments and utensils of the church; had the direction of the poor, and inspection of the manners and behaviour of the people: for which reason he was called the *bishop's heart and eye*; *oculus episcopi, & cor episcopi*. These advantages soon gained him superiority over priests, who had only spiritual functions. But he had no jurisdiction over them till the sixth century; though by that time he was become superior to the archimandrite, or rural dean.

In the tenth century, archdeacons were considered as having jurisdiction in their own right, or attached to their office; with a power of delegating it to others. But from that time measures were taken to lessen their power, by increasing their number.—He whose district lay in the capital city, took the quality of *great arch deacon*.

We have sixty archdeacons in England: their office is to visit every two years in three, to inquire into the reparations and moveables belonging to the church, reform abuses in ecclesiastical matters, and bring the more weighty affairs before the bishop: besides which they have also a power to suspend, excommunicate, and in many places to prove wills, and in some to institute to benefices.

It is one part of the archdeacon's office to induct all clerks into their benefices within his jurisdiction; and, by the act of uniformity, he is now obliged to be in priest's orders.

Many archdeacons, in old foundations, have, by prescription, their courts and officials, as bishops have.

Archdeaconries are commonly given by bishops, who do therefore prefer to the same by collation; but if an archdeaconry be in the gift of a layman, the patron doth present to the bishop, who institutes in like manner as to another benefice; and then the dean and chapter do induct him, that is, after some ceremonies, place him in a stall in the cathedral church to which he belongeth, whereby he is said to have a place in the choir.

ARCH-subdeacon, archisubdiaconus, the first or chief among the subdeacons, as the archdeacon is among the deacons. In some copies of the Roman ordinal, he is called *subarchidiaconus*.

ARCH DRUID, ARCHIDRUIDA, the chief or pontiff of the ancient DRUIDS in a nation.

ARCHDUKE, ARCHIDUX, a duke vested with some quality, pre-eminence, and authority, above other dukes.

The archduke of Austria is a very ancient title. There have also formerly been archdukes of Lorraine and Brabant. Austria was erected into a marquissate by Otho I. in favour of his brother-in-law Leopold, or by Henry I. in 944, who is said to have bestowed it on Leopold, called the "illustrious," and the first that brought the Austrian countries as an inheritance to his posterity, under that dignity; and it was

raised into a duchy by Frederic I. in 1156; but we do not well know when, or why, the title archduchy was given it.—It is commonly maintained, that Frederic III. called the "Pacific," erected it into an archduchy for his son Maximilian, about the year 1477. Others say, that the title was conferred by the same emperor on Philip, the son of Maximilian; and that he was the first of the Hapsburg family distinguished by the appellation of Archduke. However this be, it is certain, that it has been uniformly used since the fourteenth century, and that considerable privileges are annexed to it.

The principal privileges of this state are, that the archduke shall distribute justice in his own dominions, without appeal: that he shall be judged to have received the investiture of his states, after having demanded it three times; and that he cannot be deprived of his countries, even by the emperor, and the states of the empire: that no affair of the empire can be concluded without his participation; and that he have a power of creating counts, barons, and gentlemen, throughout the whole empire; which are privileges to which the other dukes of the empire are entire strangers. Besides, he is born privy-counsellor of the emperor; all attempts against his person are punished as crimes læsæ majestatis; he is exempt from challenge to single combat; may assist at the assemblies, or be absent, at pleasure; and he has the privilege of being exempt from contributions and public taxes; and ranks immediately after the electors. His subjects cannot be summoned out of his province, upon account of law-suits, or to give witness, or to receive the investiture of fiefs: any lands of the empire may be alienated in his favour, even those that are feudal; in the succession to his states, the right of birth takes place, and upon the failure of males, the females succeed according to the lineal right; and if no heir be found they may dispose of their lands, as they please.

ARCH-monastery, archimonsasterium, an appellation sometimes given to the greater monasteries and abbies.

ARCH-notary, archinotarius, the *primicerius*, or chief of the notaries.

This office is supposed by some to have differed from the *arch-chancellor*, though wherein the difference consisted does not appear.

ARCHE, αρχη, is a Greek word, importing the *beginning*.

ARCHE, among *Physicians*, is the beginning or first period of disease.

ARCHE, L', in *Geography*, a town of France in the department of the Correze, and chief place of a canton, in the district of Brive, two leagues south-west of Brive.

ARCHED fountain. See *FOUNTAIN*.

ARCHED skene, or scheme, in Architecture, is used to denote a flat *arch*, less than a semicircular one.

ARCHED legs, is an imperfection in a horse, when being in his natural position, he has his legs bent forwards; so that his whole leg makes a kind of arch or bow.

This usually arises from excessive labour, whereby the back-sinews are made to shrink up, so that the legs remain arched, and naturally tremble after a little riding; though the disorder is natural to some horses.

ARCHEGETES, formed of αρχων, chief, and ηγεμοναι, to conduct, in *Mythology*, a title of Apollo, under which he had an altar and worship in the isle of Naxos. The coins of this island bore a figure of Apollo's head with this appellation. In the island of Malta, Hercules had the same title, whither his worship was brought from Tyre.

ARCHEION, a name given by the Greeks to the most retired and secret place of their temples, where were deposited.

fired the richest treasurers pertaining to the deities, to whom they were consecrated, and also other valuable articles which they were desirous of preserving secure. The Romans imitated the Greeks in this respect, and lodged their public treasure in the temple of Saturn.

ARCHELAUS, in *Ancient Geography*, a town of Cappadocia. Piny says, that it was a Roman colony, and that it was near the river Halys.—Also, a city of Judæa built by Archelaus, son of Herod the Great, before his exile. Ptolemy places it to the west of Jericho, and the Peutingerian tables fix its situation between Jericho and Scythopolis.

ARCHELAUS, in *Biography*, a Greek philosopher, was born either at Miletus or at Athens. He was a disciple of Anaxagoras at Lampascus, occupied the chair of that philosopher after his death, and may be considered as the last preceptor of the original Ionic school. Afterwards he removed to Athens, and with him the Ionic school was removed thither. Here he acquired distinguished reputation by publicly teaching the doctrines of Anaxagoras concerning natural bodies; whence he was denominated the natural philosopher. Among the tenets ascribed to him are the following: that similar parts were the material principles of all things, and that a superintendant mind, by collecting and uniting these, formed natural bodies; that the universe is infinite; that heat is the cause of action, and cold of rest; that the earth was originally a muddy mass, from which living animals were produced and nourished; and that animals have souls, differing in their powers according to the structure of the bodies in which they reside. In ethics, it was his fundamental principle, that there was in nature no essential distinction between right and wrong, but that it resulted from positive institution, and consequently that all actions were indifferent, till human laws declare them to be good or evil. This doctrine, so subversive of all moral obligation, gained little credit at the time when it was propounded; and it has had few advocates either in ancient or in modern times. Amongst the scholars of Archelaus, who were numerous, Socrates was eminently distinguished; and under him philosophy assumed a new character. Diog. Laert. l. ii. § 17. T. ii. p. 89. Cic. Tuscul. Quest. l. v. c. 4. T. ii. p. 454. ed. Olivet. Plut. de Placit. Phil. l. i. c. 3. T. ii. p. 876. August. de Civ. Dei. l. xiii. c. 2. Suidas. Brucker's Hist. Phil. by Enfield, vol. i. p. 153.

ARCHELAUS, a Christian divine, was bishop of Mesopotamia, and flourished under the emperor Probus, about the year 278. Of the author and authenticity of the work against the Manichees, intitled, "The Acts of the Disputation of Archelaus with Mani or Manichee," ascribed to him by Jerom and others, and said to be written in the Syriac language, many different opinions are entertained. Photius, on the authority of Heraclian, bishop of Chalcedon, ascribes it to Hegemonius; and hence Cave and others have been induced to consider Hegemonius as the translator. Fabricius conjectures, that this author, whose age is unknown, published an abridgment of the work of Archelaus. Dr. Lardner, who with his usual accuracy and impartiality has examined and weighed the evidence on this subject, inclines to the opinion of Beauobre, who thinks, that this work was originally written in Greek, near the end of the third or beginning of the fourth century; and that it contains some truths disguised and mixed with manifest falsehoods. It was edited from a manuscript of the Latin translation found at Cassino, and from some fragments of the Greek in Cyril and Epiphanius, by Zaecagni, in his "Collestanea Monumentorum Vet. Rom." in 1698. The writer's respect for the scriptures now commonly received, says Lardner, is manifest from his very numerous and frequent quotations of

them as decisive and of authority in all disputed points of religion. Cave, Hist. Lit. vol. i. p. 144. Fabr. Bibl. Græc. l. v. c. i. § 31. T. v. p. 362. Lardner's Works, vol. iii. p. 368—374.

ARCHELAUS, king of Judæa properly so called, together with Samana and Idumæa, was the son of Herod the Great by Martæ his fifth wife, and appointed by his will to succeed him in the 1st year of Christ, or the 3d year before the vulgar æra. Notwithstanding a conciliatory speech made by the new king on his accession to the throne, and some grants to the people, a tumult was raised, by which the paschal solemnity for that year was interrupted, and 3000 of the mutineers lost their lives. After the suppression of this tumult, Archelaus proceeded to Rome, in order to obtain the ratification of his father's will, and a permanent establishment in the kingdom. Upon his arrival he found his brother Herod Antipas, who was his competitor for the crown, together with several of his family who favoured Herod's pretensions, not so much from love to him as from hatred to Archelaus. An embassy also of fifty of the principal persons of Jerusalem was sent to Rome with a petition to Augustus, that they might be permitted to live according to their own laws under a Roman governor; and these deputies were joined by above 8000 Jews, that were resident in the city. Archelaus, however, by his humility and address, obtained the grant of half his father's kingdom, including Judæa Proper, Idumæa, and Samaria, under the title of Ethnarch, or governor of a nation, and also a promise of adding that of the king, as soon as he heard that his conduct merited that distinction. St. Matthew indeed (ch. ii. 22.) says, "that Archelaus did reign in Judæa;" and against this mode of expression there can be no just objection, because his father in his last will had appointed him his successor with the title of king; and Josephus (Antiq. l. 18.) calls him, notwithstanding the limitation of Augustus's decree, the king that succeeded Herod, and he has used (De Bell. l. ii. c. 7.) the term reigning for the duration of his government. Archelaus immediately upon his return to Jerusalem began to betray some offensive tokens of his arbitrary and vindictive temper. He first deposed Joazar, and afterwards his successor Eleazar, from the high-priesthood; and, in direct opposition to the Mosaic law, he repudiated his wife Mariamne, and married Glaphyra, the widow of his brother Alexander, though she had several children. In other respects, his reign was tyrannical, and, Antipater excepted, he seems to have been the worst of all Herod's sons; and therefore in the tenth year of his government, A.D. 6, or 7, the chief of the Jews and Samaritans, not being able any longer to endure his cruelty and tyranny, presented complaints against him to Cæsar. Augustus sent for him and some of his chief accusers to Rome, and having heard both the charge and the defence, condemned him to be banished to Vienne or Vienna in Gaul, where he died, and all his goods to be confiscated. Upon this, Judæa was reduced to a province of the empire and annexed to Syria; and Cyrenius, a consular person, was sent by Cæsar to make an assessment in Syria, and to seize the estate of Archelaus. From different statements given by Josephus in his war (De Bell. l. ii. c. 7. § 3.), Antiquities (l. xvii. c. 15. § 2.), and Life (§ 1.), there is reason to conclude, that Archelaus reigned nine years complete, and that the tenth year was current when he was banished. And Dio (l. lv. p. 567.) places Archelaus's banishment in the 759th year of Rome. If Herod did not die till the beginning of A.U. 751, the ninth year of Archelaus's reign could not be completed in the 759th year of Rome: but if it be supposed that Herod died in the beginning of A. U. 750, Josephus

fephus and Dio will be found to agree. There is probably a reference to the recent history of Archelaus in our Lord's parable recorded by St. Luke, ch. xix. 12—15. *Anc. Un. Hist.* vol. iii. p. 207—218. *Lardner's Works*, vol. i. p. 14, 15. 290. 425.

ARCHELAUS, king of Macedonia, was the natural son of Perdiccas II; and though he obtained the crown by assassinating the lawful heirs, he determined to maintain it with valour and glory. With this view he fortified the principal towns of Macedonia, disciplined his armies, and fitted out armed ships, which was a kind of force to which the Macedonians had not been accustomed. He also distinguished himself as a patron of literature and of the arts, and some of the most learned men of Greece frequented his court; with them he conversed in the most familiar manner, and some of his sayings at table are recorded amongst the apophthegms of antiquity. Euripides lived with him on terms of peculiar intimacy; and this is the more surprising, if we credit the tradition that he refused to write a tragedy, at his request, on some subject relating to himself, and offered this apology, that he did not wish to represent the cruelties of a tyrant. When Socrates was invited by him, he declined paying him that respect, alleging, as Seneca says, "that he could not go to see a man from whom he might receive favours, without being able to return the like;" and it is said, that Socrates censured the great expence which he bestowed on his palace which was painted by Zeuxis, whilst he had taken no pains to adorn his mind. Some have pretended that Aristophanes wrote his comedy of "the Clouds," from envy of Socrates, because Archelaus took more notice of this philosopher than of himself. Archelaus instituted sacrifices and scenic games in honour of Jupiter and the nine muses; and a day was devoted to each muse. He also sent chariots to the Olympic and Pythian games. The manner of his death and the duration of his reign are not precisely ascertained. It is generally supposed that he was assassinated by Craterus, the object of his lascivious passion, in consequence of an affront. According to Diodorus Siculus, he began his reign in the 3d year of the 93d Olympiad, 406 years before Christ, and reigned seven years. Others have extended it to fourteen, sixteen, and even twenty-four years. *Gen. Dict. Anc. Un. Hist.* vol. iii. p. 269.

ARCHELAUS, a famous sculptor, the son of Apollonius, was borne at Priene, a town of Ionia. The marble monument of the apotheosis of Homer is ascribed to him, and such is its distinguishing excellence, that, independently of his poems, it would have insured his immortality. It was dug up in 1658 in a field belonging to the princes of Colonna, where it is said the emperor Claudius, in whose time it was executed, had a house of pleasure.

ARCHEMORUS, in *Ancient Geography*, a river of Greece in the Peloponnesus, which separated the territories of Sicyon from those of Corinth. It is called Nemea by Strabo.

ARCHEMY. ARCHEMY, is used by some to denote the art of transmuting less perfect metals into the more perfect. In which sense *archemy* differs from *alchemy*, as a part from the whole.

ARCHENDA, in the *Ancient Physic*, a kind of powder prepared of *alcanna* and leaves of the Egyptian *LIGUSTRUM*, wherewith the people smeared their feet after bathing, as a preservative against sweating and stench.

ARCHER, JOHN, in *Biography*, an English physician, who practised in London in the reign of Charles the Second, author of a manual, "Every man his own physician," published in 1673; and though little noticed, it appears to have

been not void of ingenuity. At the end of his works, he boasts of three inventions, a vapour bath, of considerable efficacy in rheumatism, and various other diseases; an oven "which doth with a small faggot bake, distil, boil a pot, or stew, all with the same charge of fire, time, and labour;" and a chariot, so contrived, that the person sitting in it may move it at pleasure. It is not improbable that some of our modern inventors took hints from this book for their contrivances.

ARCHER, EDWARD, M.D. in *Biography*, was born in the borough of Southwark, in London, about the year 171^o. He received his medical education partly at Edinburgh, and partly at Leyden, at which latter place he graduated in the year 1746, and gave for his thesis a dissertation *De Scorbuto*. In the year 1748 he was elected physician to the small-pox hospital in Cold Bath Fields, in the place of Dr. Poole, the first physician to that institution; and in 1752 he was admitted licentiate of the college of physicians, London. In the year 1782, the committee of the small-pox hospital, consisting of thirteen of the governors, prevailed on him to suffer a whole length portrait of him to be painted by Mr. Pine, for which they paid one hundred guineas, and placed it in the court-room as a mark of their respect, and of the high opinion they entertained of his abilities, and of his zeal for the institution. This, though he then accepted, yet he was mindful to return it; and therefore ordered by his will, that each of the contributors should be paid back the money they had advanced, with interest to the time of its being repaid. He also left 500*l.* to the hospital, where he resided to the time of his death, which happened on the 28th of April 1789, having now been physician to the institution forty-one years.

He was of an humane and benevolent disposition, and possessing an ample fortune, was never solicitous about practice; and during the latter part of his life, entirely declined all business, excepting his attendance on the patients in the hospital. To this he might in part be inclined from his corpulence, and from the nature of the complaint, a dropsy in the chest, to which he at length fell a sacrifice, and which must make all motion particularly troublesome to him. He was a man of considerable learning, and had collected a magnificent and valuable library. This was sold a few months after his death by Messrs. Leigh and Sotheby. He was buried at Woodford in Essex.

ARCHERS, a kind of militia or soldiery, armed with bows and arrows. The word is formed of *arcus*, a bow; whence *arcuarius*, and even *arquis*, and *arquites*, as they are also denominated in the corrupt state of the Latin tongue.

Archers were much employed in former times; but they are now laid aside, excepting in Turkey, and some of the eastern countries; where there are companies of *archers* still subsisting in their armies; and with which they did terrible execution at the battle of Lepanto. As an amusing exercise and trial of skill, the occasional practice of archery is still continued in many parts of Europe, and even in our own country.

The name archer is still retained even where the thing is lost: thus in France, the officers who attend the lieutenants de police, and provosts, to make captures, seizures, arrests, &c. are called archers; though their arms be only halberds or carabines.—In this sense they say, the archers of the *grand prevot de l'hotel*; of the *prevot des marchands*; the city *archers*; the *archers du guet*, or of the watch, &c.—Small parties of archers, called also *gens de marcheuffee*, have been employed to patrol the great roads, to secure them against robbers.—The carriages of Lyons, &c. were always escorted

by a party of archers. To the diligence of these archers, or marshal's men, it has been partly owing, that persons have travelled in all parts of France in the utmost security; and that there have been fewer robberies on the highway in that whole kingdom in a year, than about London in a week. They have also their *archers des pauvres*, archers of the poor; whose office it is to seize such beggars as they find in the streets, and carry them to the hospitals.

ARCHERY, the art or exercise of shooting with bow and arrow.

Among the nations of antiquity, the bow was a principal implement of war. Its use may be traced to the very earliest times, and followed in the history of almost every country. In this article, however, we shall principally confine ourselves to the practice of archery in England; where it was once carried to a degree of perfection that it is even yet unrivalled.

Our ancestors used the bow for a double purpose: in time of war it was a dreadful instrument of slaughter; and in peace an object of amusement. That both the Anglo-Saxons and the Danes were well acquainted with its use, is certain; and they must have derived their knowledge of it at an early period; as the Scandinavian seals, when praising the heroes of their country, enumerate among their acquirements a superiority of skill in handling the bow. Among the Saxons and the Danes, however, it seems only to have been used for the purposes of food or pastime; and we are perhaps indebted to the Norman conquest for its introduction as a military weapon. The bow employed among the Saxons will be accurately described hereafter. That which the Normans used at the battle of Hasting was the arbalest or cross-bow; while no mention is made of archers on the side of Harold.

The exact time when shooting with the *Long* bow began is unsettled; and our chroniclers do not mention the use of archery as applied either to one bow or the other, till the death of king Richard the first in 1199, who was killed at the castle of Chalus by an arrow, said to have proceeded from a cross bow. From this time till that of Edward the second, our notices of archery are scanty; the king's *ballistarius*, or cross-bow-man, is often mentioned, and it is in this reign that we met with *sagittarius*, a term which perhaps has particular relation to the shooters with the long-bow. Many of the soldiers employed in the unsuccessful expedition against Scotland in 1323 were of this description, as well as those who are sent the next year to the relief of Aquitain. Under Edward III. the glory of the English long-bow was at its zenith; and that monarch appears to have been very anxious that its lustre should remain untarnished. In 1342 a precept was issued to the sherives of most counties in England, for providing 500 white bows and as many bundles of arrows, for the then intended war against France. And the king afterwards ordered a letter of complaint to be directed to the sherives of London, declaring that the skill in shooting with arrows was almost totally laid aside for the pursuit of various useless and unlawful games; and commanding them not only to prevent such idle practices in future, but to see that the leisure time upon holidays was spent in the recreations of archery. The battle of Cressy, in 1346, was attended by a circumstance that seems to have a particular reference to the use of the long-bow among the English. Previously to the battle, a shower of rain so slackened the strings of the Genoese cross-bows, that they became almost unserviceable; while the English were still capable of annoying their enemies with success. Both this victory, and that of Poitiers, ten years

afterwards, were chiefly ascribed by the English to their archers. The decisive victory of Hamilton, against the Scots, in 1402, was achieved by them entirely: and the earl of Douglas found to his cost, that the English arrows were so swift and strong, and so charged with so much force, that no armour could repel them. In 1403, at the battle of Shrewsbury, where Hotspur was slain, the archers on both sides did terrible execution: and the victory of Azincourt, in 1417, was entirely owing to their skill. Yet, notwithstanding the advantages which had evidently accrued to the English from the use of the long-bow, the French were still attached to the arbalest: for which reason Henry V., as duke of Normandy, confirmed the charters and privileges of the habillaris, who had been long established as a fraternity at Rouen. Under Edward IV. an ordinance was made, that every Englishman and Irishman dwelling in England, should have a bow of his own height, to be made of yew, wych, hazel, ash, or auburne, or any other reasonable tree according to their power. Butts, also, or mounds of earth, as marks, were directed to be made in every township, and the inhabitants to practise archery, under certain penalties. In the fourteenth year of the same king, it appears by Rym's *Fædera*, that one thousand archers were to be sent to the duke of Burgundy, whose pay is settled at six-pence a day: a circumstance, which, considering the value of money at that time, proves very strongly the great estimation in which English archers were still held: and even afterwards, when the use of what we now call *Artillery* gained ground, that of the bow and arrow were by no means neglected. In the 19th of Henry VII. and the 6th and 25th of Henry VIII. the use of the cross-bow was entirely forbidden, and by the last-mentioned statute a penalty of ten pounds was to be inflicted on every one in whose house a cross-bow might be found. Other statutes, in the early part of Henry's reign, afforded great encouragement to archery with the long bow. One in his third year directs that every father shall provide a bow and two arrows for his son, when he shall be seven years old: and another was enacted in his 33d year to reduce the price of bows. Edward VI., as we learn from his own journal, was fond of archery; and in the succeeding reign, the statutes of Henry VIII. for its promotion were much commended, with directions to enforce them. Under Elizabeth, James, and Charles I. other statutes were ordained. In 1566 the price of bows was again regulated; and in 1571 it was enacted, that bow staves should be brought from the Hanse towns and the eastward. Ten years after this, a society of archers existed in London, who, from the same which Arthur, elder brother to Henry VIII., had acquired at the long bow, were termed prince Arthur's knights. John Lyon, who founded Harrow school in 1590, two years before his death, drew up rules for its direction, whereby the amusements of the scholars were confined to "driving a top, tossing a hand ball, running, and shooting;" the last mentioned diversion is in a manner insisted on by the founder, who requires all parents to furnish their children with "bow-strings, shafts, and brettlers, to exercise shooting." A silver arrow used, till within these few years, to be shot for by the young gentlemen of Harrow school.

The last time the legislature interfered for the protection of archery, seems to have been in 1633, when Charles I. issued a commission for preventing the fields near London being so enclosed as "to interrupt the necessary and profitable exercise of shooting;" as also to lower the mounds where they prevented the view from one mark to another. The same commission directs that bridges should be thrown

over the dikes, and that all shooting marks which had been removed should be restored. During the grand rebellion, the practice of archery seems to have received no encouragement, but rather to have fallen into disrepute. Sir William Davenant, in a mock poem, entitled "the long vacation in London," describes the attorneys and professors as making matches in Finsbury Fields:

"With loynes in canvas bow-case tied,
Where arrows stick with mickle pride;
Like ghosts of Adam Bell and Clymme,
Sol sets for fear they'll shoot at him."

Adam Bell and Clym of the Clough were noted outlaws, whose skill in archery rendered them as famous in the north of England, as Robin Hood and his contemporaries were in the midland counties. In 1676, Catharine of Portugal, queen of Charles II., by the contributions of Sir Edward Hungerford and others, presented a silver badge, weighing 25 ounces, to the marshal of the archers' fraternity, on which was represented an archer drawing the string of a long-bow (in the proper manner) to his ear; with the following inscription: "Reginæ Catharinæ Sagittarii." The supporters, two bowmen with the arms of England and Portugal. In 1682, there was a most magnificent cavalcade and entertainment given by the archers of Finsbury. Charles II. was present on this occasion, but the day being rainy, he was obliged soon to leave the field. Archery had by this time degenerated. From the glory of British warriors, it dwindled to a mere manly recreation; and the very name of archer seemed forgotten, till, in 1753, targets were erected in Finsbury-fields, during the Easter and Whitsun holidays, when the best shooter was stiled captain for the ensuing year, and the second, lieutenant. Of the original members of this society, there were only two remaining when Mr. Barrington compiled his observations in the *Archæologia*. It is now incorporated with the archers' division of the honourable the Artillery Company.

Archery, with the long bow, continues to be used as a manly exercise by the inhabitants of Geneva, and in many parts of Flanders; nor is it totally neglected in Great Britain. The most noted society of this kind, now existing, is the Royal Company of Archers in Scotland, who arose about the time of James I. During the last century, in England, many smaller societies had their origin, which have now dwindled. The chief that remain are the Archers' division of the Artillery Company, the Toxophilites, and the Kentish bowmen.

How effectual the long-bow must have been before the use of fire-arms, need hardly be suggested; and the neglect into which it occasionally fell must be solely attributed to the length of time that was required to train an expert archer, of which the preambles to many of our statutes are sufficient evidence. Why it continued in estimation so long after the use of gunpowder, will excite no astonishment in those who remember, that, till the last century, muskets were among the unwieldiest instruments of war; they were never used without a rest, had no bayonets, and could be discharged not near so frequently as at present. Strutt's *Sports and Pastimes*. *Archæol.* vol. vii. p. 46, &c. Henry's *Hist. Brit.* Ellis's *Hist. of Shoreditch*. See *ARROW*, *ARTILLERY*, and *BOW*.

ARCHERY, in our *Ancient Customs*, a service of keeping a bow for the use of the lord to defend his castle.

ARCHES, or *Court of ARCHES*. See *COURT of Arches*.

ARCHES, in *Heraldry*, are borne in coat-armour, both double and single; and they are drawn as springing from, or supported by, pillars.

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ARCHES, among *Navigators*, is particularly used for the Archipelago.

ARCHET, *French*; *ARCO*, *Ital.*; the bow of a violin, tenor, or violoncello. In the history of music, great pains were taken in tracing the origin of this powerful engine in the hand of a great artist, which seems to have been utterly unknown to the ancients, as it can only be traced up to the middle ages; nor was it used with much dexterity till the seventeenth century. In music for the violin, tenor, or bass, after the word *Pizzicato* occurs, the strings are to be pinched or thrummed, till the bow is ordered to be resumed, by the words *con arco*, with the bow. See *BOW*.

ARCHETYPE, *ARCHETYPUS*, compounded of *αρχη*, *beginning*, and *τυπος*, *type*, the first pattern or model by which any work is formed, or which is copied after, to make another like it. In this sense the word coincides with original, or prototype; and stands opposed to copy.

Among minters, &c. archetype is peculiarly used for the standard or original weight by which the other weights are to be adjusted and examined.

Philosophers, particularly the Platonists, talk of an *archetypal* world; meaning the world, such as it existed in the Divine Mind, or in the idea of God, before the visible creation.

ARCHEUNUCH, *ARCHIEUNUCHUS*, the chief of the eunuchs. The archeunuch was one of the principal officers in Constantinople under the Greek emperors.

ARCHEUS, an obscure term, used chiefly among the *Ancient Chemists*, to express some occult principle of life and motion, the cause of all the effects which we observe in nature; derived from *αρχη*, *principle*. As the chemists differ in their ideas of a vital cause, the term archeus becomes applied to very different things; though most of them conceive it of the nature of fire. Some use archeus to denote the fire lodged in the center of the earth, to which they ascribe the generation of metals and minerals; and which they believe to be the principle of life in vegetables. Others by the word archeus mean a certain universal spirit diffused throughout the whole creation, the active cause of all the phenomena in nature. Others, instead of archeus, choose to call this the *anima mundi*; and others, the *Vulcan* or *heat* of the earth. They add, that all bodies have their share of this archeus; and that when this is corrupted, it produces diseases which they call *archeal diseases*. They likewise attribute ideas to it; which for this reason they call *archeal ideas*. Helmont is a great asserter of the dogma of an archeus. It is likewise used to signify that peculiar fluid among the vegetable classes, which determines every particular plant to its odour, taste, and other qualities.

ARCHI, in *Ancient Geography*, a town of Palestine, in the half tribe of Manasseh, beyond Jordan. *Josh.* c. xvi. 2.

ARCHI, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Abruzzo citra.

ARCHIAC, a town of France, in the department of the Lower Charente, and chief place of a canton in the district of Jonzac, five leagues south of Saintes. The place contains 1533, and the canton 10,906 inhabitants: the territory includes 180 kilometres and 16 communes. *W. long.* 0° 39', *N. lat.* 45° 34'.

ARCHIACOLYTHUS, an ancient dignity in cathedral churches; the ministers whereof were divided into four orders, or degrees, viz. priests, deacons, subdeacons, and acolythi; each of which had their chiefs. The chief of the acolythi was called *archiacolythus*. Du-Cange.

ARCHIAS, *AULUS LICINIUS*, in *Biography*, a Greek poet,

poet, lived about the year 60 before Christ, and is better known by the eloquent oration pronounced by Cicero for vindicating his right to the citizenship of Rome, than by the fragments of his works now extant. Cicero (pro Archia, apud oper. t. v. p. 397. ed. Olivet.) informs us, that he was a native of Antioch, and that his poetical talents, even in his youth, were generally acknowledged and admired in all the Greek cities of Asia and Europe which he visited. At Rome, where he arrived under the Consulships of Marius and Catullus, about the year before Christ 102, he was first received by the Lucullan family, and afterward highly favoured by the Metelli, Catuli, Crassi, and other persons of the most distinguished rank and character. Cicero speaks in terms of high commendation of his powers, which probably consisted rather in facility and copiousness of versifying, than in the other superior qualities of a poet; and he says, that by previous study and meditation, his performances were equal to those of antiquity. Archias wrote a poem on the Cimbric war, and began another on the consulate of Cicero, which was left unfinished. Some of his epigrams, now extant, are preserved in the "Anthologia."

ARCHIATER. ARCHIATRUS, formed of αρχη, *principium*, chief, and ιατρος, *medicus*, a physician, properly denotes the chief physician of a prince who retains several.

On the real signification of the term, or on the office and designation of the Archiater, authors are not agreed: some, as Hieronimus Mercurialis, considering it as a title given to the physician to the emperor or prince; others, as Aleciatus, Meibomius, &c. as belonging to the principal physician in the country, who had some power or authority over the other physicians. It is remarkable that the word does not occur in Pliny, though he frequently mentions physicians both of his own and of earlier times, some of whom were said to have been dignified with the title; and that Galen, who had the care of the health of Marcus Aurelius and his sons, is no where called by it. Perhaps, as Le Clerc conjectures, "Histoire de Médecine," p. 59; the office did not exist until after their time: for though, he observes, we find the title affixed to the works of writers who lived anterior to the time of Pliny, it may be that the copies we are in possession of were written much later, and the transcribers may have honoured the authors with this title, to enhance the value of their works, and increase the sale of their manuscripts. However this may be, the office was under the later emperors held in great honour, and its authority and privileges sanctioned by the laws. Le Clerc, who has written a long dissertation on the subject, "Hist. de Méd." p. 583, cites several laws concerning them: by these we find they had salaries appointed them, which were paid by the prince, or by the cities or provinces where they were established. They were exempt from all taxes through the whole of the Roman empire; their persons were protected; they were not obliged to entertain soldiers, &c. On the other hand, the Archiaters, not immediately in the service of the court, were obliged to give assistance to all sick persons indiscriminately, without exacting any fee for their attendance. They were also frequently ennobled and made counsellors of state, an office or dignity not unfrequently at this present time bestowed by many of the princes of Europe upon their physicians. Dr. Dimisdale, who went to Russia in the year 1768, to inoculate the late empress and the grand duke, was made physician and actual counsellor of state to her imperial majesty, and baron of the whole Russian empire.

ARCHIDAMUS, the son and successor of Agesilaus the Great, king of Sparta, commanded the Spartan army during the life of his father, before Christ 367, and obtained

a victory over the Arcadians, without the loss of a single Lacedæmonian, whence this was called "the tearless battle." When Epaminondas afterwards attacked Sparta, he obliged the Theban general to retire. He succeeded his father in the throne in the year before Christ 361; and, in the sacred war, succoured the Phœceans. To a haughty message received from Philip of Mædon, who was elated with his success, Archidamus replied, that "if he would measure his shadow, he would find it no longer than before:" and when he was asked how far the dominion of Sparta extended? his answer (indicating more his magnanimity than his sense of justice) was, "as far as they can stretch their lances." His life was prematurely terminated in a combat near the city of Mandonium in Italy, between the Messapians and Tarentines, to whose assistance he was deputed by a public decree of his country, after a reign of fifteen years; and his character was distinguished by valour and public spirit. His statue was erected in the temple of Jupiter Olympius, an honour which none of the Spartan kings had enjoyed except himself, and which Pausanias supposes was granted to him because he died fighting against the Barbarians, and did not receive those sepulchral honours which had been given to all his predecessors. He was succeeded by his son Agis. Anc. Un. Hist. vol. v. p. 483.

ARCHIDAPIFER, or chief sewer, is a great officer of the empire.

The elector of Bavaria is archidapifer.—The palatine of the Rhine at one time pretended this office was annexed to his palatinate, but he has since desisted. At the peace of Baden, the office was fully restored to Bavaria. At the coronation of the emperor he carries before him the monde of the empire, which by virtue of his office he also bears in his arms, ranks next to Bohemia, places on the imperial table the silver dishes, and serves up the first course.

ARCHIDIUM, in *Ancient Geography*, a town of the island of Crete, according to Pausanias, in *Arcad*.

ARCHIDONA, in *Geography*, a town of Spain, in the province of Andalusia, with an ancient castle, two leagues east of Antequera.—Also, a town of South America, in Peru, built by the Spaniards, in the province of Canela.

ARCHIEROSYNES, in the *Grecian Antiquity*, a high-priest vested with authority over the rest of the priests, and appointed to execute the more sacred and mysterious rites of religion.

ARCHIGALLUS, in *Antiquity*, the high-priest of Cybele, or the chief of the eunuch-priests of that goddess, called Galli. This officer was always chosen from among the most distinguished families.

ARCHIGENES APAMEUS, so called from Apamea, the place of his birth, in *Biography*, a physician of eminence in the time of the emperors Donatian and Trajan. Galen speaks of him as deserving high credit for his diligence and ingenuity, and cites several of his works with commendation. Haller gives an epitome of his doctrines, and though he commends his practice in the cure of many diseases, yet, from his fondness for amulets and charms, places him among the empirics. That he was in high repute, however, cannot be doubted, Juvenal having mentioned him several times in his satires, and always with honour. "Ocyus Archygenem quære, atque eme quod Mithridates composuit."

Various fragments of his writings exist in the collections of Aetius and Amida. Besides his writings on the subject of pharmacy, he also wrote treatises on local affections, on the cure of chronic diseases, on the nature and types of fevers, on pulses, &c. Le Clerc Hist. de la Méd.

ARCHIGERONTES, in *Antiquity*, the chiefs or masters

masters of the several companies of artificers at Alexandria.

Some have mistaken the archigerontes for the arch-priests, appointed to take the confessions of those who were condemned to the mines.

ARCHIGUBERNUS, ARCHIGUBERNETA, or ARCHIGUBERNITES, in *Antiquity*, the commander of the imperial ship, or that which the emperor was aboard of.

Some have confounded the office of archigubernus with that of *praefectus classis*, or admiral, but the former was under the command of the latter.

Potter takes the proper office of the archiguberneta to have been to manage the marine affairs, to provide commodious harbours, and order all things relating to the sailing of the fleet, except what related to war. Vid. Diod. Sicul. 26. 51.

ARCHIL, *Argol*, *Archilla*, *Rocella*, *Lichen Rocella* of Linnæus, or *Orseille*, is a moss of a lightish or dark grey colour, which grows on the rocks in many parts of the Archipelago, and in the Canary and Cape de Verd islands; and, according to Linnæus's account, on the Western Coast of England. It belongs to the third of Dillenius's genus of *coralloides*, and to the *lichenes fruticulosi* of Linnæus. This moss grows upright, partly in single, partly in double stems, which are about two inches in height; when it is old, these stems are crowned with a button, sometimes round and sometimes of a flat form, which Tournefort very properly compares to the excrescences on the arms of the Sepia. The dark red paste formed of this moss has in commerce the same name of Archil or Argol, and is much used in dyeing; that well-known substance called Lacmus, or Litmus, is also made of it. See LITMUS. Those who prepare it for the use of the dyer grind it betwixt stones, so as to bruise it thoroughly without reducing it to powder, and then moisten it occasionally with strong spirit of urine, or urine itself, mixed with quicklime. Alkalies extract a violet colour. In a few days it acquires a purplish red, and at length a blue colour. The dyers seldom use this drug by itself, because of its dearth and the perishableness of its beauty; but they chiefly employ it to give a bloom to other colours, as pinks, &c. and this is done by passing the dyed cloth, or silk, through hot water lightly impregnated with the archil. However, the bloom thus communicated soon decays upon being exposed to the air; though, M. Hellot says, that by adding a small quantity of the solution of tin, the colour obtained from this drug changes towards a scarlet, and gives a durable dye. Prepared archil will readily yield its colour to water, to volatile spirits, and to spirit of wine; and it is accordingly used to colour the spirits of thermometers; but being confined from the air, the spirits lose their colour, and as M. l'abbé Nollet observes, regain it upon being exposed to the air. He repeated the experiment several times with success. A solution of archil in water gives a durable stain of a beautiful violet or purplish blue colour to marble. M. du Fay informs us that he has seen pieces of marble stained with it, that preserved their colour for two years, without any sensible change. It sinks deep into the marble, and makes it more brittle. The dye yielded by this substance, it is supposed, was known as early as the days of Theophrastus. Theophrastus, Dioscorides, and Pliny, give the name of "Phycos thalassion" or "pontion," to a moss which grew on the rocks of different islands, and particularly on those of Crete or Candia. This moss had, in their time, been long used for dyeing wool, and the colour it gave, when fresh, was so beautiful, that it excelled the ancient purple, which was not red, as many suppose, but violet.

Pliny says, that with this substance the dyers gave the ground or first tint to those cloths which they intended to dye with the costly purple. Thus Hardouin and others understand the words "conchyliis subternitur," which the French dyers express by the phrase "donner le pied." This "phycos thalassion" is supposed by Dillenius to be our argol; for at present, no species is known which communicates so excellent a colour, and which corresponds so nearly with the description of Theophrastus. Besides, it is still collected in the Grecian islands, and it appears that it has been used there since the earliest ages. Tournefort found this moss in the island AMORGOS, now called Morgo; and in his time it was sent to England and Alexandria, at the rate of 10 six dollars per hundred weight; and he adds, that it was common in the other islands. He also shews, from Sidas, Julius Pollux, and other ancient writers, that this island was once celebrated for a kind of red linens, which in commerce had the name of the island; and he conjectures that it was dyed with this moss. Hence Beckman (*Hist. Inventions*, vol. i. p. 61.) concludes, that our argol was not unknown to the ancient Grecians; and he apprehends, that the Europeans, and first of all the Florentines, were made acquainted with this dye-stuff, and its use, in the beginning of the fourteenth century. To this purpose he observes, that among the oldest and principal Florentine families is that known under the name of the Oricellarii, Rucellarii, or Rucellai; one of whom, in the year 1300, carried on a great trade in the Levant, and returning with great wealth to Florence, first made known in Europe, the art of dyeing with argol; and from this useful invention the family received the name of Oricellarii; from which, in process of time, was formed Rucellai. After that period, the Italians procured argol from the Levant for themselves, and afterwards for all Europe. But since the discovery of the Canary islands, about the end of the fourteenth or beginning of the fifteenth century, the greater part of this substance has been procured from them. In the islands of Canary, Teneriffe, and Palma, this moss belongs to the crown; and in 1730, it was let by the King of Spain for 1500 piastras. In the rest of the islands it belongs to private proprietors, who cause it to be collected on their own account. About the end of the year 1730, the captain of an English vessel brought a bag of argol from the Cape de Verd islands to Santa Cruz, by way of trial; and discovering his secret to some Spanish and Genoese merchants, they fitted out a ship in 1731 for these islands, whence they brought it in large quantities. The argol of the Cape de Verd island appears larger, richer, and longer than that of the Canaries, which, perhaps, is owing to its not being collected every year. Adanson, in 1749, found the greater part of the rocks in Magdalen island, near Senegal, covered with this moss. Although most of our argol is at present procured from the Canary and Cape de Verd islands, a considerable quantity is also brought from the Levant, from Sicily, and from the coast of Barbary; and some years ago the English merchants at Leghorn, caused it to be collected in the island of Elba, and paid for it a high price. Our dyers do not purchase raw argol, but a paste made of it, which the French call "orseille en pate." The preparation of it was for a long time kept secret by the Florentines: the person who is supposed to have first made it known was Roletti, a dyer at Florence. Some information concerning it was afterwards communicated by Imperati, and Micheli the botanist. In latter times this art has been much practised in France, England, and Holland. Many druggists, instead of keeping this paste in a moist state with urine, as they ought to do, suffer it to dry, and it has then the appearance

pearance of a dark violet-coloured earth, with some white spots interpersed in it. See *LITHIUS*.

Linnæus apprehends that there are several other common mosses from which valuable colours might be extracted. The French dyers use a crustaceous moss growing upon rocks in Auvergne, and prepared with lime and mine, as a succedaneum to the Canary archil. This Archil, called "Orseille de terre," and "Orseille d' Auvergne," contains fewer and weaker colouring particles. It is the *lichen parellus* of Linnæus, and is distinguished from the *rocella* by its figure, as it grows only in a thin rind on the rocks. It is collected in Auvergne on rocks of granite and volcanic productions, and in some parts of Languedoc; the greater part of it comes from St. Flour. The use of it is very trifling; however the Dutch purchase it to make their lacmus or litmus, on account of its low price. This moss has also been found in Northumberland; but it is not collected there for any purpose.

Archil is made in Corsica, at Lyons, &c. The archil of the Canaries is said to be less charged with lime. Dr. Lewis's ed. of Neumann's Chem. Works, p. 438. Phil. Trans. vol. li. p. 652. Raii Hist. Plant. i. p. 74. Micheli Nova Plant. p. 78. See *LICHEN*.

ARCHILE, in *Ancient Geography*, a city of Africa, in the Pentapolis; situate, according to Ptolemy, at some distance from the coast.

ARCHILOCHIAN, a term in *Poetry*, applied to a sort of verses, whereof *Archilochus* was the inventor.

These consist of seven feet; the four first whereof are ordinarily dactyls, though sometimes spondee; the three last trochees: for instance:

"Solvitur acris hyems grata vice veris et Favoni." HOR. It is usual to mix iambic verses of six feet, abating a syllable, with Archilochian verses; this Horace himself has done in the ode now cited.

These verses are called dactylic, on account of the dactyls at the beginning.

ARCHILOCHUS, in *Biography*, a Greek poet and musician, was the son of Telecles, a person of high rank, and a native of Paros, one of the Cyclades. According to Herodotus, he was contemporary with Candaules and Gyges, kings of Lydia, who flourished about the fourteenth olympiad or 724 years before Christ. Blair refers him to the year before Christ 686, and Priestley to the year 660. To him is ascribed the invention of the iambic verse, and his reputation ranked so high amongst the Greeks and Romans, that Plutarch says of him, that there is no bard of antiquity by whom the two arts of poetry and music have been so much advanced as by Archilochus. According to this author, he was the inventor of dramatic melody, or the melody used in declamation, or that which, in modern language, might be termed "recitative to strict measure," such as the voice-part observes in many modern pieces of accompanied recitative; and from him we learn, that he performed the music to his iambic verses in two different ways; reciting some of them to a partial accompaniment, and singing others, while instruments performed the same notes as the voice; and this, it is said, was the method which the tragic poets afterwards adopted. Plutarch also attributes to Archilochus, the rhythmopœia of trimeter iambs; the sudden transition from one rhythm to another of a different time, as from iambic rhythm or triple time, to dactylic or common time; and the manner of accompanying those irregular measures upon the lyre. Accordingly, if Archilochus was the first author of this mixture or transition from one rhythm to another, he might, with propriety, be styled the inventor

of lyric poetry, which required this mixture, and which, after his time, became a species of versification wholly distinct from heroic. To Archilochus is likewise ascribed the invention of epodes, considered as denoting small lyric poems, composed of trimeter iambs, of six feet, and dimeters of four feet, alternately; such are those of the fifth book of the odes of Horace. Archilochus is generally ranked among the first victors of the Pythian games; and Pindar says, that he wrote hymns in praise of the gods and heroes. One of them in praise of Hercules, gained for him the acclamations of all Greece; for he sung it in full assembly of the Olympic games, and received in recompence from the judges, the crown of victory. This hymn, or ode, was afterwards sung in honour of every victor at Olympia, who had no poet to celebrate his particular exploits. The names of Homer, and of Archilochus, were equally revered and celebrated in Greece, as the two most excellent poets produced by the nation. Cicero ranks him with poets of the first class, and in his "Epistles," (xi. l. 16. ad Atticum) he says, that the Grammarian Aristophanes used to say, that the longest poem of Archilochus was, in his estimation, the most excellent. Horace professes in his satires, to be an imitator of the Grecian bard, as to his style and manner, but not in his malignity; and he says, (Art. Poet.) that he was armed by the violence of his resentment with iambs;

"Archilochum proprio rabies armavit iambo."

Ovid likewise refers to Archilochus: Paternulus and Quintilian bestow great praises on his poetry. The latter (l. x. c. 1.) says of him, that he had an uncommon force of expression, abounding with bold thoughts, and short but keen and piercing strokes, and that his style was singularly strong and nervous. The estimation in which he was held among the Greeks may be inferred from the conduct of the Delphian oracle, which expelled from the temple of Apollo, Cerax of Naxos, by whom he was killed, though he did it in open war. His satires, however, were not only unjustifiably severe, but offensively licentious and indecent; and on this account his poems were prohibited at Sparta, as being more likely to corrupt the hearts and manners of young people, than to be useful in cultivating their understandings. Of the force of his satires, the following instance is frequently alluded to by the ancients. Lyeambes, who had promised him his daughter in marriage, and who had violated his contract, together with his family, was rendered so infamous by a torrent of abuse and detamation, that he terminated his life by the halter, and one, if not all of his daughters, followed his example. Indeed, the "rage of Archilochus" was proverbial in antiquity, which compared the provoking of this satyrist to the treading upon a serpent. In the army, into which he entered, Archilochus incurred a degree of ignominy, which probably contributed to imbitter the resentment, and malignity of his writings. When he saved his life by his cowardly retreat in the first battle in which he was engaged, he alleged in excuse of his dastardly conduct; "I have lost my buckler, but I have saved my life; and it is much more easy to get a new buckler, than a new existence." Some fragments of his writings may be found in the "Poetæ Græcæ" Genev. 1606 and 1614, 2 vol. folio. Nouv. Dict. Histor. Burney's Hist. Music, vol. i. p. 363.

ARCHILEUTO, or *ARCHILUTE*, a large lute, differing little from the *Theorbo*, on which thorough-bass used to be played in accompanying the voice. At the beginning of the last century, it was the favourite instrument all over Europe. *Arrigonini*, a famous lutenist, was employed in all Handel's early operas. And the office of lutenist remained till

till the last century in his majesty's chapel at St. James's. Gilier was the last who occupied the place and performed the duty.

ARCHIMAGUS, in the *Ancient Persian Religion*, the chief priest or head of the order of magi. The archimagus answered to the high-priest among the Jews, or the pope now among the Romanists, being the head of the whole religion. The archimagus resided in the fire temple, a place held in the same veneration among them as the temple of Mecca among the Mahometans, every person of the sect being under a kind of obligation to make a pilgrimage to it once in their lives. Zoroaster is ranked as the first archimagus, and he erected the first temple in the city of Balch. Here it remained till the seventh century, when the followers of Zoroaster, being driven by the Mahometans into Carmania, or Kerman, a southern province of Persia, another building of the same kind was raised, and there it hath continued to this day. The fire temple at Balch was rebuilt by Darius Hystaspis, with a grandeur suitable to its dignity, as it was the patriarchal temple of the sect; and from the name of its restorer it was afterwards called "Anzur Gultasp," i. e. the fire temple of Darius Hystaspis. In order to preserve its reputation, he assumed the office and title of archimagus, and as Porphyry informs us, he gave orders before his death, that among his other titles it should be engraven on his monument, that he was "master of the Magians," which plainly implies that he bore this office among them. From hence it seems to have proceeded, that the kings of Persia were ever after regarded as of the sacerdotal tribe, and were always initiated into the sacred order of the Magians, before they were inaugurated into the kingdom. *Prod. Con.* vol. i. p. 315. 322.

ARCHIMANDRITE, the superior of a monastery; amounting to what we now call **ABBOT**.

Covarruvias observes, that the word literally denotes the chief or leader of a flock; in which sense it may be applied to any ecclesiastical superior, and accordingly we find the name sometimes attributed to archbishops. But among the Greeks, by whom it is chiefly used, it is always restrained to the chief of an abbey. According to father Simon, *mandrite* is a Syriac term, signifying a solitary monk; and consequently Archimandrite is the chief of monks of this description. In the Greek church, the archimandrite is the second dignity under the patriarch.

ARCHIMEDES, in *Biography*, one of the most celebrated mathematicians of antiquity, was born at Syracuse, according to Torelli, in the second year of the 123d olympiad, corresponding to the 287th year before Christ; or, according to Rivaltus, who has taken considerable pains in ascertaining the true æra of his birth, the second year of the 122d olympiad, answering to the 291st year before Christ. If we may rely on the authority of Tzetzes, he lived 75 years; and Blair in his chronology, refers his death to the first year of the 142d olympiad, or the 212th year before Christ. Plutarch informs us, that he was nearly related, by his father, to Hiero the Syracusan king, with whom he lived in habits of the most intimate friendship and intercourse: but his mother was of obscure origin; and this circumstance may probably account for the degrading terms "humilem homunculum," which Cicero applies to him in the fifth book of his *Tusculan Questions*, *Oper. t. ii. p. 474.* ed. Olivet. Unallured by those prospects of preferment which his connection with Hiero might have presented, Archimedes devoted himself, with uncommon assiduity and singular success, to the study of geometry, in his youth; and in his maturer years he travelled into Egypt, whither the Greeks generally resorted in the pursuit of science. After an absence of several years,

which he spent in the society of Conon, and other eminent men, and during which time he exhibited very promising indications of his future fame, he returned to his own country, where he indefatigably prosecuted that course of application to mathematical and mechanical sciences, which led to the disquisitions and discoveries recorded in his works. Such, indeed, were the ardour and intenseness of his application, that he prosecuted his studies, to the neglect of both food and sleep, and improved the minutest circumstance that occurred into an occasion of making very important and useful discoveries. At the bath, it is said, he frequently drew geometrical figures in the ashes, or when, according to the custom, he was anointed, upon his own body. Of the ardour of his mind in the pursuit of science an instance occurs under the article *Hiero's Crown*; and was also manifest in his well-known declaration, pronounced in consequence of his accurate acquaintance with the powers of the lever, "Δος μοι σταυ, και Ινυ η γη κινησεται," i. e. "Give me a place upon which to stand, and I will move the earth." Such was the pleasure he derived from having discovered the proportion between the sphere and its circumscribed cylinder, that as a memorial of this discovery, he requested his friends to place upon his tomb a cylinder containing a sphere, with an inscription expressing the proportion of the one to the other. Cicero, when he was questor in Sicily, about 140 years after the death of Archimedes, discovered this monument in a neglected state, and over-run with briars and brambles, which he ordered to be cleared away. *Vid. Opera ubi supra.* As an evidence to Hiero of the astonishing effect of mechanical powers, Archimedes is said to have drawn towards him, by means of ropes and pulleys, a galley manned and loaded, which lay on the shore. But his mechanical knowledge was applied to more substantial use, at the time when Syracuse was besieged by the consul Marcellus; for he thus contrived to arrest the efforts of the besiegers for eight months. Plutarch (in Marcell.) and Livy (l. xxiv. c. 34.) inform us, that, whether the vessels of the enemy were nearer to the walls of the city, or more distant from them, Archimedes annoyed them. When they approached the rampart, he suspended long beams, which probably acted like levers, and struck the gallees with a force that sunk them; by means of grapping hooks at the extremities of other levers, he raised up vessels in the air, and then dashed them to pieces against the walls or projecting rocks. Whilst they were more remote, he used instruments which threw large stones, that demolished the ships or the machines employed in the siege. For the use he made of his burning mirrors, see *BURNING-Glass*.

Besides other inventions which Diodorus Siculus (l. v.) ascribes to Archimedes, he mentions that of the cochleon, or serew pump, which he communicated to the Egyptians. Livy also (l. xxiv. c. 23) records his distinguished excellence as an observer of the heavenly bodies and his talent for the contrivance and construction of warlike machines. His ingenuity in the solution of problems was, in Cicero's time, become proverbial, for in a letter to Atticus (l. xiii. ep. 28.), he alludes to the "προβλημα Αρχιμηδειον," or "Archimedian problem," as one that was of singularly difficult solution. His machine for exhibiting the motions of the celestial bodies is either referred to or more expressly mentioned by the Latin poets. To this purpose Silius Italicus (l. xiv. v. 341. p. 717. ed. Drakenb.) extols him:

"Vir fuit Ilhniaciis-deus immortalis colonis,
Ingenio facile ante alios telluris alumnos,
Nudus opum; sed cui cælum terræque patrent."

Claudian also, in his epigram on this invention of Archimedes, expresses himself in the following strong terms:

"Jupiter,

" Jupiter, in parvo cum cerneret æthera vitro," &c.
In English thus :

" When in a glass's narrow sphere confin'd,
Jove saw the fabric of th' Almighty mind,
He smil'd and said ; ' Can mortals' art alone
Our heavenly labours mimic with their own ?
The Syracusan's brittle work contains
Th' eternal law that through all nature reigns.
Fram'd by his art, see stars unnumber'd hum,
And in their courses rolling orbs return ;
His sun through various signs describes the year,
And every month his mimic moons appear.
Our rival's laws his little planets bind.
And rule their motions by a human mind.
Salmoneus could our thunder imitate :
But Archimedes can a world create.'

Ovid (Fall. vi. 277.) mentions the same machine :

" Arte Syracoliã suspensus in aëre clauso
Stat globus, immensã parva figura poli."

Plutarch (in Vit. Marcelli, Oper. t. ii. p. 307.) expressly says of Archimedes, after recounting the machines which he had employed during the siege of Syracuse, that in the construction of them " he gained the reputation of a man endowed with divine rather than human knowledge ;" but it is to be regretted that, as he adds, " no account of them was left in writing."

Amongst the various objects of mathematical speculation to which his attention and inventive faculties were directed, one of the principal was the mensuration of the conic sections. Unless we except the lunes of Hippocrates of Chios, he was the first who squared a curvilinear space : he also reduced the quadrature of the circle to the determination of the ratio between the diameter and the circumference ; and though unable to obtain the precise value of it, he assigned an useful approximation to it by the numeral calculation of the perimeters of the inscribed and circumscribed polygons. See CIRCLE, DIAMETER, and QUADRATURE. He determined the relation between the circle and ellipse ; and likewise attempted the hyperbola, though from the nature of the case he was not likely to succeed. He also found the proportion of the area of the spiral to that of the circumscribed circle, and that of their sectors ; he determined the relations of spheres, spheroids, and conoids to cylinders and cones, and of parabolas to rectilinear planes, whose quadratures were already known. In all his mathematical investigations, he imitated the example of his predecessor, Euclid ; and, like him, he was cautious in admitting any principles that were not strictly geometrical and unexceptionable.

No friend of science can forbear lamenting the premature death of this singularly eminent mathematician and philosopher, as well as the time and manner in which it happened. After he had been instrumental in protracting the siege of Syracuse for eight months, the city was at length taken by storm and devoted to the sword. Marcellus, indeed, respecting the character even of an enemy such as Archimedes was, had issued orders that his house and person should be inviolate ; but he was surpris'd and put to death, says Livy (l. xxxv. c. 31.), by a soldier who was ignorant of his person and character, while he was intent on figures which he had described in the dust, and was altogether negligent of his own safety. The account of the manner of his death given by Plutarch (ubi supra) is somewhat different. He says, that Archimedes being in his museum, was so absorbed in his attention to his diagram, that he was assaulted by one of the soldiers before he knew that the city was taken, and that he refused to accompany him to Marcellus till he had finished his problem, upon which the enraged soldier dispatched him with his sword. However this be, Marcellus,

it is said, lamented his death, paid respect to his memory by directing and superintending his funeral, and restrained the victorious army from offering any violence to his relations.

Of the numerous works of Archimedes many of them are lost, but the most valuable, as we have reason to believe, are preserved. Torelli has arranged and enumerated them in the following order : 1. " De Planorum Æquilibriis, liber primus, cum commentariis Eutocii Ascalonitæ." 2. " Quadratura Parabolæ." 3. " De Planorum Æquilibriis, liber secundus, cum commentariis Eutocii Ascalonitæ." 4. " De Sphæra et Cylindro, liber primus, cum commentariis Eutocii Ascalonitæ." 5. " De Sphæra et Cylindro, liber secundus, cum commentariis Eutocii Ascalonitæ." 6. " Circuli Dimensio, cum commentariis Eutocii Ascalonitæ." 7. " De Helicibus." 8. " De Conoidibus et Sphæroidibus, cum Torelli commentario, in Prop. 12." 9. " Arenarius." 10. " De iis quæ in humido vehuntur, liber primus." 11. " De iis quæ in humido vehuntur, liber secundus." 12. " Lemmata." 13. " Opera Mechanica, ut cujusque mentio ab antiquis scriptoribus facta est." These latter works, with the Author's descriptions of them, are lost ; they are as follow : 1. " An artificial sphere for exhibiting the celestial motions." 2. " Archimedes's method of investigating the mixture of gold and silver in Hiero's crown, mentioned by Vitruvius." 3. " His pneumatic and hydraulic engines, mentioned by Pzetztes, Pappus, and Testullian." 4. " Archimedes's screw, the structure and use of which are well known." 5. " The helix, by means of which, according to Athenæus, he launched a large ship belonging to Hiero." 6. " A singular kind of locket, the account of which is imperfect." 7. " The trispaston, by which large weights might be raised by a very small power." 8. " Various warlike machines, consisting of tormenta, balistæ, catapultæ, sagittarij, scorpiones, &c. which, according to Polybius, Livy, and Plutarch, were used in the defence of Syracuse." 9. " His burning-glasses, by the combination of which he is said to have set fire to the Roman ships."

When Constantinople was taken at the middle of the fifteenth century, such writings of Archimedes as exiled, together with the commentary of Eutocius, escaped the ravages of the conquerors, and were brought thence into Italy. Here they were found by the famous John Muller, better known by the appellation of Regiomontanus, who carried them into Germany, and they were soon afterwards, viz. in 1544, published in folio at Basil, in Greek and Latin, by Hervagius, with a preface by Thomas Gechauff. A Latin translation was published at Paris in 1577, by Pascalius Hemellus. An edition was published in folio, by Commandine at Venice, in 1588. The edition of Rivaltus, in Greek and Latin, in folio, with new demonstrations and notes, and a life of Archimedes, was published at Paris in 1615. At the close of this edition is annexed an account of the other works of Archimedes that have been lost. Maurolycus published an edition in folio, at Messina, in 1671 ; another by Borelli, was published at Palermo in 1685 ; and a Latin edition was published by Dr. Barrow in 4to. at London in 1675, with new illustrations and demonstrations. The last, most splendid and complete edition in folio, was printed at the Oxford press in 1792 ; this edition was prepared for the press by the learned Joseph Torelli of Verona, with a new Latin translation, Eutocius's commentary, with a preface and notes ; an account of the life and writings of Torelli, by Clemens Sibillati, is prefixed, and a large appendix is added consisting of two parts, the first being a commentary on the paper of Archimedes, relating to bodies floating in fluids, by the Rev. Abram Robertson of Christ-Church College Oxford, who had the whole care of this edition ;

and the second, a large collection of various readings in the MS. copies of Archimedes's works, preserved at Florence and Paris, collated with the edition of Basil. The works of Archimedes form a principal part of the valuable collection of Greek mathematicians, published in folio at Paris, in 1693, entitled "Mathematici veteres." Of distinct parts of the works of Archimedes we have various editions. The book "De dimensione circuli," was published in folio, at Paris, in 1561; at Leipzig, in 1602; and in octavo, at Oxford by Dr Wallis, in 1676; and in the third volume of Wallis's works, in 1699. This work, together with the book "De sphaera & cylindro," appeared at Paris in 1561; the book "De planis equiponderantibus," was published in quarto at Paris, in 1565; "De conoidibus et de spheroidibus," at Palermo, in 1685; "De iis quæ in humido natant, &c." with the commentary of Commandine, in quarto, at Bologna, in 1565; and the "Arenarius," by Wallis, at Oxford, octavo, in 1676; of which an English translation by G. Anderfon, was published in London, octavo, in 1784, with notes and illustrations. Torelli Pref. Rivalti Pref. Fabr. Bib. Græc. l. iii. c. 22. t. ii. p. 543, &c.

ARCHIMEDES'S *Screw*. See *SCREW of Archimedes*.

ARCHIMEDES'S *Burning-glass*. See *BURNING-glass*.

ARCHIMIME, ARCHIMIMUS, ἀρχιμιμῆς, and μιμιος, *mimic*, is the same thing in effect with archbuffoon or mimic.

The *archimimes*, among the Romans, were persons who imitated the manners, gestures, and speech, both of people living, and of those who were dead.

At first they were only employed on the theatre; but were afterwards admitted to their feasts, and at last to their funerals; where they walked after the corpse, counterfeiting the gestures and behaviour of the person who was carried to the funeral pile, as if he were still alive.

ARCHINARA, in *Ancient Geography*, a town of India, on the other side of the Ganges, according to Ptolemy.

ARCHIPELAGO, in *Geography*, a sea interrupted by a great number of islands.

The word is formed by corruption of *Ægeopelagus*, q. d. *Ægean sea*, which again is formed of Ἀργαίου Πελάγος, a name originally given it by the Greeks, but for what reason is not agreed on. See *ÆGEAN Sea*.

The most celebrated Archipelago, and that to which the name used to be appropriated, and whence all other groups of islands have derived it, is that between Greece, Macedonia, and Asia, in which are the islands of the *Ægean sea*; which is called the *White Sea*, in contradistinction to the Euxine, which they call the *Black Sea*. This part of the Mediterranean sea is bounded on the north by Romania, on the east by Natolia, on the west by Livadia and the Morea, and on the south by the isle of Candy. It divides, as far as it extends, Europe from Asia. All the islands contained in it, some of which lying on the coast of Natolia are called Asiatic, and the others European, lie between about the 35th and 40th degrees of north latitude, and 23d and 27th degrees of east longitude. Some of them are called Cyclades, because they form as it were a crown and circle round the isle of Delos; the others are called Sporades, as being dispersed without any order between Asia and the isle of Candy.

The modern geographers mention other Archipelagos, as that of Lazarus near the coasts of Malabar and Malacca; the Archipelago of Mexico; and that of the Caribbees, wherein are many islands; that of the Philippines, called by some the "great Archipelago," containing several islands, and all those of the Moluccas, of Celebes, &c. These Asiatic islands form a large group usually denominated the "oriental

Archipelago," and extending from 13° S. lat. to 22° 4' N. lat. that is 35 degrees, or 21,000 geographical miles, while the length from 95° E. long. to 132°, gives 37° not far from the equator, nearly corresponding with the breadth. The "northern Archipelago" consists of four groups of islands between the east coast of Kamtikatka in Asia and the west coast of America: the first, called *Saginaw*, comprehends five islands; that called *Khao* contains eight islands; and both these are now called *Alutian islands*. The third group includes sixteen islands, called *Andreznoffski Ostrova*; and the fourth, the *Lyssie Ostrova*, or *Fox islands*, which are sixteen in number. "Broughton's Archipelago," is a cluster of islands, rocky islets, and rocks, on the north-west coast of America, so called by Vancouver, after the name of their discoverer, and lying in about 50° 50' N. lat. and W. long. 126° 20'. The "dangerous Archipelago," or "labyrinth," is a name given to a group of islands discovered in the Pacific Ocean, eastward of Otaheite, by *Queiros*, *Schouten*, and *Le Maire*, *Roggewein*, *Byron*, *Wallis*, *Carteret*, *Bougainville*, *Cook*, *Edwards*, *Bligh*, *Vancouver*, *Broughton*, and *Wilson*, and so called from the intricacy and difficulty which they occasion to the navigation. They are dispersed from 14° to 27° of S. latitude, and as far as 25° eastward from Otaheite. The name was first given to some of these islands by *Bougainville* in 1768. To four of these islands *Captain Cook*, in 1769, gave the names of *Resolution*, in S. lat. 17° 24'. W. long. 141° 39'; *Doubtful island* in S. lat. 17° 20'. W. long. 141° 38'; *Furneaux island* in S. lat. 17° 5' and W. long. 143° 16'; and *Adventure island* in S. lat. 17° 14', and W. long. 144° 30'. All the inhabitants of these islands appear to be of the same race with the Society Islanders, but are somewhat darker in their complexions, and more ferocious in their manners. "Archipelago of the great Cyclades" is the cluster of islands first discovered by *Bougainville* in 1768, and called by *captain Cook*, who passed them in 1774, *New Hebrides*. "King George III.'s Archipelago" is a name given by *Vancouver* to a large group of islands, forming various channels, and lying on the north-west coast of America between 56° 10', and 58° 15' N. lat. and about 135° and 136° W. long. The exterior coast of this Archipelago from *Cape Crofs* to *Cape Edward* has several openings that appeared likely to afford shelter, but the rocks and islets, some producing trees, and others altogether barren, that extend to the distance of three or four miles from the shore, must render the entrance of such harbours unpleasent and dangerous, till they are better known. That which seemed to be the easiest of access was northward of *Cape Edward*, in lat. 57° 44', and was considered by *Vancouver* as *Portlock's harbour*. *Cape Edgcumbe* on this coast is situated in lat. 57° 2', and W. long. 135° 34½'. This cape forms the north-west point of a spacious opening that branches into several arms, and is called by *Mr. Dixon*, *Norfolk Sound*. One of the northern branches of the sound communicates with the land on which mount *Edgcumbe* stands, named by *Captain Cook* the *Bay of Islands*, and makes the intermediate part of the sea-coast an island. The south extremity of this Archipelago in lat. 56° 10'. and W. long. 134° 22½', constitutes a remarkable promontory that terminates in a high bluff rocky cliff, and becomes, on its eastern side, a narrow point of land, named by *captain Colnett*, *Cape Ommaney*; and the opening between this and *Cape Derision*, he called *Christian Sound*. *Vancouver's Voyage*, vol. iii. p. 267. A cluster of islands, or a single island, about twenty leagues in length, and lying between 53° and 54° N. lat. and about 130° W. long. was called by *Vancouver*, "*Pitt's Archipelago*." On the north of this group was *Chatham's Sound*,

Sound, on the east Grenville's canal, on the west Bank's island, and to the south Nepean sound, as they are severally denominated in one of Vancouver's charts. Other collections of islands under this appellation will be noticed in the course of this work.

ARCHIPHERACITÆ, ministers in the Jewish synagogues, appointed to read and interpret the Perakim, or titles and heads of the law, and the prophets.

The archipheracita was not the same with the archisynagogus, as Grotius and others have mistakenly imagined; but rather the chief or principal of these appointed to read, explain, and profess the law, in their schools.—And hence the name which is formed of *αρχος*, chief, and the Hebrew or Chaldee, *כַּרְתָּן*, *division*, or *chapter*.

ARCHIPPA, in *Ancient Geography*, a town of Italy, in the territory of the Marsi, said to be swallowed up by the Fucine lake.

ARCHIPPUS, in *Entomology*, a species of PAPILO (Dan. Felt Linn.) that inhabits South America. The wings are repandated, fulvous, veined with black: the margin black, dotted with white; fulvous spots at the tip of the anterior ones. Fabricius. Obs. This author believes it is the same insect as Cramer describes under the name PAPILO *Plexippus*. Gmelin thinks PAPILO *Archippus* of Cramer, f. A. B. is PAPILO *Misippus* of Fabricius.

ARCHIPRESBYTER. See ARCH-PRIEST.

ARCHIS, in *Ancient Geography*, a town of Asia, in Armenia Prima.

ARCHISTRATEGUS, the generalissimo or captain-general of an army. See STRATEGUS.

ARCHISYNAGOGUS, in the *Jewish History*, the chief or ruler of the synagogue.

These are sometimes also called the angels or princes of the synagogues: the Jews called them *chacamin*, i. e. *wife*.

Archisynagogi were persons of authority in each synagogue, who presided in assemblies held therein, invited those to speak whom they judged capable of it, and decided all disputes, relating to money, &c. They had a power to have those whipped who were convicted of acting contrary to the law; also a right of excommunicating, or casting out of the synagogue, those whom they found to merit this punishment. Their number was different according to the extent of the city, or the number of persons that came to the synagogue; in some there were seventy, in others eight or ten, and in others not above one. Vitringa de Synagog.

ARCHITECT, a person skilled in architecture, or the art of building; who forms plans and designs for edifices, conducts the work, and directs the several artificers employed in it.

The word is derived from *αρχος*, princeps, and *τεκτων*, *faber*, *workman*, q. d. the principal workman.

The most celebrated architects are Vitruvius, Palladio, Scamozzi, Serlio, Vignola, Barbaro, Cataneo, Alberti, Viola, Inigo Jones, De Lorme, Perrault, S. Le Clerc, Sir Christopher Wren, and the earl of Burlington.

Vitruvius enumerates twelve qualities requisite to constitute a good architect; that he be docile and ingenious; well educated; skilled in designing, in geometry, optics, arithmetic, history, philosophy, music, medicine, law, and astronomy.

Close application to the study of ancient masters, and the remaining works of the ancients, together with judgment and taste to select and properly to apply the hints which such examples afford, joined to a peculiar genius for the study of this art, are absolutely necessary to render an architect eminent in his profession.

ARCHITECTOGRAPHIA; the description of an-

cient buildings, temples, theatres, arches, pyramids, baths, gates, aqueducts, tombs, and the like.

ARCHITECTONIC, that which builds a thing up regularly, according to its nature and intentions.

ARCHITECTURE, ARCHITECTURA, the art of erecting buildings of any kind.

Amongst the various arts cultivated in society, some are only adapted to supply our natural wants; or assist our infirmities; some are instruments of luxury merely, and calculated to flatter our pride, or gratify our desires: whilst others tend at once to secure, to accommodate, delight, and give consequence to the human species.—Architecture is of this latter kind; and when viewed in its full extent, may truly be said to have a very considerable part in almost every comfort or luxury of life. The advantages derived from houses only are great, they being the first steps towards civilization, and having certainly great influence both on the body and mind. Secluded from each other, inhabitants of woods, of caves, or wretched huts, exposed to the inclement vicissitudes of seasons, and the distressing uncertainty of weather, men are generally indolent, dull, and abject, with faculties benumbed, and views limited to the gratification of their most pressing necessities; but wherever societies are formed, and commodious dwellings are found, in which well sheltered they may breathe a temperate air, amid the summer's heat or winter's cold; sleep, when nature calls, at ease and in security; study unmolested; converse, and taste the sweets of social enjoyments; there they are spirited, active, ingenious, and enterprising; vigorous in body, speculative in mind: agriculture and arts improve, they flourish among them; the necessaries, the conveniences, and soon even the luxuries of life, become there abundant. Mere strength however, even the steadiest perseverance, obtains with difficulty the desired produce; but inventions facilitate and shorten labour, multiplying productions so, as not only to supply domestic wants, but likewise to treasure up stores for foreign markets. Architecture then smooths the way for commerce; she forms commodious roads through marshes or other grounds naturally impracticable, fills up valleys, unites, or levels mountains; throws bridges over deep or rapid rivers, turns aside or deadens the fury of torrents; constructs canals of navigation, builds ships, and contrives ports for their secure reception in the hour of danger: facilitating thus the intercourse of nations, the conveyance of merchandise from people to people. A well-regulated commerce is ever the source of wealth; and luxury has ever been attendant on riches. As the powers of gratification increase, fancy multiplies wants; till at length, indolence or pleasure, vanity and superstition, fears and resentments, give birth to a thousand superfluous, a thousand artificial cravings; the greater part of which could not be gratified, without the assistance of architecture; for splendid palaces, magnificent temples, costly dwelling-houses, and amphitheatres, theatres, baths and porticos, triumphal arches and bridges, mausoleums, and an endless number of similar inventions, are all either necessary instruments of ease and pleasure; or striking testimonies of wealth, of grandeur and pre-eminence; either present or past. Nor are there any other objects, whether necessary or superfluous, so certainly productive of their design; so permanent in their effects, or beneficial in their consequences; fine furniture, rich dresses, brilliant equipages, numerous domestics, are only secondary attractions at first; they soon feel the effect of time; and their value fluctuates, or dies with the fashion of the day. While the productions of architecture command general attention; are monuments lasting beyond the reach of modes; and record to latest posterity the consequence, virtues, achievements, and munificence of those they

they commemorate. The immediate and most obvious advantages of building are, employing many ingenious artificers, many industrious workmen and labourers of various kinds; converting materials of little value into the most stately productions of human skill; beautifying the face of countries; and multiplying the conveniencies and comforts of life. But these, however great, are not the most considerable: that numerous train of arts and manufactures, contrived to furnish and adorn the works of architecture, which occupies thousands, and constitutes many lucrative branches of commerce; that certain concourse of strangers, to every country celebrated for stately structures; who extend your fame, adopt your fashions, give reputation, and create a demand for your productions; are considerations of the highest consequence: in short, the advantages of building extend to the remotest ages, and at this day, the ruins of ancient Rome, in a great measure, support the splendor of the present; by the number of travellers, who flock from all nations, to visit the ancient remains and modern magnificence of that famous city; and who, in the course of a few centuries, have there expended incredible sums of money, by long residence; and in the purchase of old pictures, antique statues, busts, bas-reliefs, urns, and other curious productions of art: of which, by some extraordinary good management, there is a treasure never to be exhausted. Nor is architecture less useful in defending, than prosperous in adorning and enriching countries; she guards their coasts with ships of war, secures their boundaries, fortifies their cities, and by a variety of artful constructions, controls the ambition and frustrates the attempts of foreign powers; curbs the insolence, and averts the danger, and the horror of internal commotions. Thus architecture, by supplying men with commodious habitations, procures that health of body and vigour of mind, which facilitate the invention of arts: and when, by the exertion of their skill or industry, productions multiply beyond domestic wants, she furnishes the means of transporting them to other markets; and whenever by commerce they acquire wealth, she points the way to employ their riches rationally, nobly, benevolently; in methods honourable and useful to themselves and their descendants; which add splendor to the state, and yield benefit both to their contemporaries and to posterity: she farther teaches them to defend their possessions, to secure their liberty and lives, from the attempts of lawless violence, or unrestrained ambition. An art so variously conducive to the happiness of man, to the wealth, lustre, and safety of nations, naturally commands protection and encouragement: in effect, it appears, that in all civilized times, and well regulated governments, it has been much attended to, and promoted with unremitting assiduity; and the perfecting of other arts has ever been a certain consequence; for where building is encouraged, painting, sculpture, and all the inferior branches of decorative workmanship, must flourish of course; and these have an influence on manufactures, even to the minutest mechanic productions; for design is of universal benefit, and stamps additional value on the most trifling performances, the importance of which, to a commercial people, is obvious; it requires no illustration. Let it not however be imagined that building, merely considered as heaping stone upon stone, can be of great consequence; or reflect honour, either on nations or individuals: materials in architecture are like words in phraseology; having separately but little power; and they may be so arranged, as to excite ridicule, disgust, or even contempt; yet when combined with skill, expressed with energy, they actuate the mind with unbounded sway. An able writer can move even in rustic language, and the masterly dispositions of a skilful artist will dignify the

meanest materials; while the weak efforts of the ignorant, render the most costly enrichments despicable. To such, the compliment of Apelles may justly be applied; who, on seeing the picture of a Venus magnificently attired, said to the operator, "Friend, though thou hast not been able to make her fair, thou hast certainly made her fine." See the preface to sir W. Chambers's *Treatise on Civil Architecture*.

Architecture is divided into CIVIL, MILITARY, and NAVAL *Architecture*, for which see these several heads.

ARCHITHALASSUS PRIMUS, in *Conehology*, a name given by Argenville to the shell called by Linnæus *Conus summus*.

ARCHITRAVE, in *Architecture*, the lower division of an entablature, or that part which rests immediately on the column.

In the most ancient buildings, which were probably of timber, the architrave was the beam which extended from column to column to support the roof, whence the name, which is from *αρχος*, chief, and *τραβς*, a beam.

In all the ancient examples of the Doric order still existing in Greece, such as those at Athens and Corinth, and also those at Pæstum, and in Sicily, it has only one fascia, and is of great height, being nearly equal to the diameter of the column. In the Doric order of the theatre of Marcellus at Rome, it has only one fascia, but is much lower, being only equal to half a diameter of the column. The moderns, such as Vignola, Scamozzi, &c. have generally confined it to this proportion nearly, but have divided it into two fascias, taking the idea from some ancient examples of the Doric order in Italy.

In some of the ancient examples of the Ionic order in Greece, such as the temple on the Ilissus near Athens, it has only one fascia, which is quite plain, and of considerable height; while in others, such as the temple of Minerve Polias at Athens, and that of Bacchus at Teos, it is divided into three fascias, and has the upper mouldings enriched. In the Ionic order of the temple of Fortune, and at the theatre of Marcellus at Rome, it also has three fascias. The moderns have generally given it two fascias.

In the Corinthian and Composite orders, both the ancients and moderns have divided it into three fascias, generally enriching the mouldings.

The practice of architects differs exceedingly in the proportions of the architrave, as in all the other parts of the orders. Character and propriety, however, seem to require, that in the massy and grave orders, such as the Doric and Ionic, this member, which represents a part subject to great pressure, should have a proportionate degree of strength; while in the gayer Corinthian and Composite, its appearance should be lighter and more ornamented.

In Gothic architecture there is no architrave, and this forms one of the most striking differences between this species of architecture and the Grecian. In the latter there is always a horizontal architrave over the columns, whereas from the tops of Gothic columns arches always spring. The Egyptian architecture is also characterised by horizontal architraves.

ARCHITRAVE *Cornice*. See CORNICE.

ARCHITRICLINUS, in *Antiquity*, the master or director of a feast, charged with the order and economy of it, the covering and uncovering of the tables, the command of the servants, and the like.

The word architriclinus properly imports the chief or master of a triclinium or dining-room. His office properly differed from that of modimperator, or arbiter bibendi, as the latter was appointed by the guests; the architriclinus, by the person who gave the feast.

The architræcinus was sometimes also called *seruus trichinarius*, and by the Greeks *πρωυστης*, i. e. *fragulator*, or *fore-tasler*. Potter also takes the architræcinus for the same with the SYMPOSIARCHA.

ARCHITYPE. See ARCHETYPÆ.

ARCHIVAULT, in *Architecture*, the inner contour of an arch; or a band or frame adorned with mouldings, running over the faces of the arch-illoes, and bearing upon the impost. See this represented in the lines that bound the arch over E. See BASILIC.

The word is French, *archivolte*, where it signifies the same thing, formed of *arcus volutus*.

It is different in the different orders. In the Tuscan, it has only a single face; it has two faces crowned in the Doric and Ionic; and the same mouldings with the architrave in the Corinthian and Composite.

ARCHIVE, or ARCHIVES, a chamber or apartment wherein the records, charters, and other papers and evidences of a state, house, or community are preserved, to be consulted occasionally.

The words come from *arca*, a chest; or the Greek *αρχων*, which Suidas uses in the same sense. In some Latin writers we meet with *archarium*.

We say the archives of a college, of a monastery, &c. The archives of ancient Rome were in the temple of Saturn; the archives of the court of chancery are in the Rolls office. In the code we meet with *archivum publicum vel armarium publicum, ubi acta & libri exponantur*. *Cod. de fid. instrum. auth. ad hæc.* xxx. q. 1.

ARCHIVIST, *archivista*, a keeper of an archive.

Under the emperors, the archivist was an officer of great dignity, held equal to the proconsuls, vested with the quality of a count, styled *clarissimus*, and exempted from all public offices and taxes. Among the ancient Greeks and Persians, the trust was committed to none but men of the first rank; among the Franks, the clergy, being the only men of letters, kept the office among themselves. Since the erection of the electoral college, the archbishop of Mentz has had the direction of the empire.

ARCHIZUPANUS, a title given to the prince or despot of Servia. The word is compounded of *αρχι*, and *ζυπανος*, *governor*. In an epistle of pope Innocent II. he is called *Magnus Zupanus*.

ARCH-MARSHAL, ARCHIMARISCALLUS, the grand marshal of the empire.

The elector of Saxony is arch-marshal of the empire; and in that quality he goes immediately before the emperor, bearing a naked sword, at the diet, and on other solemn occasions. He bears in his arms two swords placed crosswise. During the holding of the diets, he has jurisdiction over all electoral and other officers of the states of the empire, and also in criminal matters. His hereditary marshals are the counts of Pappenheim, who, by virtue of their office, bear the electoral swords of Saxony in their arms.

ARCH-MINISTER, derived from the Greek *αρχη*, and the Latin *minister*, the prime minister of a prince, or state. Charles the Bald having declared Boson his viceroy in Italy under the title of duke, made him also his first minister under that of arch minister.

ARCHON, *αρχων*, literally signifying a *commander*, in *Antiquity*, the chief magistrate of the city and commonwealth of Athens.

After the Athenians had abolished monarchy, they created archons, who were obliged to render an account of their administration to the people. Some of these were annual, and others perpetual. Medon, the son of Codrus, was the first of the latter; and Creon of the former, who

entered upon his charge in the first year of the twenty-fourth Olympiad, or the 684th year before Christ. The occasion of their institution was this: Codrus, king of Athens, having devoted himself for the good of his people, in the war with the Heraclidæ; his sons, Medon and Nicleus, disputed the crown betwixt them: the Athenians took this occasion of dissolving their monarchy, and, in lieu of kings, created perpetual governors, under the name of archons. Medon, son of Codrus, was he who first had this charge, being appointed in the year 1070 before Christ; but required to render an account of his administration. He held it for twenty years, and his twelve descendants in regular succession (from him called *Medontidæ*) enjoyed it for 287 years. But a perpetual magistracy seem'd to this free people too lively an image of royalty, the very shadow whereof they resolv'd to abolish. Accordingly, the administration of an archon, which had before been perpetual, they reduced, in the first year of the seventh Olympiad; or 752d year before Christ; or, according to Pausanias, the third year of the sixth Olympiad, or 754th year before Christ; to ten years: and, about seventy years after, to one year: with a view of recovering as oft as possible the authority into their own hands, which they never transferred to the magistrates but with regret. The first of the decennial archons was Charops, brother of Alcmæon and son of Æschylus; and the last was Eryxias, who closed the race of Codrus. The chief magistrates of Athens, distinguished by this common appellation, were nine in number; though the name archon belonged, by way of eminence, to the chief of the nine, who was also called *eponymus*, *επωνυμος*, because the year was denominated from him. His jurisdiction comprehended both ecclesiastical and civil affairs. He determin'd all causes between men and their wives, parents and children, and disputes relating to wills, dowries, and legacies: he had the charge and direction of orphans, minors, tutors, and guardians. He had also the first cognizance of several public actions. He kept a court of judicature in the odeum to decide in trials relating to provisions and similar matters. He appointed *επιμεληται*, or curators, who took care of the due celebration of the feasts called *Διονυσια*, *dionysia*, and *θαρραλια*, *thargelia*, and of the regulation of stage plays. He was punished with death if convicted of drunkenness during the time of his office. The second archon was called *βασιλευς*, or *king*: to him pertained the superintendance of the religious ceremonies and feasts: he decided all disputes between the priests and families sacred by inheritance, as the Ceryces and Eteobudæ: he punished all impiety and preparation of the holy mysteries or temples: he offered public sacrifices for the prosperity of the commonwealth: he had also some concern in secular affairs, as he took accusations of murder, and referred them to the *Αροπαγίται*, among whom he had a right of suffrage; but during the trial, he laid aside the crown which was the badge of his office. His court of judicature was in the royal portico. It was required, that his wife, called *βασιλισσα*, *basilissa*, should be a legitimate citizen of Athens, and a virgin. The third was the *πολεμαρχος*, so called from *πολεμος*, *war*, and *αρχων*, *to command*: to him belonged the care of strangers and sojourners, and the conduct of war; and he took care that the offspring of those who died in the service of their country should be maintained from the public treasury. These magistrates were assisted by the *Παραδροι*, or assessors, who were admitted into office in the same mode, and under the same restrictions. The other six were called *thesmotteta*, from *θεσμος*, *law*, and *τῆτα*, *I establish*. They formed a tribunal for judging concerning seductions, calum-

nies, bribery, &c. and for settling disputes between the citizens and strangers, and all controversies in trade. They ratified all contracts and leagues, directed and guarded the establishment of laws, and formed a kind of barrier between the other magistrates and the people: they preferred the appeals to the people, publicly examined several of the magistrates, and took the votes in the assemblies, and they prosecuted those who attempted to mislead the unwary into any act injurious to the commonwealth. They used to perambulate the city in the night, and to correct those who committed any disorder. The whole body had the power of life and death; they had a joint commission for constituting some magistrates and deposing others, when, upon inquiry into their conduct, and by the suffrages of the people, they were declared unworthy of their offices; they had also authority to assemble the people; and they were exempted from all taxes and contributions for building ships of war, in recompence of their service. They wore garlands of myrtle; and any person who struck them, when they wore their garlands, was punished with *αἰσχρῶς*, *infamy*. They were elected by lot, and previously to induction into their office, they underwent a twofold trial, one in the forum, called *doximasia*; and the other in the senate house, denominated an *arcisis*; and in these trials, they were asked, who were their ancestors? whether by three descents they were Athenian citizens? whether they were related to Apollo Patrius or Jupiter Hercæus? to what tribe and ward they belonged? whether they had been dutiful to their parents, had served the appointed time in the wars, had the estate which the law required, and were perfect in all their limbs? They were then conducted into the royal portico, where an oath was required of them, that they would administer justice without partiality, and never be corrupted by bribes. This custom was established by Solon, who also enacted that terrible law which condemned to death the archon who, after losing his reason in the pleasures of the table, should dare to appear in public with the ensigns of his dignity. Potter's Arch. Græc. vol. i. p. 71.

Under the Roman emperors, several other Greek cities had two archons for chief magistrates, which were the same with the *duumviri* in the colonies and *municipia*.

ARCHON is also applied, by some authors, to divers officers, both civil and religious, under the eastern or Greek empire. Thus, bishops are sometimes called archontes; and the same may be said of the lords of the emperor's court. We also read of the archon of the antimensia, archon of archons, grand archon, archon of churches, archon of the gospel, archon of the walls, &c.

ARCHON, LOUIS, in *Biography*, an antiquary, chaplain to Louis XIV., was born at Riom in Auvergne, in 1645, and died at Rome in 1717. His "History of the chapel of the kings of France," in 2 vols. 4to, abounds with curious researches. *Nouv. Dict. Histor.*

ARCHONTICI, in *Church History*, a sect which arose towards the close of the second century; thus called from the Greek *αρχοντες*; q. d. *principalities*, or *hierarchies of angels*; because they held the world to have been created not by the supreme God, but by certain subordinate powers, called archontes, or angels. The archontici were a branch of VALENTINIANS.

ARCHONTIUM, *αρχοντιον*, denotes a dignity of the Greek church.

ARCHOUS, in *Ancient Geography*, the name of a river in Asia, situate in Assyria. Also, a place of Asia in Mesopotamia, west of the Tigris, and near the wall of Semiramis.

ARCHPRIEST, ARCHPRESBYTER, a priest, or presbyter, established in some diocese, with a pre-eminence over the rest.

Anciently, the arch-priest was the first person after the bishop: he was seated in the church next after the bishop; and even acted as his vicar, in his absence, as to all spiritual concerns.

In the sixth century, there were found several arch-priests in the same diocese; from which time some will have them to have been called *deans*.

In the ninth century, they distinguished two kinds of cures or parishes: the smaller governed by simple priests; and the baptismal churches by arch-priests; who, beside the immediate concern of the cure, had the inspection of the other inferior priests, and gave an account of them to the bishop, who governed the chief, or cathedral church in person.

There are arch-presbyters still subsisting in the Greek church, vested with most of the functions and privileges of *chorepiscopi*, or rural deans.

ARCH-PRIOR, was a name sometimes given to the maller of the order of *TEMPLARS*.

ARCH-TREASURER, *architresaurarius*, the great treasurer of the German empire.

This office was created with the eighth electorate, in favour of the elector Palatine, who had lost his former electorate, which was given to the duke of Pavia by the emperor Ferdinand II. who took it away from Frederick V. elector Palatine, after the battle of Prague, where he was defeated in maintaining his election to the crown of Bohemia. Since the treaty of Westphalia, the elector Palatine has been arch-treasurer. The elector is protector through all Germany of the order of St. John, can raise noblemen and gentlemen to the degree of counts, and also admit as bondmen, in places subject to his jurisdiction, all those that are illegitimately born, and other persons of foreign countries, on condition of their binding themselves to the duties of the electorate, and to the payment of a certain tribute and mortuaries.

The dignity of arch treasurer was contested between the elector of Brunswick, now king of Great Britain, who claimed it in virtue of his descent from the elector Frederic, and the elector Palatine. This elector still styles himself arch-treasurer, till another suitable arch-office be assigned him. He enjoys the ultimate succession in the bishoprick of Osnaburg, together with some other rights and privileges. His electoral jurisdiction extends to the territories of Hanover, and to those of Zell. Although the illustrious house of Hanover was raised to the electoral dignity by the emperor Leopold, in 1692, it obtained neither voice nor seat in the electoral college till the year 1708.

ARCHYTAS, in *Biography*, a Pythagorean philosopher and distinguished mathematician of Tarentum, was a contemporary with Plato, who interposed for his rescue from death, under the tyranny of Dionysius of Sicily; and the eighth preceptor of the Pythagoric school, in succession from Pythagoras. Accordingly, he flourished about the ninety-fifth Olympiad, or 400 years before Christ. Such was the celebrity of this philosopher, that among his disciples are reckoned Philolaus, Eudoxus, and Plato. Archytas was in such high esteem among his countrymen for wisdom and valour, that he was chosen seven times general of their armies, and chief magistrate of Tarentum, in direct opposition to an established law; and in the exercise of his office he invariably recommended himself by his moderation, and also by his affability and condescension. As a speculative philosopher, he followed the doctrine of Pythagoras; and Aristotle is said to have borrowed from him the general arrangements known under the appellation of the "Ten Categories." To Archytas, this great philosopher was also indebted for many of his ethical principles and maxims; and more especially for the notion which he repeatedly inculcates, that

virtue consists in avoiding extremes. Virtue, according to Archytas, is to be pursued for its own sake, in every condition of life; and he taught, that all excess is inconsistent with virtue; that the mind is more injured by prosperity than by adversity; that there is no pestilence so pernicious to human happiness as pleasure; and that the love of it is a destructive disease of the human mind. To his ingenuity, as a mathematician, we owe, according to Eutocius, the method of finding two mean proportionals between two given lines, and the duplication of a cube; and we derive, from his skill in mechanics, the invention of the screw, and crane, and various hydraulic machines; to say nothing of his flying pigeon, or winged automaton. See AEROSTATION. The astronomical and geographical knowledge of Archytas is celebrated by Horace in a beautiful ode, recording also his death, which was occasioned by a shipwreck on the coast of Apulia, where his unburied corpse was found:—

“ Te maris et terræ, numeroque carentis arenæ
Menforem cohibent, Archyta,
Pulveris exigui prope litus parva Marinum
Munera; nec quidquam tibi prodest
Aërias tentasse domos, animoque rotundum
Percurrisse polum, morituro.”

Lib. I. Od. 28.

“ Archytas, what avails thy nice survey
Of ocean's countless sands, of earth and sea?
In vain thy mighty spirit once could soar
To orbs celestial, and their course explore;
If here, upon the tempest-beaten strand,
You lie confin'd, till some more liberal hand
Shall strew the pious dust in funeral rite,
And wing thee to the boundless realms of light.”

FRANCIS.

As to his moral disposition and conduct, Archytas was distinguished by modesty and self-command; and in his language he is said to have shewn a degree of regard to decency, not often found among the ancients. He never chastised a servant, or punished an inferior in wrath. To one of his dependents, who had offended him, he said, “It is well for you that I am angry; otherwise I know not what you might expect.” None of the writings of Archytas are extant, except a metaphysical work, entitled, “*Περὶ τοῦ παντὸς φύσεως*,” or “On the universe,” in which he distributes all things into ten classes or categories; written in the Doric dialect, and published in Greek and Latin at Venice, in 1571. 8vo. Several fragments “on Wisdom,” and “on the good and happy Man,” have been preserved by Stobæus, and edited by Gale, apud Opusc. Mythol. p. 673. Laertius, l. viii. c. 79—86. Val. Max. l. iv. c. 1. Strabo, l. vi. Aul. Gell. l. x. c. 12. Ælian, l. vii. c. 14. l. xii. c. 19. l. xiii. c. 55. l. xiv. c. 19. Suidas. Fabr. Bibl. Græc. l. ii. c. 13. § 1. t. i. p. 493. Brueker's Hist. Phil. by Enfield, vol. i. p. 410.

ARCIADES, in *Ancient Geography*, a river of Italy in Brutium, near Rhegium.

ARCILAUS, a town of Spain in Bætica, situate, according to Ptolemy, in the territory of the Turduli.—Also, a town of Hispania Tarragonensis, called *Archifana*, in the territory of the Bastitani, according to Ptolemy.

ARCILEUTO. See ARCHILEUTO.

ARCINA, in *Ancient Geography*, a town placed by Ptolemy in Dacia.

ARCINELLA, in *Conchology*, a species of CHAMA found in the American ocean. It is grooved, mucated, and marked with excavated dots; hinge with a sessile callus. Gmelin. The breadth is about two inches, and the length nearly the same; it is white, with the spines rarely of a rose colour; within it is yellowish; the margin crenated; po-

sterior excavation cordated, warty, rugose, and large, with an appendage in general on one side.

ARCIROESSA, in *Ancient Geography*, a town of Asia upon the Euxine sea.

ARCIS *sur Aube*, in *Geography*, a town of France, in the department of the Aube, and principal place of a district, five leagues north of Troyes. The place contains 2,500, and the canton 9,386 inhabitants: the territory comprehends 577½ kilometres and 21 communes. N. lat. 48° 33', E. long. 4° 2'.

ARCISA, a town of Italy in the Milanese, 11 miles west of Como.

ARCIVÆ *aves*, in *Antiquity*, birds which gave bad omens, either by their flight, noise, or manner of eating.

They were called *arcivæ*, sometimes also *arcule*, *quia arcebat ne quid fieret*, prevented or forbid things being done.

ARCO, in *Geography*. See ARCH.

ARCOBRIGA, in *Ancient Geography*, a town of Spain in the country of the Celtiberians, between Segontia and Bilbilis.—Also, a town of Spain, in Lusitania, according to Ptolemy.

ARCONATO, in *Geography*, a town of Italy in the duchy of Milan, 18 miles W. from Milan.

ARCONCEY, a town of France, in the department of the Côte d'Or, and chief place of a canton in the district of Arnay le Duc, five miles N. from Arnay le Duc.

ARCOS *de la Frontera*, a town of Spain, in the country of Seville, seated on a sharp rock near the river Guadalete, and fortified by both art and nature; anciently *Aresbriga*: 40 miles S. S. W. from Seville. N. lat. 36° 49', W. long. 4° 55'.

ARCOS, a town of Spain in Old Castile, on the river Xalon, and at the foot of a mountain in the road from Sigüenza to Saragossa, two leagues east from Medina-Celi.

ARCOS *de Valdevez*, a small town of Portugal, in the province of Entre-Minho and Douro. It is the ancient *Arcobriga Lusitanica* of Ptolemy.

ARCOT, a city of Hindostan and capital of the Carnatic, is seated on the river Paliar, at 56,6 geographical miles in horizontal distance from Madras, according to the measurement of major Rennell, and in N. lat. 12° 51' 30", E. long. 79° 28' 15". It appears to be a place of great antiquity, because it is taken notice of by Ptolemy as the capital of the Soræ, or Sora—mandalum; whence by corruption is derived Choro-mandel. Arcot is a pretty large city, and its citadel is esteemed a place of some strength for an Indian fortrefs. The defence of this place by Cave, in 1751, established the military fame of this nobleman. The Nabob of Arcot, or of the Carnatic, is an ally of the East India Company, and his dominions commence on the south of the Guntoor Circar, and extend along the whole coast of Coromandel to Cape Comorin. See CARNATIC. The revenue of the nabob is stated at about a million and a half sterling per annum; out of which he pays a subsidy of 160,000 *l.* per annum, to the East India Company, towards the expence of their military establishment. Rennell's Memoir, Pref. p. 137.

ARCS, LES, a town of France in the department of the Var, and the chief place of a canton, in the district of Draguignan, 10 miles from Frejus.

ARCTANES, in *Ancient Geography*, a people of Epirus.

ARCTAPELIOTES, in *Cosmography*, the wind which blows at the 45th degree from the north toward the east. In this sense, *arctapeliotes* amounts to the same with that we call the north-east wind.

ARCTIC, in *Astronomy*, an epithet given to the north pole, or the pole raised above our horizon. It is called the arctic pole, on account of the constellation of the *Little Bear*, in Greek called *αρκτος*, the last star of the tail whereof nearly points out the North Pole.

ARCTIC circle, is a lesser circle of the sphere, parallel to

the equator, passing through the north pole of the ecliptic, and $23^{\circ} 28'$ distant from the north pole, from whence its name. This and its opposite, the antarctic, are called the two polar circles; and may be conceived to be described by the motion of the poles of the ecliptic, round the poles of the equator, or of the world. The arctic circle is the boundary of the north frigid zone.

ARCTICA, in *Conchology*, a species of *Mya* that inhabits the north seas. The shell is striated; and keeled with two sub-spinous ridges; hinge without teeth, Mull. Gmelin, &c. This is *Mya tella striata, valvulis carinis denticulatis spinulosis saepe obsolete, cardine obsolete dentato*. O. Fabr. Fn. Groen. The length of this shell is from one line and an half to seven lines; of a pale yellow colour; within, milky white. It resembles an *Arca*; the anterior part is impressed and rather flattish; very obtuse in front; and behind, shorter, and rather sharp.

ARCTICA, a species of ARGONAUTA that inhabits the Greenland seas. The specific character is concise. Shell perforated; keel entire. Gmelin. This is *Clochelicina* of Pallas. In spring and autumn it is seen swimming on the surface of the water; is very fragile, finely grooved, and about three lines and an half in diameter.

ARCTICA, in *Ornithology*, a species of ALCA, known in England by the name of *puffin*. The bill is compressed, sharp-edged, with four grooves; orbits of eyes and temples white; with a sharp-pointed, and somewhat triangular protuberance upon the upper eye-lid; Linnæus, Pallas, Brünick, Gmelin, &c. This bird is called *Pica Marina* by Aldrovandus, *Psitacus Marinus* by Marten. *Ipatka* by Kraitschenn, *Macareux* by Buffon, and *Puffin* by Pennant, Latham, and Donovan, Brit. Birds, &c. The length from the point of the bill is twelve inches, breadth twenty-one; weight twelve ounces. The bill is an inch and a quarter long, and is of a singular shape, much compressed on the sides, and nearly an inch and a half deep at the base, from whence both mandibles tend to a point, which is a little curved: across the upper mandible are four oblique furrows; on the under, three; half of the bill next the point is red; that next the base is blue grey; and at the base is a sort of rising cere, full of minute holes; in the nostrils is a long and narrow slit on each side, near the edge of the upper mandible, and parallel to it; the irides are grey; the edges of the eye-lids crimson; on the upper a callous protuberance of a triangular shape; and on the under one, another callosity, but of an oblong form; the top of the head, hind part of the neck, and all the upper part of the plumage are black, passing round the throat in a collar; the sides of the head, chin, and all the parts beneath, are of the purest white; the legs are orange; in some birds there is a great portion of a dusky mixture on the cheeks, and a patch of the same on each side of the under jaw, and these have been supposed to be the females. They vary exceedingly in regard to the bill, according to age; in the first year it is small, weak, destitute of any furrow, and of a dusky colour; in the second, larger, stronger, and lighter coloured, with a faint vestige of a furrow at the base; but in those of a more advanced age the colours are brighter; hence these birds are supposed not to be perfect, or at least not to breed, till the third year; especially as not a single one has ever been observed at Priefholm which had not the bill of an uniform growth.

These birds are frequent upon several of the rocky coasts of England, as Priefholm Isle, the Needles, Isle of Wight, Beachy Head, &c. They are common in Ireland also, and in North Britain; inhabit Iceland and Greenland; frequent Carolina in America in winter; were met with by our late voyagers in Sandwich Sound, where the natives ornament

the fore parts and collar of their seal-skin jackets with the beaks of them; and in Oonalashka, where they make gowns of their skins. On the coast of Kamtskatka, and the Kurile islands they are common, even on the Putschinski Bay almost as far as Ochotka; the nations of the two first wear the bills about their necks fastened to straps, and, according to the superstition of these people, their shaman or priest must put them on with a proper ceremony, in order to procure good fortune.

The puffins arrive at their breeding places about the rocks of Priefholm the first week in May, and endeavour to dislodge the rabbits to save the trouble of making holes for themselves. Except in this respect, and the tenderness they have for their young, they are considered as a stupid race of birds. The female lays but one egg, which is of a white colour; the young are hatched in the beginning of July, and about the middle of August they take flight. The young that are late hatched become the prey of the falcons and hawks that live on these rocks, for the old ones leave the place, to a single bird. Notwithstanding their neglect of the young at this time, on every other occasion they shew great attention to them. They will suffer themselves to be taken by the hand, and use every means of defence in their power to save them; and if laid hold of by the wings, will give themselves most cruel bites on any part of their body within reach, as if actuated by despair; and when released, instead of flying away, will often hurry again into the burrow to their young. They feed on sprats, crabs, sea-weeds, &c. and the flesh is excessively rank, though the young, when pickled, are admired by some people.

A variety of this species is described by Dr. Latham from a specimen in the collection of Sir Joseph Banks, that was met with at Bird island between Asia and America. The length is sixteen inches; the bill is two inches long, much the same colours as the last, but not so deep at the base; crown of the head, as far as the nape, ash colour; sides of the head white; throat, neck, and all the upper parts of the body, wings, and tail, black; breast and under parts, white; legs, orange. The other sex has the bill more slender; the crown of the head, black brown; sides of the head white, passing backwards almost to the nape; thighs ash-coloured; and is in other respects like the former species.

ARCTICUS, a species of COLYMBUS. The head is hoary white; under the throat violaceous black, with a white interrupted band. Gmelin. This is *Colymbus (Arcticus) capite colloque cinereis, gutture nigro-violaceo, dorso nigro maculis quadrangularibus albis*; Brunnick. *Colymbus Arcticus*, Lumme, of Willoughby. *Colymbus Arcticus*, Hymber. Gunner Act. Nordf. *Mergus gutture nigro* of Brisson. *Hirundinis aquaticæ species exotica*, Bess. mus. Lumme, of Worm. mus. &c. *Lumme ou petit plongeon de la mer du nord*, of Buffon. *Speckled Loon*, of Edwards; and *Black-throated Diver*, of Pennant and Latham.

The length of this bird is two feet; bill near an inch long, slender and black; the forepart of the head and throat black; hind part of the head and neck, ash-colour, sides of the last, white spotted with black: on the forepart of the neck a large patch of black, five inches in length, changing to purple and green in different lights; the back and upper parts black: scapulars marked with square spots of white; wing-coverts the same, but the spots are round; breast and belly white; quills dusky; tail short and black; legs black, with a cast of red on the inside.

This bird is common in the northern parts of Europe, as Norway, Sweden, and Denmark. Frequent in the inland lakes of Siberia, especially those of the Arctic regions: also in Iceland, Greenland, and the Ferro isles; and likewise,

at Hudson's Bay in America. It is supposed to cry and be very restless against rain; hence the Norwegians think it impious to destroy this species; but the Swedes, less superstitious, dress the skins, which, like all of this genus, are exceeding tough, and use them for gun-scales, and facings for winter caps. Vide Latham, &c.

ARCTIUM (*ἄρκτον*, Dioscor.), in *Botany*, Burdock. Lin. gen. 923. Schreb. 1253. Juss. 173. Class, *Syngenesia Polygamia equalis*. Nat. Ord. *Umbelliferae capitatae Cirsaceae phloea*. Juss. Gen. Char. *Cal.* common, globular, imbricate; scales lanceolate, ending in long subulate prickles, reflex and hooked at the end. *Cor.* compound, tubular, uniform; corollules hermaphrodite, equal. Proper, monopetalous, tubular; tube slender, very long; limb ovate, quinquefid; divisions linear, equal. *Stam.* filaments five, capillary, very short; anther cylindrical, tubular, the length of the corolla, five-toothed. *Pist.* germ oblong, with a villose top. *Style*, filiform, longer than the filament. *Stigma* hid, reflex. *Per.* none. *Calyx* converging. *Seeds* solitary, vertically pyramidal, with the two opposite angles obliterated, gibbous on the outside. *Down* simple, shorter than the seeds. *Rec.* chaffy, flat; chaffs fetaceous. *Ess. Gen. Char.* *Cal.* globular, the scales at the end hooked, inflected.

Species 1. *A. Lappa*, common burdock or clot-burr; "leaves cordate unarmed petioled." Curt. Lond. fasc. 4. 55. Woodv. Med. Bot. 15. Bardana major. Ger. Pharm. Lond. &c. Root biennial, fusiform. Stem three or four feet high, erect, branched, round, grooved. Leaves alternate, large, rough, undulated. Flowers in panicles, terminal. The outer scales of the calyx by their hooks lay hold of animals, cloaths, or any soft substance with which they come in contact. Corolla purple. It is common on the sides of roads, flowering in July and August. There is a woolly-headed variety of this species: it also varies much in the size of the heads. *Medicinal properties.* The pharmacopoeias direct the root for medical use; it has no smell, but tastes sweetish and mixed as it were with a slight bitterness and roughness. Its virtues, according to Bergius, are cleansing, diuretic, and diaphoretic. It has been employed in chronic cases, as scurvy, rheumatism, gout, lues venerea, and pulmonary complaints. We have never had an opportunity of observing the effects of this root, except as a diuretic, and in this way it has proved very effectual in dropsies. The seeds also possess a diuretic quality, and have been given with advantage in the dose of a dram, in calculous and nephritic complaints; and in the form of emulsion, as a pectoral. The root is generally used in decoction, which may be made by boiling two ounces of the fresh root in three pints of water, two of which, in dropical cases, should be taken in the course of twenty-four hours. Woodv. Med. Bot. p. 42. 2. *A. Perfonata*, cut-leaved burdock. "Leaves decurrent, ciliate, spiny; root-leaves pinnate; stem-leaves oblong-ovate." Carduus perfonata, Jac. auct. 4. 25. t. 348. Root biennial, woody. Stem two feet high, angular leaves on the stem, tomentose beneath, ferrate, spined at the edges. Lower leaves petioled, consisting of three or four pairs of pinnae, with a very large leaf at the end. Flowers in terminal bunches on tomentose peduncles, armed with little spines. Scales of the calyx reflex at the point, but not hooked; florets six or seven, of a violet purple colour. A native of Switzerland, Austria, Silesia, and Siberia; flowering in July and August. Introduced here in 1776 by J. N. de Jacquin, M.D. 3. *A. Carduelis*, "leaves pinnatifid prickly;" stem upright, prickly, grooved, about a cubit high; leaves stem-clasping, deeply laciniate; calyces terminating, peduncled, with linear bristle-shaped scales spreading and bending inwards. A native of the mountains in Upper Carniola, and

in Silesia. These plants are seldom admitted into any but botanic gardens, where they may be readily increased from seed.

ARCTOMYS *Palestinorum*, in *Zoology*, the name of an animal of the rat kind, but very large, being of a middle size between the rat and the rabbit; it lives in caves, and feeds on vegetables, and is a fierce and bold creature. It uses its fore-feet as hands, and has a custom of sitting on the buttocks, and in this posture looks very like a bear. Ray.

ARCTONESUS, or **ARCONESUS**, in *Ancient Geography*, a desert island in the Ægean sea. Also, a town of Asia, near Halicarnassus, according to Strabo and Pliny.

ARCTONNESSUS, a town of Cyzicum, according to Steph. Byz.

ARCTOPHYLAX, from *ἄρκτος*, bear, and *φυλάξω*, I guard, in *Astronomy*, a constellation, otherwise called **BOOTES**.

ARCTOPUS, (*ἄρκτος πους*, Bear's-foot), in *Botany*, Lin. g. 1465. Schreb. 1601. Juss. 223. Class, *polygamia diœcist*. Nat. Ord. *Umbellatæ*.

Ess. Gen. Char. Male, Umbel, compound. *Invol.* five-leaved. *Cor.* five-petalled. *Stam.* five. *Pist.* two abortive. Female (or androgynous), on a distinct plant. *Umbel* simple. *Invol.* four-parted, spiny, very large, containing very many male floscules in the disk, and four female ones in the ray. *Male*, pet. five. *Stam.* five. *Fem.* pet. five. *Styles* two. *Seed* one, bilocular, inferior.

Species 1. *A. echinatus*, prickly-leaved Arctopus. A handsome plant from the Cape of Good Hope; introduced in 1774, by Mr. F. Masson. The leaves are crowded, sinuate, and ciliate with spines on the upper surface disposed starwise at the sinuses; flowers terminating among the leaves. It has the general appearance of Eryngo.

ARCTOSTAPHYLOS. See **VACCINIUM**.

ARCTOTHECA. See **GORTERIA** and **ARCTOTIS**.

ARCTOTIS, in *Botany* (from *ἄρκτος*, a bear, on account of the slagginess of the plant). Lin. g. 991. Schreb. 1340. Juss. 190. Class, *syngenesia polygamia necessaria*. Nat. Ord. *Compositæ; corymbiferae*. Juss. Gen. char. *Cal.* common, roundish imbricate; lower scales more lax, subulate; middle ovate; inmost oblong, scariose, rounded, and concave at the end. *Cor.* compound, radiate; corollules hermaphrodite, very many in the disk; females ligulate, near twenty, longer than the diameter of the disk; proper of the hermaphrodites funnel-shaped; border quinquefid; ends reflex, equal; of the females ligulate, lanceolate, very finely three-toothed; tube very short. *Stam.* of the hermaphrodites; filaments five, capillary, very short; anther cylindrical, tubular, five-toothed, the length of the corolla. *Pist.* of the hermaphrodites, germ scarcely visible; style cylindrical, a little longer than the corolla; stigma simple; of the females, germ ovate-four-cornered, villose, crowned with its proper calycle; style filiform; stigmas ovate, oblong, thickish, erect. *Per.* none. *Cal.* unchanged. *Seeds* in the hermaphrodites none; in the females, solitary, roundish, villose, crowned with a calycle, usually of five leaves; leaflets ovate, spreading. *Rec.* villose or chaffy, flattish. *Obf.* In some of the species the female floscules of the ray are barren, and the floscules of the disk fertile, while in others the former are fertile, and the latter barren. The leaflets of the calycle also vary from four to eight.

Ess. Gen. Char. *Rec.* villose or chaffy; down with a five-leaved crown. *Cal.* imbricate, with scales scariose at the end.

Species 1. *A. calendulacea*, marygold-flowered Arctotis. Of

Of this species we find the following varieties, viz. *α. A. calendula*, with "radiant florets twelve-fold, nearly entire." *β. A. hypochondriaca*, with radiant florets trifid, the middle inflected." *γ. A. trifida*, with "radiant florets four-parted." *δ. A. coruscans*, with "radiant florets three parted, the exterior one trifid." *ε. A. superba*, with "radiant florets barren, five parted; leaves runcinate and rather tomentose." Of the first, the peduncles are villose, nodding, beset with red bristles; ray yellow, purplish underneath, twisted during the night; the corollules of the disk black on the outside, and with black anthers; the outer scales of the calyx spreading, fubulate, short, hispid. Cultivated in 1752, by Miller. The second is supposed to be the same as *A. sulphurea* of Gaertner. The third has spreading hirsute stems, with runcinate thick ferrate leaves; disk of the flower black, with yellow florets, black at top; ray with four or five parted yellow florets, lead-coloured beneath. The fourth variety has not been described. Of the fifth the peduncles are villose, with hyaline bristles, decumbent in the night, but never nodding; ray greenish underneath, converging during the night; corollules of the disk yellow; anthers yellow. These are all annual, and, as well as all the other plants of this genus, are natives of the Cape of Good Hope. *2. A. ferrata* "radiant florets barren; leaves lanceolate, undivided, tooth-ferrate;" stems upright, simple, woody, subpubescent; leaves sessile, scarcely pubescent, somewhat crowded; peduncles terminating, many very long; calyx scarious, yellow; corollas yellow; crown of the seeds white. *3. A. tenuifolia*, "radiant florets barren; leaves linear, undivided, naked;" stems herbaceous, few; leaves filiform or linear, naked; peduncles long, solitary, naked, filiform; bracts small, filiform; calyx imbricate; ray yellow; perennial. *4. A. grandiflora*, "radiant florets fertile; leaves pinnatifid, toothletted, cobwebbed, three-nerved;" ray very large; petals straw-coloured, with a tinge of red underneath, yellowish near the base, with a dark purple mouth; biennial. Introduced in 1774. Discovered by Masson. *5. A. plantaginea*, plantain-leaved arctotis; "radiant florets fertile;" leaves lanceolate-ovate, nerved, toothletted, stem-clasping; leaves tomentose underneath; disk barren; perennial; flowers appear from June till August. Cultivated by Miller in 1768. *6. A. argentea*, silvery Arctotis; "radiant florets fertile; leaves lanceolate-linear, entire tomentose;" flowers yellow, appearing in August; biennial. Found by Masson, and introduced in 1774. *7. A. angustifolia*, "leaves oblong, toothed;" florets of the disk barren; receptacle very woolly. *β. A. spontanea*, a variety in which the whole plant is white, stems creeping, and leaves lyrate with two teeth on each side. *8. A. aspera*, rough arctotis; "radiant florets fertile;" leaves pinnate sinuate, villose, divisions oblong, toothed; stem stiff, perennial, villose, with purple streaks; leaves white underneath; corollas of the ray yellow, with red streaks beneath. There is a variety of this with narrow leaves and orange-coloured flowers. Cultivated in 1731, by Mr. Miller. The preceding eight species have the receptacle villose, but in those which follow it is chaffy. *9. A. paradoxa*; chamomile-leaved arctotis; "radiant florets barren; chaffs coloured, longer than the disk; leaves bipinnate, linear;" chaffs elongate, coloured, almost the length of the ray; whence the flower appears to be a double one. Gaertner has removed this together with the twelfth and thirteenth species to a genus named *Ursinia*. This species was introduced here by Masson in 1774. It flowers in August. *10. A. scariosa*, southern-wood-leaved Arctotis; "radiant florets barren; chaffs equaling the florets of the disk; leaves decomposed;" stem shrubby; all the calycine leaflets obtuse, scarious, screw-shaped, squarrose, spreading. It flowers from April till August, and was introduced in 1774, by Mr. Masson. *11. A. paleacea*, chaffy arctotis; "radiant florets barren; chaffs equaling the

florets of the disk; leaves pinnate, linear;" stem shrubby, branching; peduncles axillary, long; with few linear simple leaves; calyx and corolla yellow, like a chrysanthemum; ray simple, barren. It was cultivated in 1768, by Miller. The flowers appear from April till August. *12. A. dentata*, five-leaved arctotis; "radiant florets barren; leaves pinnate; pinnae pinnatifid, indented;" stem branching; leaves alternate, somewhat rigid, and villose; pinnae recurved; peduncles long, one flowered; flowers small, with the ray purple beneath; annual; flowers appear in July. Introduced by Mr. Haneman, in 1787. *13. A. anthemoides*; "chaffs shorter than the florets; leaves supra-decomposed, linear." This plant, as its name imports, resembles chamomile; ray barren, violet coloured. *14. A. tenuifolia*; "radiant florets barren; leaves linear, undivided, smooth;" stem branching, brownish, smooth; leaves linear, the length of the finger, smooth; peduncles very long, one flowered; calyx hemispherical, smooth, with the inner scales scarious and white; flowers yellow. *15. A. acaulis*, dwarf arctotis; "peduncles radical; leaves lyrate;" about six inches high. Flowers large, yellow, and appear from April to July. Cultivated by Miller, in 1759.

Propagation and Culture. These plants are all natives of the Cape of Good Hope. The annual sorts may be raised from seed, sown in the spring, either in a warm border of light earth, about the middle of April, or in a moderate hot-bed, towards the end of March. In favourable seasons the former will be the strongest plants; but in cold seasons they will seldom ripen their seeds. The latter must be transplanted, when they are fit, into pots; and as soon as they are well-rooted, enured gradually to the open air; they require much water in dry weather: they may also be propagated by cuttings or slips from the roots. The shrubby sorts are propagated by planting cuttings in a bed of light fresh earth in any of the summer months, observing to shade them from the heat of the sun, until they have taken root, and also to frequently refresh them with water. In six weeks after planting they will be rooted sufficiently to be transplanted into pots, which are to be placed in a shady situation, until the plants are new rooted; after which they may be exposed to the open air, till the latter end of October (or later, according to the state of the weather), when they must be removed into the green house. While they continue in the house they ought to have an open and dry situation, and be frequently supplied with water. They will also require to be shifted into other pots, two or three times every summer; and the pots should be often removed to prevent the plants from striking their roots through the holes into the ground. Several of these grow to the height of four or five feet, and as they send off several branches, they require to be frequently pruned. They are seldom without flowers, unless the winter be severe, which renders them very valuable, making a fine variety in the green-house or cape-stove; and when placed out in the summer, they produce flowers in great abundance. See Miller's Dict. by Martyn.

ARCTOTIS. See GORTERIA.

ARCTOUS, in *Entomology*, a species of *PAPILIO* (Danevelt.) that inhabits New Holland. The wings are very entire, and brown; both above and beneath is an ocellar bipupillated mark on the anterior ones; and another on the posterior ones, which is very faintly pupillated above. Fabricius, &c.

ARCTURUM *infra*, a small star of the seventh or eighth magnitude, to the south of *arcturus*; observed by Mr. Flamsteed, and so named by him, whose place is not determined in the British Catalogue.

ARCTURUS, in *Astronomy*, a fixed star of the first magnitude, in the constellation of ARCTOPHYLAX, or BOOTES.

The

The word is formed of *αρκτος*, and *ουρα*, tail, q. d. bear's tail; as being very near it.

This star was known to the ancients, as in the following verse of Virgil:

“*Arcturum, pluvialisque hyades, geminosque triones.*”

See also Job ix. 9. xxxviii. 32. Some critics have doubted whether the Hebrew word *אֲרִכְטָא*, or *אֲרִכְטָא*, *arikh*, denotes this star. For various opinions concerning its meaning, see Schultens, in Job, vol. i. p. 279.

Mr. Hornsby concludes, that *Arcturus* is the nearest star to our system visible in the northern hemisphere, because the variation of its place, in consequence of a proper motion of its own, is more remarkable than that of any other of the stars; and by comparing a variety of observations respecting both the quantity and direction of the motion of this star, he infers that the obliquity of the ecliptic decreases at the rate of 58" in one hundred years; a quantity which nearly corresponds to the mean of the computation framed by Mr. Euler and M. de la Londe, upon the principles of attraction. Phil. Transf. vol. lxxiii. p. i. N^o 14.

ARCTURUS, in *Botany*. See *CELSIA*.

ARCTUS, *αρκτος*, in *Astronomy*, a name given by the Greeks to two constellations of the northern hemisphere; by the Latins called *Ursa Major* and *Minor*, and by us the *Greater* and *Lesser* BEAR.

ARCTUS, in *Entomology*, a species of *CANCER*, that inhabits the seas in most parts of the world. Its specific character is thus concisely defined: scales of the antennæ ciliated, with spines. Fabricius and Gmelin. *Obs.* To this may be added, that the front is retuse, and armed with about ten unequal spines; the thorax oblong, and aculeated, and the posterior part of it, together with the upper part of the body, tuberculated, brown, and spotted with yellow. This is called *Poliquiquixé*, by Maregrave.

ARCUALIA OSSA, in *Anatomy*, a name used by some for the *ossa syncipitis*, by others for the *ossa temporum*.

ARCUALIS FUTURA, among *Surgeons*, denotes the coronal SUTURE.

ARCUANA, in *Entomology*, a species of *PHALÆNA* (*Tortrix*) found in Europe. The wings are pale yellow; on the anterior pair are three curved black bands, and a spot of the same colour; with a black spot in the disk, having three silvery dots upon it. Fabricius and Gmelin. *Obs.* Linnæus describes it as *Phalæna Tortrix alis luteis, fasciis tribus arcuatis, macula nigra tripunctata lineolisque duabus argenteis*. Syst. Nat. Fn. Su. &c.

ARCUANUS, in *Ichthyology*, a species of *CHAETODON*, found on the Indian and Arabian sea coasts. The tail is bifid; twelve spines in the dorsal fin, and body fasciated with brown. This species inhabits the shores among the coral rocks, and feeds on marine worms; it is silvery, back cinereous, with a deep brown or black band on the head, another on the breast, and a third extending from the dorsal to the anal fin. The flesh of this kind is eatable.

The head is large; front, and iris of the eye, white; gape narrow: jaws equal; teeth minute, and wedged; branchiostegious aperture ample; operculum simple, mucronate in the middle; ventral fins long, black; anal fin black; dorsal fins cinereous.

ARCUARIA, in *Entomology*, a species of *PHALÆNA* (*Geometra*). The wings are fuscous, with a thin streak, and a lunated spot of white near the posterior margin. Gmelin. Inhabits Europe.

ARCUATA, a species of *COCCINELLA*. This is of an ovate form; wing-cases red, with four dots, two bands and a dot at the apex black. Inhabits China. Fabricius. It is of the middle size; the body black, and head whitish; thorax black, whitish in front and on the sides.

ARCUATA, a species of *CASSIDA*, that inhabits Rio Janeiro. It is whitish, with a common black disk; border oval, ring, and arched mark behind, yellowish. This is about the middle size; and the breast and abdomen are black.

ARCUATA, a species of *LEPTURA*, in the Linnæan system, that inhabits Europe. The thorax is rounded; shells with four yellow bands, the first formed of three spots; the others curved downwards. Linn. and Donov. Brit. Inf. Gmelin has removed this, and some others of the *Leptura*, to the *Cerambyx* genus; it is therefore *CERAMBYX ARCUATUS* of that author, and is arranged in the division *Calidulum*.

ARCUATA, a species of *CICADA* (*foliacea*, Gmelin. *Membracis*, Fabricius) This insect inhabits Surinam. It is black brown; thorax compressed above, with a yellowish arch. Degeer, and Gmelin.

ARCUATA, a species of *CIMEX*, (*oblongus*, Gmelin). It is black; beak arched; wing-cases whitish, with a white spot, and black arched mark; four of the thighs clavated and red. Degeer. Inhabits Surinam, and is the size of the common house-fly, *Musca domestica*. Gmelin.

ARCUATA, a species of *PHALÆNA*, (*noctua*). The wings are whitish; the curved mark in the middle, and marginal spot behind are black. Fabricius. This moth inhabits Tranquebar, and in size and appearance somewhat resembles *Phalæna albicollis*.

ARCUATA, a species of *VESPA*, that inhabits New Holland, and is described by Fabricius. The body is black, variegated with yellow; the petiole connecting the thorax and abdomen is incurvated, and marked with four yellow spots.

ARCUATA, a species of *MUSCA*, found in Germany. It is testaceous; with two spots and a black curve at the apex of the wing; and a white dot at the tip. Fabricius. This greatly resembles *Musca stylata*. Gmelin also describes another insect under the name *Musca arcuata* (in the subdivision *SYRPHUS*). It is black, with long antennæ; thorax spotted on the sides with yellow, and four curved belts of the same colour on the abdomen.

ARCUATA, in *Ornithology*, a species of *FRINGILLA*, that inhabits the Cape of Good Hope, and is described by Dr. Latham as being of a chestnut colour above, beneath white; head and lower part of the neck black; collar and stripe behind the eyes white. This is also *FRINGILLA arcuata* of Gmelin, but his specific character is certainly less expressive than that of the preceding author; it is likewise *Passer Capitis Bonæ Spei*, of Brisson; *Croissant*, of Buffon; *Moineau du Cap de Bonne Espérance*, of the same author; *Pl. enl.* and crescent finch of Latham, Gen. Syn.

It is the size of a house-sparrow; length six inches; bill black; head and neck before as far as the breast are also black; at the eye begins a streak of white, which passes down on each side of the neck, and growing broader, passes round the fore-part like a crescent; hind part of the neck pale brown; back, scapulars, and lesser wing-coverts, chestnut; the middle coverts black, tipped with white; the greatest coverts and quills brown, edged with grey; tail deep brown; legs brown.

ARCUATION, from *arcus*, a bow, is used by some writers in *Surgery*, for an incurvation of the bones; such as we see in the case of rickets, &c.

ARCUATION, in *Gardening*, a term formerly applied to the practice of raising trees by layers. Switzer observes that in his time, it was the general method of producing such trees as could not be raised from seeds; as the lime, alder, willow, &c. See *LAYERS*, and *LAYING*.

ARCUATUS, in *Entomology*, a species of *SCARABÆUS*, found in Saltsburg. It is black, and glossy; shield rufous

in front; wing-cafes striated with punctures; fulture, marginal dot at the bafe, and abbreviated band inflected towards the fulture, reddifh; breast obfcure; abdomen yellowifh; palpi, antennæ, and legs ferruginous. Moll. naturh. Br. 1160. n. 7. Gmelin.

ARCATUS, in *Ichthyology*, a fpecies of CHÆTODON, that inhabits Brazil. The tail is entire; eight fpines in the dorsal fin; and four white arched bands acrofs the body. Gmelin. This is *Chætodon fufcus arcubus* 5 *nigris* of Muf. ad Fr.; *Guapere* of Maregrave; *Acarauua exigua nigra*. &c. of Willughby. The length is about four inches. See ACARAUNA.

ARCVATUS, in *Ornithology*, a fpecies of TURDUS, that inhabits China; and was firft defcribed by Dr. Latham under the name of the *Crescent Thrush*. Gmelin gives us this fpecific character. Above chefnut; the eye-brows, hue, chin, and vent, white; cheeks, and crefcet on the throat, white; tail rounded; towards the tip black; apex white. But as this author is indebted to Dr. Latham's account of this bird, his character fhould have read "cheeks and crefcet on the throat black." In the Index Ornithologicus the character runs thus;—rufo-fufcus, corpore fubtus fuperciliis lorifque albis, cervice jugulo pectoreque rubentibus, genis manulque fub gula nigris.

The length is eleven inches; bill lead-coloured, pale at the tip; upper parts of the body reddifh brown; over the eye a white line; lore and chin white; cheeks black paffing in a crefcet on the fore part of the neck; on the middle of the back part behind the eye, a patch of loofe white feathers; the hind part of the neck, and the breast reddifh; belly reddifh white; vent plain white; tail long; legs lead-coloured; claws white.

ARCUBALISTA, in the *Military Art*, a kind of *ballifta*, probably made after the fafhion of a bow.

It is mentioned by Vegetius; but the defcription of it omitted by him, as too well known then, though now hard to be gueffed at.

Those who fought with this weapon were called *arcuballiftarii*, fometimes *manuballiftarii*.

ARCUCCIO, ARCVTIO, a machine made of board, covered with pieces of hoops like the tilt of a waggon: ufed in Italy to prevent children from being overlaid and fmothered by nurfes, or others.

Every nurfe in Florence is obliged to lay her child in an arcutio, under pain of excommunication.—See a figure and defcription of the arcutio, given by Mr. St. John, in Phil. Tranf. N^o 412. Abridg. vol. vii. part iv. p. 46.

ARCUDIO, PETER, in *Biography*, a learned Italian; was born in the ifland of Corfu, and flourifhed in the feventeenth century. Having ftudied in the college of the Greeks at Rome, where he made great proficiency in literature, he fo much recommended himfelf by his zeal for the holy fee, that he was fent to Ruffia by Pope Gregory XIV. and by pope Clement VIII., in order to induce that nation to fubmit to the Roman pontiff; but in the courfe of twenty years, during which he remained in the country, his utmoft efforts were only fufficient for obtaining fome indulgences for thofe who obferved the Romifh ritual. After his return he diftinguifhed himfelf by his endeavours to refute the Proteftants on the fubject of the Sacraments; and for this purpofe he publifhed a work, intitled "On the harmony of the weftern and eaftern churches in the adminiftration of the feven facraments," printed at Paris in 1672, 4to. Among his other works were, "On the exiftence of Purgatory," printed at Rome in 1632, 4to.; "On the fire of Purgatory," Rome 1637, 4to.; and "A collection from the Greek theologians on the proceffion of the holy fpirit," Rome 1630, 4to. In all his performances he difcovers talents and erudition, and at the fame time ftrong traces of paffion and

bigotry. They are written in Greek; but without any pretention to Attic elegance. Arcudio was an indefatigable ftudent, and his foie amufement was derived from his library. He died at Rome about the year 1632 or 1633. Nouv. Diét. Hiftor. Fabr. Bib. Græc. l. v. c. 43. § 12. t. x. p. 417.

ARCUEIL, in *Geography*, a town of France, one league from Paris.

ARCULARIA, in *Conchology*, a fpecies of BUCCINUM in the fection *Gullefa*, (that in which the pillar lip is dilated and thickened). It inhabits the Indian fea, and is thus defcribed by Gmelin: fhell plaited, and crowned with papilla. This fhell is fometimes white, cinereous, or brown, with a white ftripe; and is *Arcularia major* of Ramplius, and *Buccinum fufciolum* of Cronovius.

ARCULPHUS, in *Biography*, a theologian of France, flourifhed about the year 690. Havi g vifited, on account of religion, the Holy Land, Conftantinople, Alexandria, and other places, he was thrown by a ftorm, on his return to France, on the coaft of Britain, and hofpitably entertained by Adammon, an abbot. To him Arculphus communicated the refult of his travels; and the account which he obtained from him in converfation formed three volumes, which were publifhed under the title of "Libri de Situ Terræ Sanctæ;" at Ingolftadt in 1619. Cave. Hift. Lit. t. i. p. 599.

ARCUS, in *Entomology*, a fpecies of PAPILIO (Dan. Felt.) The wings are very entire, and blue; anterior ones spotted with white; a large black fpot, terminating in another of white near the margin of the pofterior ones. This kind inhabits Surinaam. *Obf. Papilio Arcus* of Elper is a different infect; viz. *Papilio Alcon* of Gmelin.

ARDA, a fpecies of TERMES, that inhabits Africa. We are chiefly indebted to Mr. Smeathman, who difcovered them in Sierra Leona, for the hiftory of thefe destructive creatures. In their economy they greatly reſemble *Termes fatale*, and *deſtruitor*; for like them they attack and devour provisions, clothes, and furniture, and indeed they are in fuch numbers, and fo rapacious, that where they fettle, few things can eſcape them. They can perforate a piece of timber of the greateſt magnitude, and in a few hours leave nothing but a thin outer ſhell of it. The neſts are cylindrical, and from two to three feet high; they are formed of brown clay intermixed with grafs, and various other vegetables, and have a vaulted dome at top, with a prominent entire margin ſurrounding it. The *larvæ* are the labourers, and have a pale head; moniliform antennæ; no eyes; jaws ſhort and toothed; thorax and abdomen ovate; are of a cinereous lead colour; and the legs pale. The *Pupæ*, are the foldiers to protect them; their head is large and teſtaceous, elevated and gibbous in front, and obtuſely ovated behind; the jaws project, and are forked, black; antennæ moniliform teſtaceous, as long as the head; no eyes; thorax ſmall; abdomen ovated, cinereous lead-colour; legs teſtaceous. *Imago*, or perfect infect, is black; margins of the ſegments of the body white; wings incumbent, black, all the legs pale teſtaceous. Fabricius. The character of this ſpecies, according to the laſt-mentioned author, is thus defined, black; ſegments of the abdomen white at the tips; legs pale. Gmelin adopts this Fabrician defcription.

ARDA, in *Geography*, a town of European Turkey, in Romania, 60 miles ſouth of Filippopol — Alſo a river of European Turkey, which runs into the Mariza, 10 miles north of Trajanepoli.

ARDABIGANA, in *Ancient Geography*, a country of Aſſa, between Aſſyria and Perfarmenia, according to Procopius.

ARDACHAT, in *Geography*, a place in Armenia, ſo called from the name of Artaxias, denominated in the eaſt Ardechier; in which are ſeen ſome ruins of the ancient ARTAXATA.

ARDACHER, or ARDAGGER, a town of Germany, in the arch-duchy of Austria, near the Danube, ten miles south-west of Ips.

ARDAGH, in the county of Longford in Ireland, so called from its elevated situation, at present an insignificant village, but formerly of so much consequence as to have given name to a barony, and to have been a bishop's see. The church is one of the most ancient in Ireland, but cannot be called a cathedral. The see was founded in the middle of the fifth century. In 1658, it was united to the bishoprick of Kilmore; from which it was separated in 1741, and has been since held in commendam by the archbishops of Tuam. *Collectanea de reb. Hiberniæ.*

ARDAL, a town of Norway, 24 leagues north of Christiania.

ARDAMON, or ARDAMA, from *αἶψα*, *I water*, in *Antiquity*, a vessel of water placed at the door of a person deceased till the time of burial, as a token that the family was in mourning, and to serve to sprinkle and purify persons as they came out of the house.

ARDANIS, in *Ancient Geography*, a town of Africa, in Marmarica, according to Ptolemy.

ARDASSES, in *Commerce*, the coarsest of all the silks of Persia; and, as it were, the refuse of each kind. In this sense, they say, the *legis*, the *houfets*, the *choufs*, and the *payas ardasses*, to signify the worst of those four sorts of Persian silk.

ARDASSINES, in *Commerce*, called in France *ablaques*; a very fine sort of Persian silks, little inferior in fineness to the *sourbastis*, or rather *cherbassis*; and yet it is little used in the silk manufactures of Lyons and Tours, because that kind of silk will bear hot water in the winding.

ARDATOF, or ARDATOV, in *Geography*, one of the thirteen districts of the government of Nishnei Novogorod in Russia, situate on the river Tesh, falling into the Occa.—Also, a town of this district, sixty miles S. S. W. of Nishnei-Novogorod. N. lat. 50° 20'. E. long. 43° 4'.—Also, a district of the government of Simbirsk, situate on the Alator.—Also, a town of this district, ninety-two miles west of Simbirsk. N. lat. 54° 45'. E. long. 45° 44'.

ARDAXANUS, in *Ancient Geography*, a river of Illyria near Lissus, according to Polybius.

ARDEA, a town of Persia, according to Ptolemy, and Ammianus Marcellinus.

ARDEA, a very ancient town situate on an eminence south-west of Lavinium; at the time of the arrival of Æneas, it was the capital of the Rutuli, governed by Turnus. The Romans established a colony in this place in the year 311. The territory of Ardea was marshy and unhealthy. In its vicinity was a temple dedicated to Venus.

ARDEA, in *Ornithology*, a genus of the fourth order GRALLÆ. The bill is straight, pointed, long, slightly compressed, with a furrow extending from the nostrils towards the tip; nostrils linear; tongue acuminate; feet four-toed. Gmelin. Dr. Latham gives another character for this genus, viz. a long, strong, sharp-pointed bill; nostrils linear; tongue pointed; toes connected by a membrane, as far as the first joint; the middle claw of some of the species pectinated.

Gmelin divides his genus into five sections, and the following are the characters of those sections, with the species respectively referred to each.

* *Cristata*; rostro vix capite longiore (crested; bill scarcely longer than the head.)—Pavonina & Virgo.

** *Grues*; capite calvo, (cranes; head bald) canadensis grus, americana, antigone, & gigantea.

*** *Ciconia*, orbitis nudis (storks; orbits naked,) ciconia, maguari, & nigra.

**** *Ardeæ*; ungue intermedio introrsum ferrato, (herons; middle claw ferrated inwardly.) dubia, torquata, nycticorax,

grisea, jamaicensis, caledonica, caymenensis, purpurea, major, cinerea, garzetta, leucogaster, rufescens, egretta, agami, cocoi, johanne, hoactli, hohu, herodias, ludoviciana, violacea, eaculea, rubiginosa, ludfonias, comata, erythrocephala, ohula, cyanocephala, candidissima, castanea, squaiotta, galatea, ferruginea, erythropus, striata, virgata, rufescens, bellaris, botaurus, soloniensis, marshigli, danubialis, undulata, brasiliensis, tigrina, lineata, flava, bononiensis, alba, nyca, helias, sacra, atra, purpurata, spadicea, æquinoctialis, cræra, leucocephala, rufa, sinensis, virgata, cana, carunculata, malaccensis, cinramonea, pumila, badia, philippensis, novæ guineæ, cyanopus, maculata, gardeni, senegalensis, exilis & minuta.

***** rostro in medio hiante, (bill, gaping in the middle.) pondiceriana, coromandeliana & scolopacea. Which see respectively.

ARDEA, *exotica aurita*, Petiver Gz. 68. t. 43. f. 2. This is the Lianzan *Colymbus cristatus*.

ARDEÆ, in *Natural History*, the specific name of that kind of ECHINORHYNCHUS which infests ardea cinerea, (the common heron.) It is striated, and has the proboscis clavated. Gœze. Gmelin, &c. *Obs.* The body is conic behind, and sinuated on each side in the middle.

ARDEBIL, or ARDEVIL, in *Geography*, a town of Persia, in the province of Aiderbeizan, or Aderbijan; situate in the middle of a large plain, and surrounded by mountains which form a kind of amphitheatre. It was formerly a strong city, and had considerable trade; but it was plundered and burnt by the troops of Jenghiz Khan, about the year of the Hegira, 619. A. D. 1222. Its grand square, called "Meidan," has a caravanserai, and various conveniences for merchants, who frequent the city, from Turkey, Tartary, Hindostan, and other countries; and near it is a bazar or market, in which are sold the most valuable merchandize of the produce and manufactures of the country, as well as other articles, European and Asiatic. The tomb of Scheik Sefi, a celebrated saint, is an inviolable asylum, frequented by pilgrims from all parts of Persia. Caravans are frequently passing through this town from and to Constantinople and Smyrna. N. lat. 37° 20'. E. long. 47° 5'.

ARDEBIL, LITTLE, a town of Persia, in the province of Faristan, 18 leagues north of Schiras.

ARDECAN, a town of Persia, in the province of Irak, 43 leagues east of Ispahan.

ARDECHE, one of the departments of France, derives its name from a river of the Vivarais, which rises near Vals, and discharges itself into the Rhone, near Pont St. Esprit. This department is one of the seven formed of Languedoc, Cominges, Nebouzan, and Riviere Verdun. It is bounded on the north by the departments of the Dromé, Isere, and Lower and Upper Loire; on the east by that of the Dromé, which is separated from it, from one extremity to the other, by the Rhone; on the south, by the department of Gard; and on the west by the departments of Lozere and Upper Loire. Its superficies is about 1,077,929 square acres, or 550,004 hectares; the population consists of about 273,255 persons; and it is divided into three communal districts. The chief town is Privas.

ARDEE, or ATHERDEE, a small town in the county of Louth in Ireland, much declined in importance. Near it is a mount of great magnitude called Castle-guard. It is artificial and encompassed with a double ditch. It is now all planted with wood, and has a very romantic appearance. The perpendicular height of the mount from the bed of its foundation, is nearly ninety feet, and the depth of the main trench betwixt thirty and forty. The circumference at the top is not less than 140; and round the foundation it is upwards of 600 feet. There appear, from foundations yet remaining, to have been two concentric octagonal buildings upon

upon the summit of it. The Danes are supposed to have been the original authors of this and similar mounts; the design of which, whether for defence, or for burial places, or for holding assemblies of the people, has not been ascertained. Latitude, from observation of Dr. J. Hamilton, $53^{\circ} 50' 30''$.

ARDELICA or ARIOLICA, now *Peschiera*, in *Ancient Geography*, the place in Italy, at the conflux of the lake Benacus with the river Mincius, where Attila had an interview with Leo the Great, and the deliverance of Italy was purchased by the immense ransom or dowry of the prince's Honoria.

ARDELL, MAC, JAMES, in *Biography*, an eminent engraver, was born either in Ireland or in England, of Irish parents, and resided chiefly in London, where he died, June 2, 1765. Bafan calls him "one of the best engravers in Mezzotinto that England ever produced." His works are chiefly portraits, from the most celebrated painters of his time. His best engravings are said to have been from Vanduyke. Two most beautiful prints from this master are, "Time clipping the wings of Love," and "Moses in the ark of bulrushes."

ARDEN, or ARDON, in *Geography*, a county of Swiflerland, and one of the bailiwicks of the Valais.

ARDENBURGH, a town of Flanders, and formerly one of the most considerable maritime towns of the country; but now much decayed; four leagues N. E. of Bruges, and two S. E. of Sluys.

ARDENELLA, a town of Hindoostan, in the country of Coimbatore, forty miles south of Seringapatam.

ARDENNES, a forest of France, of ancient fame for events of chivalry, extends from Rheims to Tournay, and in the north-east to Sedan. Its extent, however, has been very variously assigned. From this forest one of the departments of France derives its name. It is one of the four composed of the former Champagne, Charleville, Sedan, Carignan or Mouson, Philippeville, Mariembourg, Givet, and Charlemont. It is bounded on the north by the department of Sambre and Meuse, and of Jemappe; on the east, by those of Sambre and Meuse, of the Forests, and of the Meuse; on the south, by those of the Meuse, the Marne, and the Aisne; and on the west, by those of the Aisne and of the Jemappes. Its superficies is about 1,029,189 square acres, or 525,281 hectares: the population consists of 253,902 persons; and it is divided into five communal districts. Its chief town is Mezieres.

ARDENSAN, a town of Asia, in the province of Aladulia, thirty-eight miles north-west of Arzingan.

ARDENT, ARDENS, from *ardere*, to burn, something hot, and as it were burning.

ARDENT fever is a burning FEVER, otherwise called CAUSUS.

ARDENT spirits are those distilled from fermented vegetables; thus called because they will take fire and burn; such as brandy, spirit of wine, rum, arrack, &c.

ARDENTES, in *Middle Age Writers*, an appellation given to those afflicted with the *ignis sacer*, or ERYSIPELAS. They are thus called, as seeming to be scorched or burnt with the disease.

Hence also the abbey of St. Genevieve at Paris is called *domus ardentium*, because, as it is said, great numbers were cured of that distemper at the shrine of this saint, in the reign of Louis VI.

ARDEOLA, and ARDEOLA *Naxia*, in *Ornithology*, the names by which Brisson calls the Linnæan *ARDEA minuta*.

ARDERN, JOHN, in *Biography*, contemporary with Guido of Chauliac, acquired considerable reputation for his skill in the practice of surgery and medicine. He was fet-

tled at Newark in the year 1349, when the plague broke out, and continued there until the year 1370, when the fame of his practice occasioned him to be called to London, where he was employed by persons of the first rank and consequence. He was successful in the cure of fistula in ano, having very much improved the method of performing the operation for that complaint, which, before his time, was effected either by the actual cautery, or by sawing through the rectum with a thread, which must have been a very painful operation. His treatise on fistula in ano, the only part of his large work that has been printed, was translated and published by John Read in the year 1588. He invented a new instrument for giving glysters, upon which he valued himself much, and with reason, as it seems to have been productive of much profit to him, "having gained much credit (he says) for his skill in injecting them an hundred times, and in distant places:" whence we learn the practice of giving them was little used or understood in this country at that time. He was very careful to make a good bargain with his patients, before he entered on the cure; "to stipulate for as large a sum as he could get, and to take security for the payment;" a practice, Aikin observes, that prevailed in France at the beginning of the last century. We are told in the eulogy of M. Mareschal, published in the memoirs of the Royal Academy of Surgery, that when he was appointed first surgeon to Louis the Fourteenth, in the year 1703, he generously threw into the fire obligatory bonds from his patients, to the value of 20,000 livres. Friend's *Hist. of Physic*, vol. ii. p. 325. Aikin's *Biog. Mem. of Med.*

ARDERO, in *Geography*, a town of Italy in the kingdom of Naples, and province of Calabria Ultra, seven miles south of Gierace.

ARDERS, in *Agriculture*, a term provincially applied to signify fallowings or repeated ploughings of land.

ARDES, in *Geography*, a narrow peninsula in the county of Down in Ireland, formerly a county of itself. It lies between Strangford lough and the North Channel, and is reckoned tolerably fertile. The people of the whole district, in general, are fishermen, sailors, and farmers, by turns. There are some weavers, and the women in general spin; but there are no bleach-greens, for want of water. The collecting of sea-wrack, for kelp, is also found a profitable employment.

ARDES. See ARDRES.

ARDESIA. See IRISH SLATE.

ARDFERT, in *Geography*, though now a small decayed village, was formerly the principal town of the county of Kerry in Ireland, and, till the union, retained the privilege of returning two members to parliament. It is also a bishop's see, which includes the whole county of Kerry and a small part of Cork. It is supposed to have been founded in the fifth century; and was at an early period so incorporated with Aghadoc as to form but one diocese, which was sometimes called the bishoprick of Kerry. In the civil wars of 1641, the cathedral was demolished, and the town in a great measure destroyed. Soon after the restoration, in 1663, it was annexed to the see of Limerick, and has ever since continued united to it. There are several ruins in the neighbourhood of the church, which is very old; and a round tower, one of the lofliest in the kingdom, built of a dark kind of marble, fell in 1770, tumbling at one crash into a heap of ruins. Ardfert is near the sea, and is 14 miles S. W. from Dublin. Dr. Smith's account of Kerry. Dr. Beaufort's Memoir.

ARDGLASS, a decayed town of the county of Down, in Ulster, Ireland; about seven miles from Downpatrick, situated on a small harbour of the same name. It was, in

the reign of queen Elizabeth, a place of considerable trade; and gave the title of a duke to a branch of the Cromwell family. The duties of its port were let to farm to Henry, at the beginning of Charles the first's reign. The revenues were very considerable. There is a long range of building, called by the inhabitants, the New Works; though they have no tradition of its design or use. It extends 274 feet in length, but is only 20 broad. It has three towers in front joined to it, one at each end, and one in the center. There are also the remains of several other castles, towers, and gates; and within the N. E. point of the harbour, there is a curious natural cave, with a large entrance on the shore. Tour through Ireland — Dublin, 1785.

ARDIA, or ARDEIA, in *Ancient Geography*, a river of Illyria, according to Stephan. Byz. and Strabo.

ARDIERE, in *Geography*, a river of France, which runs into the Saone, in the principality of Dombis.

ARDILA, a river which rises in Spain, and discharges itself into the Guadiana, near Moura, in Portugal.

ARDISIA, in *Botany*. Lin. g. Schreb. 1737. Swartz. prodr. 48. called also *Anguillaria* and *Bahia*. Just. 420. Clafs. *putandria monogynia*. Gen. Char. Cal. perianth one-leaved, five-cleft: clefts subulate, upright, coloured, permanent. Cor. one-petalled; tube short, the length of the calyx; border five-parted; parts lanceolate, acute, spreading, at length reflex. Stam. filaments five, subulate, upright; anthers acute, upright, bifid at the base, converging at top round the style. Pist. germ superior, ovate, very small; style subulate, longer than the stamens, upright, at length ascending; stigma simple, acute, permanent. Per. berry roundish, large. Seed single, roundish, covered with a hard, brittle bark, like a nut.

Ess. Gen. Char. Cal. five-cleft. Cor. one-petalled, five-parted; reflex. Stigma simple. Berry roundish, one seeded.

Species 1. *A. excelsa*, laurel-leaved ardisia; *anguillaria bahamensis*. Gært. fruct. 1. 372. "Racemes axillary, simple; leaves obovate, cartilaginous, ferrate at the edge; clefts of the corolla almost twice as long as the leaflets of the calyx; stamens inserted into the corolla." This tree is a native of Madeira, where it was discovered by Masson, and introduced here in 1784. 2. *A. zeylandica*; "flowers terminating panicle, leaves ovate, subpetioled, entire; stem arboreous;" leaves thick, oval, entire, evergreen, shining, very smooth, alternate, almost sessile, attenuated at the base; flowers at the tops of the branches, in numerous racemes, wheel-shaped, with a long tube of a red colour; berry smaller than that of the preceding species. A native of Ceylon. 3. *A. tenuifolia*. Swartz. prodr. Sloane jam. 2. 98. t. 205. f. 2. "Flowers panicle; leaves elliptical, entire, nerved; stem arboreous." This tree rises to about 30 feet high, having an ash-coloured smooth bark; leaves very smooth, of a dark green, four inches long, on short foot-stalks; flowers purplish. A native of Jamaica. 4. *A. coriacea*; "flowers panicle; leaves oblong, entire, veinless, coriaceous." 5. *A. ferrulata*; "flowers panicle; leaves ovate-lanceolate, acuminate, wrinkled; stem shrubby, pubescent." 6. *A. lateriflora*; "racemes lateral, or axillary compound; flowers umbellose; leaves oblong, acuminate, entire; stem shrubby." 7. *A. parviflora*; "racemes axillary, simple; leaves sessile, lanceolate-ovate, marked with lines; stem shrubby." The four last-mentioned species are natives of the West Indies, and are hitherto only known from Swartz's catalogue.

ARDISTAMA, in *Ancient Geography*, a town of Asia, in Galatia, according to Ptolemy.

ARDMORE HEAD, in *Geography*, a noted promontory on the south coast of Ireland, in the county of Waterford, a little to the east of Youghall bay. N. lat. 51° 56', W. long. 7° 42'. Near this is the village of Ardmore, an ancient episcopal see, and thought to have been a Danish settlement.

Its round tower is still in existence. The name Ardmore, signifies a great eminence. Smith's Waterford and Collection. de Rob. Hib.

ARDOIS, a mountain in Nova Scotia, between Windsor and Halifax, 13 miles N. W. from the latter; reckoned the highest land in the province, and affording a fine prospect of all the high and low lands about Windsor and Falmouth, and the distant country bordering the basin of Minas.

ARDOZZA, a town of Italy, in the kingdom of Naples, and province of Capitanata, 12 miles north of Ascoli.

ARDOR *ventriculi*, a heat of the stomach, usually expressed by the term *HEART burn*, or *CARDIALGY*.

ARDOVIUM, in *Ancient Geography*, a town of Illyria, far from the sea, in the territory of the Liburnians, according to Ptolemy.

ARDOYLE, in *Geography*, a town of France, in the department of Lys, and chief place of a canton in the district of Bruges. The place contains 5,875, and the canton 12,165 inhabitants: the territory includes 77½ kilometres and 4 communes.

ARDRAH, or ARDER, in *Geography*, a kingdom of Africa, on the Slave coast, bordering on Whydah. This kingdom extends for a considerable distance into the northern and interior country, abounds with populous towns and villages, and is in general fertile and well cultivated. The inhabitants are warlike. It is bounded on the west by the Rio Volta, on the east by the kingdom of Benin proper, on the south by the ocean, and on the north-north-west by the kingdoms of Oyo and Alghemi or Uleaim. To the south, or sea coast, Ardrah is very confined; and as it extends northward, widens into the form of a triangle. The coast, commencing four leagues east of Great Popo, and ending at Acqui, comprehends the space of twenty-five leagues, if the province of Jachen, which has a prince of its own, tributary to Ardrah, be included. Bosman and Barbot divide it into Great and Little Ardrah; comprehending under the latter the whole maritime coast, and under the former the interior country. Little Ardrah ascends up the country as far as Offra; and Great Ardrah includes the petty state of Torri. From Whydah to Little Ardrah, the coast is low and flat, but rises by a gentle ascent towards Jachen. North of Jachen, are Offra, Great Foro, and Assem, the capital of Ardrah. The other principal towns are Iajo and Ba. Iajo or Iago has two gates to the south, and is washed by the river on the north, that falls into the Rio de Formosa, or river of Benin, at Ba, where the Dutch have a small fishery. Between all the cities are great roads, and canals are cut from one river to another, which, by the canoes that traverse them, indicate wealth and industry. The vallies of Ardrah are pleasant, and produce wheat, millet, yams, potatoes, lemons, oranges, cocoa-nuts, and palm-wine. In the low and marshy grounds near the sea, they make salt by evaporation of the stagnated water; and with this they carry on a considerable trade with Alghemi and Oyo, by the great canal of Ba, which is the finest in the kingdom. The air is, in general, unwholesome. The vulgar, who can neither read nor write, use a small cord tied in knots, to each of which they affix certain ideas, and thus they convey their sentiments to a distance. The manners, dress, and religion of the Ardrians resemble those of the inhabitants of WHYDAH; and polygamy is equally allowed in both countries. The inhabitants of the sea-coast are employed in fishing, and manufacturing salt; and those of the interior country in husbandry. But they have no ploughs nor instruments of agriculture; the whole labour being performed with the spade and mattock. Instead of a public burying-place, the inhabitants of Ardrah are interred in a family-vault constructed in their own houses.

As to the government of Ardrab, it is monarchical and despotic. The court is numerous and splendid; and the chief-priest is second in dignity, and prime minister in temporals as well as in spirituals. The crown is hereditary; and its revenues arise from heavy capitations on the natives and foreigners, the sale of slaves, duties on foreign trade, taxes upon markets and the necessaries of life, and the confiscation of the estates of governors. Disobedience to the king's commands incurs the punishment of beheading; and the consequence is, that the wives and children of the offender become the slaves of the crown. Insolvent debtors are sold at the pleasure of the creditors; and the violation of the marriage-bed is punished with servitude. The goods proper for importation to Ardrab, are large white beads, glass or crystal ear-rings, gilt hangers, iron bars, sailors' knives, copper bells, guns, copper and brass basons, coloured taffeties, striped printed silks, coloured handkerchiefs, long white horse tails, looking glasses, large umbrellas, brandy, china, Indian silks, gold and silver in dust, with English and Dutch coins. Mod. Un. Hist. vol. xiii. p. 359—374.

ARDRE, a river of France, which joins the Loire at Nantes.

ANDRES, a town of France, in the department of the Straits of Calais, and chief place of a canton in the district of Calais. On an open plain between Ardres and Guisnes, was the celebrated interview of Henry VIII. of England with Francis I. king of France, in 1520. The two kings and their attendants displayed their magnificence with an emulation and profuse expence, which procured it the name of "the field of the cloth of gold." Feats of chivalry, parties of gallantry, and such exercises as were reckoned in that age manly or elegant, rather than serious business, occupied both courts during eighteen days that they continued together. After the wrestling between the French and English was concluded, in which the latter gained the prize, the two kings retired to a tent, and when they had drunk together, the king of England seized the king of France by the collar, saying to him, "My brother, I must wrestle with you;" and he endeavoured once or twice to trip up his heels; but the king of France, who was a dexterous wrestler, twisted him round, and threw him on the earth with prodigious violence. The king of England wished to renew the combat, but was prevented. Robertson's Ch. V. v. ii. p. 110.

—Also a town of France, in the department of Puy de Dome, and chief place of a canton in the district of Issoire, on a small river which runs into the Allier, nine miles south-west of Issoire. The place contains 1636, and the canton 10,582 inhabitants; the territory includes 300 kilometres and 16 communes.

ARDROSSAN, the name of a small promontory on the west coast of the county of Ayr, terminating in a ridge of rocks running out into the sea, twelve miles W. N. W. of Ayr.

ARDSALLIS, a village in the county of Clare, Ireland, near which is the abbey of Quin, the whole building of which, including the cloisters, dormitories, halls, &c. as well as the chapel, is still in a state of tolerable repair, except the roof. The buildings are in a good style of Gothic architecture, well contrived and neatly executed.

ARDSCHIR, or ARTAXERXES BABEGAN, in *Biography*, and *Ancient History*, a Persian king, and founder of a new dynasty, under the appellation of Sassanides; was descended, as his enemies say, illegitimately from an obscure family; or, by the flattery of his adherents, from a branch of the ancient kings of Persia, reduced to an humble station. If we credit the former, his mother was the wife of a tanner, whose name was Babe, and his father a common soldier, of the name of Sassan: from the former, Artaxerxes obtained

the surname of Babegan; and from the latter, all his descendants have been styled Sassanides. However this be, he was well educated, and served with great reputation in the armies of Artaban, the last king of the Parthians: but being driven into exile and rebellion by royal ingratitude, he fled into Persia proper where it is said his grandfather had been governor, and took up arms, in order to assert his right to the throne, as lineal heir of the monarchy, and also to rescue Persia from the yoke of the Parthians, under which they had groaned above five centuries, since the death of Darius. The Parthians were defeated in three great battles; and in the last of them their king Artaban was slain; so that in consequence of it, the spirit of the nation was for ever broken.

Ardschir then assumed the sovereignty, with the title of "King of Kings," which had been enjoyed by his predecessor; and his authority was solemnly acknowledged in a great assembly held at Balch in Khorasan. This great revolution, which established the empire of the Sassanides over Persia, till the invasion of the Arabs and the fatal influence of which was soon experienced by the Romans, happened in the fourth year of Alexander Severus, 226 years after the Christian era. Ardschir having ascended the throne, extended his conquests, and swayed the royal sceptre with singular reputation. Whilst he was active and enterprising in war, he cultivated the arts of peace, and administered the government with equal firmness and lenity. He reformed existing abuses, built new cities, promoted agriculture, distributed the people into classes, under appropriate instructors and magistrates, and abolished the frequency of capital punishments, agreeably to the maxim which he adopted, "that the sword ought not to be employed when the cane would answer the purpose." He likewise restored the Magian religion in its purity, and suppressed idolatry and schism. The articles of the national faith were established by a committee of seven Magi, selected from an assembly of 80,000, convened from all parts of his dominions. Ardschir, not content with his victories over the Scythians and Indians, engaged in a more perilous contest with the Romans, under Alexander Severus; but in his endeavour to regain those provinces of Asia, which had formerly belonged to the Persian empire, he lost the flower of his army, and was obliged to withdraw into his own territories. His domestic security was interrupted by the daughter of his predecessor Artaban, whom he married. Retaining her family hatred against him, she made an attempt to poison him; but her design being discovered, she was condemned to suffer death, but respited on the plea of pregnancy, till she was delivered of a son, afterwards called Sapor, who succeeded his father in the kingdom. One circumstance ought to be mentioned, which much redounds to his honour, and this was his practice of keeping a record or journal, in which all his actions were impartially noted down; and this journal was read to him daily. He likewise drew up a set of maxims, intitled "Rules for living well," adapted to all conditions of society, which were published by one of his successors. They are evidently the dictates of wisdom and benevolence. "When the king renders justice (says Ardschir), the people pay him with love and obedience." "The worst of princes is he who excites fear in the good, and hope in the bad." "The royal authority must be supported by military force; this force must be maintained by money; money can only spring from the culture of the land; and this cannot flourish without justice and good order." Ardschir, according to the most probable account, closed his life about the year 240; after a reign of 14 years. D'Herbelot. Bib. Or. p. 115. Gibbon's Hist. vol. i. p. 317. n.

ARDUBA, in *Ancient Geography*, a city of Dalmatia, which was taken by Tiberius.

ARDUINA, in *Botany*, a plant so named in honour of Pietro Arduin, curator of the æconomical garden at Padua. Lin. g. Schreb. 364. Lycop. Mill. fig. t. 300. Class, *Pentandria monogynia*. Nat. Ord. *Contortæ*. *Apocinea* Juss. Gen. Char. *Cal.* perianth five-parted, erect, acute, small, permanent. *Cor.* one-petalled, funnel-shaped; tube cylindrical, a little curved inwards at the top; border five-parted, acute, spreading. *Stam.* filaments five simple, shorter than the tube, and inserted into the lower part of it; anthers oblong, within the throat of the corolla. *Pistl.* gerin. superior, ovate; style filiform, the length of the tube; stigma bifid, thickish. *Per.* berry globular-oval, two-celled. *Seeds*, solitary, oblong, hard.

Ess. Gen. Char. *Cor.* one-petalled; stigma bifid; berry two celled. *Seeds*, solitary.

Species 1. *A. hispidula*, two-spined arduina; *Lycium cordatum*. Mill. t. 300. A shrubby plant, about four or five feet high. It is armed with strong spines, which appear in pairs or double pairs upon the same foot-stalks, immediately below the leaves. The leaves are heart-shaped, about an inch long; they continue green all the year, and are placed oppositely in pairs. The flowers are small, white, fragrant, in clusters at the ends of the branches, and appear in July and August. It is a native of the Cape of Good Hope, and was cultivated by Miller, in 1760.

Propagation and Culture. It may be increased by cuttings planted in July, and shaded from the sun; when they have taken root, they should be removed into small pots, and placed in the shade, till they have taken root again; they may then be removed to a sheltered situation till autumn, when they must be pot into a green-house, or under a hot-bed frame; this plant being too tender to live in the open air. See Miller's Dict. by Martyn.

ARDUINNA, in *Entomology*, a species of **PAPILIO** described by Fabricius. The wings are indented fulvous, with black spots; the posterior ones, beneath, white, with two fulvous bands, and speckled behind with black. This is *papilio arduinna* of Esper, and inhabits Russia. Obs. In the Fabrician arrangement, it belongs to the section *Satyri*.

ARE, in *French Measure*, is a superficial unit, or a square, the side of which is 100 metres in length, or 10,000 square metres; and the rectilinear metre being 3 feet 11.44 lines, the are will be 94831 square feet. The tenth of an are, called deciare, is a superficies 100 metres long, and 10 broad, or 1000 square metres=9483.1 square feet; and the centiare, equal to 100 square metres, is 948.31 square feet. See **MEASURE**.

ARE, or **A-LA-MI-RE**, in *Music*, denotes a sound in the scale of Guido, which is expressed by the abbreviation A in the musical scale or gammut, and implies the sound in the first space, and on the fifth line, in the base; the third sound below each tenor cleff; and that in the second space, and on the sixth line, in the treble. This is the sound to which all instruments are tuned at an opera concert, or other musical performance. But A in the Italian musical language, when it precedes a substantive, has the power of *in*, as *A battuta*, *A capella*. See the articles.

AREA, in general, denotes any plain surface, whereon we walk, &c.

The word is Latin, importing more properly a threshing floor; and is derived from *arere*, to be dry.

The area, or threshing floor, among the Romans, was sometimes paved with flint stones, but usually laid with clay, consolidated with great care, and smoothed with a large and heavy roller. Virg. Georg. i. 278.

AREA, in *Architecture*, denotes the space or scite of ground, on which an edifice stands. It is also used for inner courts, and those portions of ground.

AREA, in *Geometry*, denotes the superficial content of any figure.

Thus, if a figure, e. gr. a field, be in form of a square, and its side be 40 feet long, its area is said to be 1600 square feet: or it contains 1600 little squares, each a foot every way. Hence to find the area of a triangle, square, parallelogram, rectangle, trapezium, rhombus, polygon, circle, or other figure, is to find the magnitude or capacity thereof in square measure.—To do which, see the article **TRIANGLE**, &c. To find the area of fields and other inclosures, they first survey or take the angles thereof, then plot them on paper, and thus cast up their contents in acres, roods, &c. after the usual manner of other plain figures. The areas of all similar figures are in the duplicate ratio; or as the squares of their like sides, or of any like linear dimensions.

The law by which the planets move round the sun is this; that a line, or radius, drawn from the centre of the sun to the centre of the planet, always sweeps or describes elliptic areas proportional to the times. Thus the sun being supposed in S, and a planet in A, (*Plate 1. Astronomy, fig. 12.*) and letting it proceed in any given time to B; in such progress, its radius AS will have described the area ASB. Suppose again the planet to be arrived to P, then the elliptic space PSD being made equal to the other ASB, the planet will move through the arc PD in the same time as through the arc AB. This law of the planetary motions, discovered by Kepler, lies at the foundation of astronomy. Sir I. Newton demonstrates, that whatever bodies do observe such law in their motions about any other body, do gravitate towards such body.

AREA is also used, in *Medicine*, for a disease which makes the hair fall. The area is a general kind of depilation; and is distinguished into two species, *Alopecia* and *Ophiosis*.

AREA, in *Optics*. See **FIELD**.

AREALU, in *Botany*. See **FICUS RELIGIOSA**.

AREAS, D', an island, in *Geography*, lies on the west coast of the gulf of Mexico, in N. lat. 20° 45', and W. long. 92° 40'.

AREATA, in *Entomology*, a species of **PHALÆNA**, in the *Geometra* family, that inhabits Surinam. The wings are snowy white, with a marginal brown spot on the anterior pair, and four approximate streaks of the same colour on the posterior ones. Fabricius. Gmelin. Obs. This is **PHALÆNA area** of Cramer.

AREATUS, a species of **SCARABÆUS** (*Cetonia* section of Gmelin) found in Virginia. It is black and downy, with the disk of the wing-cases rufous. Fabricius.

AREB, a kind of imaginary money, used in the dominions of the great mogul.

Four arebs are equal to one crou, or 100 lacs; one lac to 100,000 rupees.

AREBICO, in *Geography*, a town of the island of Porto Rico, ten leagues from the town of St. John.

AREBO, or **ARBON**, a town of Africa, and capital of Benin, situate about sixty miles from the mouth of the river Formosa, to which ships of burthen may sail by means of the branches of that river, and collateral creeks. Arebo is represented as a large and populous city, and the centre of the commerce of Benin. The English and Dutch had formerly a settlement, with agents and factors in this place; but the English have neglected theirs, and carried on little or no trade to Arebo for several years past. The city and adjacent country are under the government of a viceroy and council. N. lat. 6° 0'. E. long. 5° 5'.

ARECA, in *Botany*, a genus of palms. Schreb. 1696. Gært. 7. Juss. 3. Class, *palme, monoccia enneandria*. Gen. Char. male flowers. *Cal.* ipathe bivalve; spadix branched; proper

proper perianth three-leaved. *Cor.* petals three, acuminate, rigid. *Stam.* filaments nine, the three outer longer than the others. Female flowers, in the same spadix; proper perianth and petals the same as in the male. *Per.* berry subovate, fibrose, surrounded at the base with the imbricate calyx. *Seed.* ovate.

Ess. Gen. Char. *Cor.* three-petalled; male nine-stamened; female a drupe with an imbricate calyx.

Species 1. *A. catechu*, "fronds pinnate; leaflets folded back, opposite, end bitten." *A. faufil.* Gært. fr. 1. 19. *Pinanga*, Rumph. Amb. 1. 26. t. 4. *Caunga*, Rheed. Mal. i. p. 9. t. 5—8. This palm grows to the height of forty or fifty feet; trunk straight, round, about six or eight inches in diameter, and covered with a smooth ash-coloured bark marked with parallel rings. The fronds spring forth in pairs, decussated, encircling at their base the top of the trunk, and forming an oblong head larger than the trunk itself; they are about six or seven, unarmed, reclining, six feet long, on a stipe four feet in length. From the axils of the fallen fronds issue the sheaths which inclose the flowers and fruits. These sheaths are simple, sharpish, white, coriaceous, thin, streaked, deciduous, nearly two feet in length, six inches broad, and defended by a wide involucre, formed of the dilated base of the frond involving the spadix and spathe; spadix axillary, branched, reclining; spikes linear, containing male and female flowers confusedly mixed; flowers white, very small, triangular, smelling sweet but faintly morning and evening; the calyx of the male is three-leaved, but that of the female six-leaved, imbricate and unequal. The fruit, according to Gærtner, is a berried drupe, or berry, having a thin cuticle and a thick filamentous pulp; shell very thin, brittle, white, with arched red veins; seed of a rounded conical form. A native of the East Indies. The Indian drug formerly called terra japonica, and now catechu, was very generally considered to be an extract prepared from the seeds of this palm; and hence Linnæus in his *Mat. Med.* has referred the catechu to the areca here described; but it is well known at present that this drug is manufactured from a species of mimosa. The trivial name of catechu, as tending to mislead, should therefore be abolished here, and confined to the mimosa. The fruit of the areca (betel-nut) is in general use by the Indians, who cut it into slices, and present it with a portion of terra japonica and shell-lime to their guests in all visits, wrapped in the leaf of a small tree called panno. It is chewed like tobacco, and tinges the saliva of a red colour, hence the following lines in *Misc. Nat. Cur.*

"Quis foliis credat commixta calce tenellis,
Cum fructu hoc Indos vescei, unde ore cruento
Purpureum ejiiciunt succum, tam dentibus atris
Horrendum arringunt, et dentibus ore minantur?"

2. *A. oryziformis*, "fronds pinnate; leaflets smooth, three-nerved." Gært. fr. 1. 20. *A. sylvestris.* Lour. Cochinch. 568. *Pinanga oryziformis*, Rumph. Amb. 1. 40. t. 5. f. c. This is a slender palm, growing to the height of ten feet; fronds more than three feet in length, without prickles; stipules triangular, dilated at the base, coriaceous, embracing the stem and fructification; leaflets two feet long, opposite, triplicate, distant, either pointed, or end bitten; spathe membranaceous, white, stiff; spadix spiked; spikes linear, with the flowers regularly disposed, one female between two males; calyx of the male three-leaved, with subulate unequal leaflets; anolla three-petalled, almost closed; anthers twenty-four, linear, without filaments; calyx of the female permanent; its leaflets broad, obtuse; germ oblong-ovate; style none; stigma three-cleft; berry ovate, red, scarcely

larger than a grain of wheat; pulp or rind thin, fibrose, smooth, adhering to the seed, so that the cell is not invested with its proper coat, as in the preceding species; seed ovate, conical, hollowed, at the base within which is a very minute teat; it is solid, horny, and half an inch in length. A native of Cochinchina, Amboina, &c. Its fruit, though much smaller than that of the preceding, is also used in pauns. Although this palm has the habit and fruit of the areca, yet the stamens and position of its flowers shew it to be very nearly allied to the caryota. 3. *A. oleracea*, cabbage-tree; "leaflets quite entire." Jacq. Amer. 278. t. 170. pi. 135. *Palma altissima.* Mill. Sloane, Browne. The cabbage-tree is the highest of the American palms. Some authors say that it frequently rises to above 200 feet in height, with a trunk no bigger than a man's thigh, and covered with a coat which is impenetrable to a musket ball. Modern writers, however, describe it from thirty to one hundred feet. It is very different from the East Indian areca. The sheaths of the leaves are very close, and form the green top of the trunk, a foot and a half in length. Below this come out green shining spathes, which fall off when the branching spadix bursts forth. The calyx is one-leaved, cut to the middle into three segments. The fruits are oblong, obtuse, berries of a blue purple colour, and about the size of an olive, containing a stone or nut which is oblong, membranaceous, smooth, brittle, inclosing a very hard cartilaginous kernel. Within the leaves, at the top of the palm, is found a white heart of eight or nine inches in circumference, which is called cabbage, and which is esteemed a great luxury by the inhabitants, who eat it either raw as salad, or fried with butter, as well as boiled, and compare its taste to that of artichoke. The seeds of this beautiful tree were first carried to Jamaica by admiral Knowles, when governor of the island, and it has since been cultivated with great care. It is there planted for its beauty, and seldom or never cut down for the cabbage or for any other purpose. The West Indian cabbage-tree was introduced into the king's garden at Kew by Hinton East, esquire, in 1787. There is also a species of palm, called by Solander *Areca Sapida*, which grows spontaneously in New Zealand, and abounds in Norfolk island: but the fructification of it is not known. Martyn's Miller's Dict.

ARECA, in *Ancient Geography*, a town of Syria, in the Com-magene, not far from Antioch, at the foot of mount Taurus.

ARECA, or *Karek*, in *Geography*, an island of Asia, on the east coast of the gulf of Persia, between Abufchiehr and Bender Rigk, one league south-west of Ormus, about three leagues in circumference. It contains only a single village; but the aqueducts cut in the rocks, which still remain, shew it to have been more populous in proportion to its extent. The Dutch attempted to establish a factory and build a fort here, but they were expelled by the Arabs under the conduct of Mir Mahanna, in the year 1765.

ARED, ARAD, or *Arud*, one of the two principal districts of the province of Neged or Nedsjed in Arabia; the other being called Kerje or Kerdsje. This district borders on Hejar or Lahfa to the east, and contains a district called Hanifa, anciently celebrated and still known under the same name. Its dependencies are Aijænc or Aijana, a town which produced Abud al Wakheb the new prophet, and Munsoha. Niebuhr mentions other towns of Ared, among which is Jebrin on the confines of Lahfa. See ARAD.

AREIRA, in *Botany*. See SCHINUS.

AREKEA, see ARKEEKO.

ARELATE, ARELATUS, now *Arles*, in *Ancient Geography*, a city of Gaul, situated to the left of the Rhone, at the place where it divides itself into three branches, near

its mouth, and belonging to the Salyii. At this city Cæsar, when he determined to lay siege to Marseilles, fitted a squadron of twelve long vessels; and Strabo speaks of this place as a commercial emporium. Pomponius Mela speaks of it as one of the richest cities in Gallia Narbonensis; and Pliny, Suetonius, and Strabo represent it as a colony. The colonies conducted thither under the father of Tiberius were detachments of the sixth legion, whence it was called "Colonia Sextorum." When the Roman province was divided into Narbonensis and Vienensis, Arelati belonged to the latter; and in the time of Cæsarotine, it was extended, by means of a bridge, from the left to the right side of the Rhone; and this emperor celebrated on it the Circensian and Olympic games, in 34. The emperors Valentinian and Honorius honoured it with many signal privileges, whence the poet Ausonius called it "the Rome of the Gauls." It became at length the seat of a prætorian præfect, and was in reality the chief city of the Gauls. While its civil state was improved by its population and commerce, and the distinguished patronage of the Roman emperors, its ecclesiastical power was also augmented by the activity of its bishops. By the council of Turin, in 307, it was erected into a metropolis; the fine arts likewise flourished in this city; and the fertility of its territory gave it the appellation of "Therissa," from the Greek word *βρασ*, the breast. The amphitheatre of this city, though it was never completed, is still one of the finest monuments of antiquity belonging to the Gauls. By an inscription it appears, that the shows of the gladiators were exhibited in this place. See ARLES.

ARELLI, in *Botany*. See NERIUM.

AREM, or AL-AREM, a vast mound or dam, which formed a stupendous reservoir above the city Saba, whose rupture caused an inundation, famous in eastern writers. Sale's Prel. Disc.

The word *arem* is Arabic, and literally signifies any mound, or dam, for the containing of water.

AREMBERG, in *Geography*, a town of Germany, in the circle of the lower Rhine, and capital of a duchy to which it gives name, situate on the Ahr in the Eifel, sixteen miles S.S.W. of Bonn, and twenty-six south of Cologne. N. lat. 50° 32'. E. long. 6° 24'.

AREMBUS, in *Ancient Geography*, a town of India, on this side of the Ganges, according to Ptolemy.

ARENA, among the Romans, sometimes signified the same with an amphitheatre; viz. a place where the gladiators had their combat. The word is Latin, and signifies *sand*; because the place was always strewed with sand or saw-dust, to prevent the gladiators from sliding, and to conceal from the view of the people the blood spilt in the combat. Properly speaking, arena was only the pit or space in the middle of those places where the athletic and gladiators performed. The arena was the same thing with regard to the gladiators, that the campus, or field, was to soldiers and armies; viz. the place where they fought.—He who fought in the arena was called *arenarius*. Nero is said to have strewed the arena with gold-dust.

ARENA, in *Architecture*, is the middle or body of a temple, and comprehends the whole space between the antæ and the extreme wall of the building.

ARENA GIUSEPPE, in *Biography*. See GIUSEPPE.

ARENA, in *Geography*, a river of Sicily, which runs into the sea near the town of Mazara.—Also a town of Italy, in the kingdom of Naples, and province of Calabria ultra, sixteen miles east of Nicotera.

ARENA, is also a port in the island of Puna, in Guaiquil bay on the western coast of South America, eight leagues

E.N.E. from Santa Clara, where all ships bound into the bay take pilots.

ARENACEA, in *Entomology*, a species of *PHALÆNA*, in the *Bombæ* family. The wings are yellowish; the first pair sprinkled with black specks above. Inhabits the Cape of Good Hope. Gmelin.

ARENACIUM, or ARENATIUM, in *Ancient Geography*, *Aren*, or *Arib*, the name of a Batavian fort situated on the Rhine, not far from the place where this river separates to form the Vahel. The Batavians, that Aquileius assembled an army in this place to attack the Batavi.

ARENÆ, or ARENÆÆ, a people of Asia Minor in Lydia, in the vicinity of Fayatina.—Arenæ was also a place of Spain in Bætica, on the coast of the Turdetani, extending from the mouth of a small river, where was seated Cuba, to the most eastern part of Bætis.

ARENARIA (from *arena*, *sand*), in *Botany*, sandwort. Lin. gen. 569. Schreb. 774. Gærtn. t. 130. Juss. 301. Class. *dicotyledonata*. Nat. Ord. *Caryophyllei*. Gen. Char. *Cal.* perianth five-leaved; leaflets obovate; acuminate, spreading, persistent. *Cor.* petals five, ovate, entire. *Stam.* filaments ten, subulate, five, alternately interior; anthers roundish. *Pist.* germ ovate; styles from erect reflex; stigma thickish. *Per.* capsule ovate, covered, one-celled, three or six-valved. *Seeds* very many, kidney-shaped. *Obf.* The number of filaments is not constant.

Ess. Gen. Char. *Cal.* five-leaved, spreading; petals five, entire. *Cass.* superior, one-celled, many-seeded.

Species 1. *A. peploides*, sea sandwort, or chick-weed. Hudf. With. Eng. Bot. t. 189. Flor. Dan. t. 624. "Leaves ovate, acute, fleshy;" calyx obtuse, nerveless, Smith; root creeping, long, perennial; stems prostrate, branched, angular, smooth; leaves opposite, sessile, ovate, acute, recurved, smooth, entire; flowers white, appearing in June and July; capsule roundish, three-valved; seeds large, black, obovate. Common on the sea-coast. 2. *A. tetraquetra*, square sandwort; "leaves ovate, keeled, recurved, imbricate four ways;" stems almost upright, and very numerous, shorter than the flowering stems; flowers marked with lines, in a head, upon terminating bifid peduncles. A native of the Pyrenean mountains, flowering in July. Introduced into Kew garden in 1776, by Dr. Ortega. *β. gyp-sophila aggregata*, Lin. sp. 581. Amœn. Acad. 3. 23. Allion. pedem. n. 1718. t. 89. f. 1. Schreb. Aët. Nov. Acad. N. C. 4. 140. A variety with "pointed recurved leaves, and aggregate flowers." 3. *A. biflora*, two-flowered sandwort; leaves obovate, obtuse; stems procumbent, peduncles two-flowered, lateral; its leaves resemble those of wild thyme, roundish, even; two linear bractes at the division of the peduncle, and also on the other pedicel. A native of the high Alps of Savoy and Switzerland near the melting snow. 4. *A. lateriflora*, side-flowering sandwort; "leaves ovate, obtuse; peduncles lateral, two-flowered. Its stem is short, small, simple; leaves smooth, on short footstalks; peduncles single, long, bifid, axillary; corolla longer than the calyx. Discovered by Gmelin in Siberia. 5. *A. trinervia*, plantain-leaved sandwort. Hudf. With. Curt. Lond. fasc. 4. t. 31. Flor. Dan. 429. "Leaves ovate, acute, petiolate, nerved," with the keel of the calyx rough, and obscurely trinerved, Smith; root fibrous, annual, stems about a span high, slender, erect, branched, round, hairy, and beset with leaves; leaves three or five-nerved, ciliated; peduncles one-flowered, long; flowers small, white; leaflets of the calyx lanceolate, acute, keeled, trinerved, rough on the back, and at the edges membranaceous and ciliated; petals obovate, scarcely the length of the calyx; capsule ovate, with an hexifid mouth; seeds small, smooth, black. This,

A R E N A R I A.

like the first, is a British species; it grows in woods and wet shaded situations, flowering in May and June. 6. *A. ciliata*, ciliate sandwort. Flor. Dan. 346. Jacq. Vind. 75. "Leaves ovate, nerved, ciliate, acute;" leaves sessile, pointed, ciliate at the base; corolla twice the size of the calyx; leaflets of the calyx oval, pointed, nerved; the stamens are placed on a circle of nectariferous glands. See Villars' Dauph. 62c. According to Linnæus, it is a native of mount Abraham in the Rhetian Alps (Grifons); and Villars states it to grow on the high mountains of Dauphiné. In the Kew catalogue, however, we are told that it is a native of Iceland, whence it was introduced by Sir Joseph Banks in 1773. 7. *A. balearica*, majorca sandwort. L'Heritier, Stirp. Nov. 29. t. 15. "Leaves ovate, shining, rather fleshy; stem creeping; peduncles one-flowered." A perennial growing in tufts, creeping and taking root at the joints; leaves opposite, petioled, acuminate, entire, nerveless, beset with short hairs; peduncles terminating, solitary, long, erect, one-flowered; flowers large, white, with two opposite, sessile, lanceolate bractes. A native of Majorca and Minorca. 8. *A. multicaulis*, many-stalked sandwort; *alpine*, Hall. helv. n. 6. t. 17. "Leaves ovate, nerveless, sessile, acute; corollas larger than the calyx;" leaves more or less ciliate; flowers very large. Some botanists consider this as a variety of the *ciliata*, and Villars thinks it a variety of the *serpyllifolia*. 9. *A. serpyllifolia*, thyme-leaved sandwort. Hudf. With. Curt. Lond. fasc. 4. t. 32. Flor. Dan. 977. "Leaves ovate, subsessile, rough; calyx hirsute and common, only five-nerved;" root fibrous, small, annual; stems many, about six inches high, spreading, rigid, branched, round, pubescent, dichotomous at the top; leaves small, ovate, pointed, entire, obscurely nerved; peduncles erect; flowers small, white; petals shorter than the calyx; leaflets of the calyx, ovate, acute, hirsute, those that are exterior five nerved, interior three-nerved; capsule ovate, six-parted at the mouth; seeds of a yellowish brown, subrugose. A common British plant; growing on walls, and dry barren or sandy situations. It flowers in June or July. 10. *A. triflora*, three-flowered sandwort; "leaves lance-subulate, ciliate;" branches mostly three-flowered; petals marked with lines, obtuse; its stems are numerous, about four inches high, diffusel, round, pubescent; leaves like those of juniper; peduncles terminating, three-flowered; bractes two, ovate, ciliate; petals obovate, twice the length of the calyx, white, marked with lines; pillil shorter than the stamens. A native of the south of Europe, on rocks, perennial. 11. *A. montana*, mountain sandwort; "leaves linear, lanceolate, rugged; stems barren, very long, procumbent." Its leaves form a tuft about the root, bristle-shaped, spreading, of a shining green; those on the stem are shorter than the internodes, stem-clasping; flower-stems half a foot high, hairy, bearing two or three flowers at the top on long peduncles; calyx three-streaked, with the leaflets separate; petals twice as long as the calyx, white, marked with lines, ovate, and slightly emarginate; fruit long, subcylindric. Linnæus remarks that the flowers are very large, and the fruit pendulous. A native of the south of France, Spain, and the Col de Tende. 12. *A. rubra*, purple sandwort. Hudf. With. *spargula purpurea*. Raij. Syn. 351. "Leaves linear, pointed; stipules membranaceous, sheathing;" seeds compressed, angular, roughish, Smith. Its root is small, fusiform, branched, annual; stems prostrate, divaricate, branched, round, smooth; leaves linear, very narrow, acute, with a sharp point, glaucous or whitish, nearly the length of the internodes; stipules from under the leaves, opposite, stem-clasping, rigid, white, acute, jagged; panicles terminal, dichotomous; flowers of a bluish flesh-colour; the divisions of the calyx lanceolate,

hirsute, with dry edges; petals shorter than the calyx; capsule ovate, three-valved; seeds many, brown, angular, rough, with little tubercles. A British plant growing in sandy fields, and flowering in July and August. 13. *A. marina*, sea sandwort. Flor. Dan. t. 740. *A. media*. With. *A. rubra*, β . sp. pl. 606. Light. Hudf. 193. (*media*) β . *A. media*. sp. pl. exclusis synonymis. *Alpine* *spargulae facie media*. Ray. Syn. 351. "Leaves semicylindrical, fleshy, smooth; stipules scariose, sheathing; seeds compressed, marginated, smooth." Smith. Its root is spindle-shaped, annual; stems prostrate, very smooth; stipules similar to those of the *rubra*; flowers larger, of a pale flesh or purplish colour; capsule three-valved, longer than the calyx; seeds in β having a dilated membranous white striated margin. This species and the *rubra* are found sometimes to approach as closely to the *spargula* as to the *arenaria*. A British plant, grows in pastures and sandy grounds washed by the sea, flowering in June and July. 14. *A. bavarica*, Bavarian sandwort. "Leaves semicylindric, fleshy, obtuse; petals lanceolate; peduncles terminal; mostly binate." Its stems are prostrate, with many slender divided branches, and a pair of leaves at each joint; these leaves are oblong, narrow, and of a pale green; petals white, acuminate, sometimes fringed and purplish; seeds minute, compressed, black, shining; perennial. A native of Bavaria, Monte Baldo, and Little St. Bernard. 15. *A. gypsophiloides*, "leaves linear, short, at the root bristly; panicle subpubescent; petals lanceolate;" root perennial; stem erect, jointed, a span high; stem leaves largest, and longer than the internodes; panicle terminating, brachiate, dichotomous; petals three times as long as the calyx. A native of the Levant. 16. *A. saxatilis*, rock sandwort; *alpine*, Gmel. fib. iv. p. 157. t. 63. f. 2. "Leaves subulate; stems panicled; leaflets of the calyx ovate, obtuse;" root perennial; stems exceedingly numerous, forming a very thick tuft half a foot high, and very full of flowers. A native of France, Germany, Switzerland, &c. 17. *A. verna*, vernal sandwort. Hudf. With. Lightf. Eng. bot. 512. "Leaves subulate, rather obtuse; stem panicled; petals obovate, longer than the calyx, three-nerved; nerves distant, equal, Smith." Root perennial, long, much branched; stems numerous, five or six inches high, round, somewhat pubescent and viscid, branched at the base, and panicled above; leaves erecto-patent, subulate, rather obtuse, three-nerved beneath, and above channelled, connate, and spreading at the base; bractes ovate, three-nerved, short; peduncles, erect, pubescent; leaflets of the calyx acute, hairy, three-nerved; margins membranous; petals longer than the calyx, obovate, obtuse; anthers fleshy; capsule longer than the calyx; cylindrical, three-valved; seeds almost kidney-shaped, rough, compressed. It grows on mountains in England, Scotland, and Wales, flowering from May till August. 18. *A. hispida*, hispid sandwort; "leaves subulate, hispid underneath;" this bears much affinity to spurry: stems simple, with scattered hairs; leaves opposite, flat, with a few hairs underneath; panicle first dichotomous, then branching, with alternate peduncles. A native of Montpellier. 19. *A. juniperina*, juniper sandwort, Smith. Icon. ined. 2 t. 35. "Leaves subulate, thorny; stems erect, calyx striated; capsules oblong;" root perennial; stems numerous, half a foot high, slightly pubescent; leaves spreading, connate at the base, three-nerved, almost triangular, mucronate; root leaves very short, blunt, without prickly points; flowers in terminal panicles, on smooth, filiform, one-flowered peduncles; bractes acute, three-nerved, with a scariose waving edge; leaflets of the calyx lanceolate, mucronate, three-nerved; petals obovate, lanceolate, obtuse, white, scarcely twice as long as the calyx, streaked;

capsule three-valved, obtuse, shining; seeds small, compressed, roundish, black; native place unknown. 20. *A. tenuifolia*, fine-leaved sandwort. Hedd. With. Eng. Bot. 219. Flor. Dan. 389. *Alfne tenuifolia*, Ray Syn. 350. "Leaves subulate, acute; stem paniced; capsules erect, three-valved; petals lanceolate, shorter than the calyx;" its root is small, annual; stems erect, commonly smooth, paniced, dichotomous; leaves three-nerved, connate, and dilated at the base; peduncles capillary, erect; flowers small, white; leaflets of the calyx lanceolate, acuminate, three-nerved, membranaceous at the edges; petals very small, lanceolate, obtuse, half the length of the calyx; stamina very short; capsule cylindrical, three-valved; seeds small, nearly of the shape of those of the *A. rubra*. It flowers in June, and grows in barren sandy fields, especially in Cambridgeshire, Norfolk, Worestershire, and Oxfordshire. 21. *A. laricifolia*, larch-leaved sandwort; "leaves bristly; stem nakedish above; calyx rather shaggy;" root perennial; stems many, half a foot high, harsh, and rough; peduncles roughish, one-flowered; calyx marked with lines, pubescent; petals ovate, large, marked with lines, twice the length of the calyx; fruit long, cylindrical. A native of France, Switzerland, &c. but not of Britain; the *A. laricifolia* of Withering being, according to Dr. Smith, a variety of the *A. verna*. 23. *A. striata*, striated sandwort. Allion pedem. n. 1712, t. 26. f. 4. Villars' Dauph. t. 47. "Leaves linear, erect, pressed to the stem; calyx oblong, striated." Allioni and Villars differ much in their representations of this species, and we have not the means of deciding which is right. It is a native of Switzerland. 23. *A. fasciculata*, cluster-flowering sandwort. Jacq. Aust. 2. t. 182. *Stellaria rubra*, Scop. Carn. n. 538. t. 17. "Leaves subulate;" stem erect, stiff; flowers in clusters; petals very short; root annual; stem four inches high, pubescent; leaves linear, acuminate, erect, subcylindrical; flowers in bunches, dichotomous, on very short pedicles; leaflets of the calyx long, subulate, striated; petals very small, ovate, white; capsule half the length of the calyx. A native of the south of France, &c. introduced here by Mr. Zier in 1787. 24. *A. grandiflora*, great-flowered sandwort. Allion. pedem. n. 1711. t. 10. f. 1. "Leaves subulate, flat, stiff; radical leaves crowded; stems one-flowered." A native of the south of France, Switzerland, &c. Gouan remarks, that Linnæus and Allioni have made their descriptions from dwarf plants. His description of the plant consequently differs much from theirs. See Gouan illust. p. 30. 25. *A. austriaca*, austrian sandwort. Jacq. Aust. 3. t. 70. Allion. ped. n. 1708. t. 64. f. 2. "Stems under shrubby, prostrate, thin, herbaceous, and erect; leaves subulate; flowers twin; petals emarginate;" perennial. Stems dichotomous or trichotomous; leaves linear, subvillose, pointed, connate at the base; stems, peduncles, and calyx villose; capsule five-valved, shorter than the calyx; seeds brownish. A native of the mountains of Aultria, Switzerland, and Piedmont. 26. *A. liniflora*, flax-flowered sandwort. Jacq. Aust. 5. t. 445. "Stems erect, branched below, under shrubby; leaves subulate; flowers twin;" perennial. Stems short, distorted. perennial; branches annual, simple, erect; peduncles subpubescent, terminal, generally two; leaflets of the calyx lanceolate, two-freaked; petals obovate, white. A native of the southern countries of Europe. 27. *A. recurva* Allion. ped. n. 1713. t. 89. f. 3. Ger. prov. 405 n. 7. t. 15. f. 1. "Radical leaves heaped, recurved, subulate; stem simple, bearing about three flowers;" perennial. Stems three inches high, simple; leaves towards the root aggregate, (in tufts,) brittle-shaped; stem-leaves setaceous, unequal, flattish above, with the edges rolled back, two-freaked. A native of Provence and

Alpine mountains. 28. *A. obtusa*. Allion. ped. 1714. t. 64. f. 4. "Leaves linear, flat, obtuse; calyx viscid;" perennial. Stems procumbent, branched; leaves connate, soft, green; branches usually terminating by two flowers on long peduncles; leaflets of the calyx ovate-lanceolate, green; petals entire, scarcely larger than the calyx; fruit conical, five-valved. A native of the high Alps of Switzerland. 29. *A. lanceolata*. Allion. ped. n. 1715. t. 26. f. 5. "Leaves lanceolate, three-nerved, acute; calyx lanceolate, three-nerved;" root perennial, dark coloured, tough, creeping; stems filiform, in a tuft, branched, creeping, beset with fine hairs; leaves lanceolate, acute, with three raised nerves; corolla spreading, large; stamens alternately shorter, longer than the petals; anthers small, purple; fruit conical, five-valved. This and many other species of the genus are involved in much confusion, from which they cannot easily be extricated. 30. *A. dianthoides*, Smith ic. ined. t. 16. "Leaves linear, scabrous at the edge; flowers capitated; bractes ventricose, longer than the peduncles." *Alfne*, &c. Tournesf. cor. 17. Root woody, perennial; stems a foot high, six or seven jointed; leaves connate; stem clasping, acute, serrulate, and rough at the edges; flowers monoecious, in a head or terminal spike, on short filiform peduncles, fenced with the bractes; petals obovate with claws; three times as long as the calyx. Found in Armenia by Tournefort. 31. *A. cucubaloides*, Smith ic. ined. t. 17. *Alfne orient.* &c. Tourn. cor. 17. "Leaves linear, scabrous at the edge; panicles dichotomous, pubescent; petals obovate;" root perennial; stems a foot high, round, smooth; leaves connate; stem clasping, acute; panicle spreading, terminating, viscid; flowers the size and appearance of those of common flax; bractes acute, scarious at the edge, only one fourth of the length of the peduncles; leaflets of the calyx ovate, acute, keeled, striated, viscid, pubescent; petals white, with subpellucid streaks; five of the stamens longer than the others; capsule one-celled, ventricose, shining, clothed with the calyx; seeds numerous. Found in Armenia by Tournefort.

Propagation and Culture. The greater part of these plants are natives of Europe, and most of them affect mountainous situations. They have neither size nor brilliancy to be generally cultivated in gardens; many of them, however, are neat elegant plants. The perennial sorts may be easily increased by slips, or parting the roots; but both these and the annual sorts may be propagated from seeds. They require no other care than what is necessary for all hardy vegetables. Martyn's Miller's Dict.

ARENARIA, in *Ancient Writers*, is used for sand-pits, or ground out of which sand is dug. Vitruvius.

ARENARIA, in *Conchology*, a species of HELIX of the minute kind, found on the sandy shores of Armenia. This shell is whitish, glossy, with extremely thin longitudinal striae; spire reversed and hemispherical. Spengl. Gmelin. &c.

ARENARIA, a species of SERPULA that inhabits India and Africa. The shell is articulated, entire, distinct, and flattish beneath. Gmelin. It is white or whitish, and sometimes marked with pale brown undulated rays; the inside is smooth, outside cancellated; the striae about one hundred in number, and frequently nodulous. The shell is twisted spirally. *Obs.* Gmelin doubts whether it may not be a *Teredo* instead of *Serpula*.

ARENARIA, in *Entomology*, a species of VESPA that lives in the sands in America. This insect is black; thorax spotted with yellow; abdomen fasciated on each segment with a six-dentated yellow band; the first linear, and interrupted. Fabricius, Gmelin, &c. *Obs.* Gmelin has another species of *Vespa*, under the same specific name, viz. *sphex arenaria*

arenaria of Linnæus: Fn. Suec. which he removes to this genus. It is black, with four yellow bands on the abdomen and two yellow dots on the first segment. This is found in Denmark and Sweden, and belongs to the section of the *VESPA*, genus *Crabro*, in Gmelin's arrangement.

ARENARIA, a species of *FORMICA* found in the moveable sands in Barbary. This is a large kind; has a great ovate head, and subglobose pubescent abdomen. The specific character is this, black; thorax impressed behind and furnished with two spines; ends of the legs piecous. Fabricius and Gmelin.

ARENARIA, in *Ornithology*, the name given by Brisson to the bird called by Linnæus and Gmelin, *Tringa Interpres*; and *Turnstone* or *Sea Dotterel*, by English writers.

ARENARIA, a species of *TRINGA* that inhabits the sandy shores of Europe and the Caspian sea. The beak and legs are black; body grey, beneath white; lores grey. This is *calidris grisea minor* of Brisson, Gmelin, &c.

ARENARIUM, in *Antiquity*, gladiators who combated with bealls in the *arena* or amphitheatre. The *arenarii* were slaves of the lowest rank, so that, though manumitted, they were not capable of being Roman citizens. They were the same with what were otherwise called *BESTIARIUM*.

ARENARIUM, in *Ecclesiastical Writers*, denotes a cemetery or burying-ground. The *arenaria* were properly a kind of pits, or holes under ground, wherein the ancient Christians not only buried their dead, but held their religious assemblies, in times of persecution. Baron. Annal. and Du-Cange.

ARENARIUS, in *Entomology*, a species of *CURCULIO* resembling *C. ligustici*, but only about half the size of that insect. The head is hoary; thorax granulated, and with the legs, black; wing-cases connate, grey, and striated with punctures. Herbst apud Fuesli: inhabits Berlin.

ARENARIUS, a species of *CIMEX*, very common in the northern parts of Europe. It is black; wing-cases cinereous; wings white. Linnæus, Fabricius. *Obs.* This belongs to the section *oblongus* in Gmelin's arrangement.

ARENARIUS, in *Ornithology*, a species of *TETRAO*, called by Latham the sand grouse. The collar, belly, and vent are black; two middle tail-feathers rather tawny, the rest fasciated with brown and grey, and white at the tip. Pallas Nov. Comm. Gmelin, &c.

According to Dr. Latham, this bird is bigger than a partridge; length, more than nineteen inches; bill, blue-grey; tip black; head pale ash-colour; crown and nape clouded yellowish-grey; chin deep yellow, terminated by a triangular black mark about the middle of the neck; the feathers of the throat and neck singularly truncated, and glossy like those of a dove; the upper parts of the neck and body testaceous white; each feather surrounded with a brown border, encircling an oval yellowish spot; on the lower part of the neck a crescent of black; the breast is white; belly, vent, and thighs, black; wings hoary, with a deep yellow spot on the secondaries; quills brownish, obliquely white at the base; the tail has sixteen feathers; the two middle ones pointed and yellowish, crossed with brown lines; the others brown with grey lines; the tips white; legs slender, feathered to the toes, and are short, naked, and callous beneath; claws black; behind is a spur, which turns inwards, and is prominent and pointed. The female is rather bigger; of a paler yellowish colour throughout; dotted on the head, neck, and throat, with black, and fasciated with the same on the back; the markings are less distinct than in the male, but it much resembles it.

This species is found only in the middle of the deserts extending towards the Caspian sea. It is very common about

Affracan in summer, and passes the winter in Persia. Their food is the seeds of various kinds of astragali, and particularly of the species *Alopecuroides*, *Cicer*, and *Phytodes*. They are seen in pairs in June; and as they drink much water, are obliged to frequent those parts of the desert where it is found. It is said they go to the pools three times in the day, when they are so eager that they do not mind the sportsmen, though at other times they are very shy. They are no where more common than about the famous fountains at Barle chuduk; fly like pigeons; and have a shrieking though not unpleasant cry. The eggs are bigger than those of a pigeon, and white.

ARENAS ISLANDS, in *Geography*, are islands that lie 20 leagues north from Cape Condecedo, or the North-west point of Campeachy bay in the gulf of Mexico.—Also four islands, situate on the coast of Terra Firma, on the north coast of the Spanish main or South America, before the bay of Bamba, west from St. Martha river and harbour; and sheltering the bay from all winds.

ARENATA, in *Entomology*, a species of *PHALÆNA*, in the *Geometra* family. It is of the middle size, and inhabits Tranquebar. The wings, above, are without spots, beneath, speckled and streaked with brown. Fabricius.

ARENATION, a term that has been used by some physicians to denote a kind of dry bath, in which the patient only sits with his feet in dry sand.

ARENÆ, in *Ancient Geography*, a town of Lycia, according to Ptolemy.

ARENATOR, or *ARRENDATOR*, is a term used in Livonia, Esthonia, and some other parts of the Russian empire, for a farmer of the farms, or a person who contracts with the crown for the rents of the farms; and the crown arendator is one who rents an estate belonging to the crown. The term "Arende" denotes both the estate that is let out, and the sum for which it is let. Arende-corn, is corn paid as rent by admodiation.

ARENONCK, in *Geography*, a town of Brabant, belonging to the French department of Deux Nèthes, and chief place of a canton in the district of Turnhout, two leagues east of Turnhout. The place contains 2482, and the canton 6,662 inhabitants: the territory includes 237½ kilometres and 6 communes.

ARENDSÉE, a town of Germany, in the circle of Upper Saxony and old mark of Brandenburg, ten miles west of Seehausen.

ARENE, or *AERNÉ*, in *Ancient Geography*, a town mentioned by Pausanias (Messen. c. 2.); and, according to him, founded by Arpharæus, the grandson of Perseus, but he does not give its situation. Stephanus of Byzantium mentions two cities of this name, one in Messenia, and the other in Triphylia.

ARENIVM, a place of Italy, upon the Via Flaminia, near the Adriatic gulf.

ARENOSA, in *Conchology*, a species of *MUREX*, found on the sandy shores of India. The whorls of the spire are decussated with ribs, the first of which is large, and the three outermost ones smooth; beak, acute; aperture, oval; and the lip toothed exteriorly. Gmelin, &c. This is a minute shell.

ARENOSA, in *Entomology*, a species of *SPHEX*, found in Germany. It is black and hairy; second and third segment rufous; wings as long as the body. Fabricius, Gmelin, &c.

ARENOSA, in *Natural History*, a species of *MADREPORA*, that inhabits some parts of Africa. It is white; the flars contiguous, flattish; rather large and ochraceous. Brander, &c.

ARENOSUS, in *Entomology*, a species of *SCARABÆUS*, in the section *Trox* of Gmelin. The thorax is somewhat

canaliculated; wing-cases, striated; body obscure. Fabricius. Inhabits Saxony; and resembles scarabeus fabulosus, but is not more than half its size.

ARENSBERG, in *Geography*, a town of Germany, in the duchy of Westphalia, fortified with a castle; the capital of a county incorporated with the electorate of Cologne. It is situated on the Rier, and divided into the old and new town; 48 miles north-east of Cologne, and 40 S. S. E. of Munder. N. lat. $51^{\circ} 23'$. E. long. $7^{\circ} 41'$ —Also, a town in the circle of Westphalia, and county of Schauenburg, 5 miles north of Rinteln.

ARENSBURG, a sea-port town and district on the south side of the island of Oesel in the Baltic sea, separated from Ambrook island by a bay, and belonging to the government of Riga or Livonia.

ARENSWALDE, a town of Germany, in the circle of Upper Saxony and new mark of Brandenburg, 94 miles north-east of Berlin, and 50 north-north-east of Kustrin. N. lat. $53^{\circ} 10'$. E. long. $15^{\circ} 28'$.

ARENTIA, in *Ancient Geography*, a river of Italy, near the frontiers of Etruria and Liguria. It sprung to the north-east of Luna, and discharged itself into the sea near Carara.

ARENUSA, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Calabria ultra, 16 miles W. of St. Severina.

AREOLA, or AREOLA mamillaris, in *Anatomy*, the coloured circle which surrounds the nipple. See BREAST.

AREOLA, in *Conchology*, a species of BUCCINUM, that inhabits the Mediterranean, and India. This shell is sometimes smooth; sometimes striated; and the striae are larger, or smaller in different specimens: its specific character is thus defined by Linnæus and Gmelin; shell somewhat striated, with four bands of square spots; aperture dentated; beak recurved. This is *areola* of Rumphius, and *faburon* of Adanson. The length is three inches.

AREOLA, a species of TROCHUS described by Chemnitz and Gmelin. It is convex, and striated transversely; white, with square reddish spots; umbilicus crenulated; the whorls of the spire are separated by a white streak. Its native country is not ascertained.

AREOLA, in *Natural History*, a species of MADREPORA without stalk; undulations dilated, and in some places doubled, with narrow truncated margin. This is madrepora simplex subpedunculata, stella crispato laciniosa lamellis crenulatis, of Pallas, and madrepora (areolata) conglomerata, infracribus dilatatis, dissepimentis exilis subinæqualibus, ambulacris duplicatis hinc dilatatis, lamellis denticulato crenulatis of Solander and Ellis. Petiver calls it corallium album fungoides ovale; and Sloane, fungus lapideus undulatus. It is amaranthus marinus of Valent; morille of Molin.; cariophilloides of Argenville; mycedium cavatum undulatum of Hill: and cerebrites of Kuorr. It inhabits India and South America.

AREOLATA, in *Conchology*, a species of PATELLA, resembling *P. magellanica*, but is more depressed, and broader at the base; and by the direction of the striae which cross each other, is divided into triangular spaces; the longitudinal striae are about twenty-one in number; the habitat is unknown. Gmelin defines its specific character in these words; shell pyramidal and reddish grey, with very thin circular striae, crossed by others which are longitudinal; vertex violet.

AREOLATA, in *Ichthyology*, one of the varieties of perca summana, an Arabian fish described by Forsk. Fn. Arab.—Gmelin thus mentions it, areolata γ Perch, body whitish-cinereous, with yellowish-brown spots. See PERCA SUMMANA.

AREOMETER. See ARÆOMETER.

AREON, in *Ancient Geography*, a torrent which discharged itself into the Persian gulf, near a place called Gogana.

AREONESUS, an island of the Euxine sea, called by Pomponius Mela, *Aria*. The inhabitants were deemed excellent archers.

AREOPAGUS, or ARÆOPAGUS, in *Antiquity*, a sovereign tribunal at Athens, famous for the justice and impartiality of its decrees; to which the gods themselves are said to have submitted their quarrels.

Authors are divided, as to the reason and origin of the name: some imagine areopagus the proper name of the court of justice, which was situate on a hill near the citadel in Athens; and that in this court the senate of that illustrious city assembled.—Others say, that areopagus was the name of the whole suburbs of Athens, wherein stood the hill on which the court was built; and the name areopagus seems to countenance this last opinion; for it signifies literally, the hill or rock of Mars; from $\alpha\alpha\sigma$, *hill*, and $\alpha\epsilon\sigma\iota\sigma$, *belonging to Mars*. In effect, the denomination might either arise hence, that the areopagus was built in a place where had been a temple of Mars; or, because the first cause pleaded there was that of this god, who was accused of killing Halirrhothius the son of Neptune, and tried here before twelve gods, and acquitted by a majority of voices; or, finally, because the Amazons, whom the poets feign to have been the daughters of Mars, when they besieged Athens, pitched their tents, and offered sacrifices to the god of war in this place.

This tribunal was in great reputation among the Greeks, so that it was denominated “the most sacred and venerable tribunal;” and Socrates says that it was deemed so sacred, that if those who had been vicious were elected into it, they immediately gave up their former practices, and conformed to the rules of the senate, because they could not resist the authority of example, but were constrained to appear virtuous. The Romans themselves had so high an opinion of it, that they trusted many of their difficult causes to its decision. Demosthenes says, that in his time neither plaintiff nor defendant had any just reason to be dissatisfied with their proceedings. Innocence, summoned to appear before it, approached without apprehension; and the guilty, convicted and condemned, retired without daring to murmur. Authors are not agreed about the number of the judges who composed this august court. Some reckon thirty-one, others fifty-one, and others five hundred; in reality, their number seems not to have been fixed, but to have been more or less in different years. By an inscription quoted by Volaterranus, it appears they were then three hundred. At first, this tribunal only consisted of nine persons, who had all discharged the office of archons, had acquitted themselves with honour in that trust, and had likewise given an account of their administration before the *logistæ*, and undergone a very rigorous examination. Those who were admitted members of this assembly were strictly watched, and their conduct was scrutinized and judged by the court to which they belonged, without partiality. Trivial faults did not escape censure. A senator, it is said, was punished for having stifled a little bird, which from fear had taken refuge in his bosom: he was thus taught, that he who has a heart shut against pity should not be allowed to have the lives of the citizens at his mercy. The members of this august assembly were not allowed to wear crowns, or to obtain any marks of honour conferred by the people, as a recompence for their services; nor were they allowed to solicit any; but they were rewarded by a bounty from the public, which they called $\alpha\epsilon\sigma\iota\sigma$; and they had also three oboli for every cause in which judgment was given.

The

The areopagites were judges for life.—They never sat in judgment but in the open air, and that in the night time; to the intent that their minds might be more present and attentive; and that no object, either of pity or aversion, might make any impression upon them. However, some maintain, that the building in which the areopagites assembled, was not wholly uncovered; and they observe, that among the ruins, large stones had been found, whose joints are in the same angle with the pediment that must have been used for a covering. Mr. Spon, who examined the antiquities of that illustrious city, found some remains of the areopagus still existing in the middle of the temple of Theseus, which was heretofore in the middle of the city, but is now without the walls. The foundation of the areopagus is a semicircle, with an esplanade of 140 paces round it, which properly made the hall of the areopagus. There is a tribunal cut in the middle of a rock, with seats on each side of it, where the areopagites sat, exposed to the open air. At first they only took cognizance of criminal causes; but in course of time their jurisdiction became of greater extent. This court is recorded as the first that sat upon life and death; and the trial of wilful murder seems to have been the original design of its institution. In later ages, all incendiaries, assassins, conspirators, deserters of their country, treasons, and most capital causes in general, fell under its cognizance. The opinion which the state entertained of the wisdom, gravity, and sanctity of its members, gained for them an unlimited power; inasmuch that, according to Solon's regulation of this assembly, the inspection and custody of the laws, the management of the public funds, the guardianship of young men, and the education of youth according to their rank, were committed to them. Their power extended to persons of all ages and sexes, to punish the idle and profligate, and to reward the sober and virtuous, according to their own pleasure. For this purpose they were empowered, by entering and examining private houses, to condemn every useless person as dangerous, and every expence not proportioned to the means of the citizen as criminal. Besides they took cognizance of religious matters, blasphemy, contempt of holy mysteries, the erection and consecration of temples and altars, and the introduction of new ceremonies: nevertheless, they interfered in public affairs only in cases of emergency or danger. As this assembly exhibited the greatest firmness in punishing crimes, and the nicest circumspection in reforming manners; as it never employed chastisement till advice and menaces were slighted; it acquired the esteem and confidence of the people, even whilst it exercised the most absolute power. Its meetings were held three times in every month, viz. on the 27th, 28th, and 29th days, but on any urgent business, the senators assembled in the royal portico.

The Court was divided into several committees, each of which took cognizance of separate causes, if the multiplicity of business would not allow time for them to be brought before the whole senate: and this was done by lots, that the causes might not be pre-judged. In crimes that concerned religion or the state, the power of this court was limited to preparing the matter for a trial; and it then made its report to the people, without coming to any conclusion. The accused then had it in his power to offer new pleas in his defence; and the people named orators to conduct the prosecution before one of the superior courts.

Trials in the Areopagus were preceded by tremendous ceremonies. The two parties, placed amidst the bleeding members of the victims, took an oath, which they confirmed by dreadful imprecations against themselves and families. They called to witness the Eumenides, who, from a neighbouring temple dedicated to their worship, seemed to listen to

the invocation, and prepare to punish the perjured. They then proceeded to the trial; requiring all pleadings to be conducted in the simplest terms, without exordium, epilogue, or appeal to the passions. After the question had been sufficiently discussed, the judges silently deposited their suffrages in two urns, one of brass called the urn of death, and the other of wood called the urn of mercy. This mode of giving votes was afterwards abandoned, and they were delivered in public, by calling their calculi or flints upon two tables, one for those that acquitted, and the other for those condemned: when the numbers were equal, an inferior officer added, in favour of the accused, the suffrage of Minerva, so called, because, according to an ancient tradition, this goddess being present in the court of areopagus at the trial of Orestes, gave her casting vote to turn the scale of justice. In some causes the sentence of this court was not final; but an appeal might be made to the courts to which they respectively belonged.

This court is said by some, as by Plutarch and Cicero, to have been instituted by Solon; but others carry it much higher, and assert it to have been established by Cecrops, about the year before Christ 1556, or by Cranaus, one of his successors; maintaining also, that Solon only made some new regulations in it, increased its power and privileges, and made it superior to the ephetae, another celebrated court instituted by Draco.—In effect, Demosthenes himself, in his oration against Ctesiphon, owns himself at a loss on the point: "The institutors of this tribunal (says he), whatever they were, whether gods or heroes," &c.

This court preserved its authority uncorrupted and entire till the time of Pericles, who, not having borne the office of archon, could not be admitted into it; and therefore employed all his art and interest to undermine it. This at length he so effectually did, that his contempt of it served to lessen its dignity: and from that time the same excesses and vices which were practised in the city gained ground among the areopagites themselves, until by degrees they lost all their former power and esteem.

When the apostle Paul was summoned to appear before the court of areopagus, under a charge of being "a setter forth of strange gods," (see Acts, xvii.) and consequently of having violated the law that subsisted at Athens, which made it capital to introduce or teach any new gods, his conduct exhibited an admirable union of wisdom and fortitude. In such a case an impostor would have retracted his doctrine to save his life; and an enthusiast would have lost his life, without trying to save it by innocent means. St. Paul did neither the one nor the other: he availed himself of an altar which he had found in the city, inscribed, "To the unknown God;" and pleaded that he did not propose to them the worship of any new god, but only explained to them one whom their government had already received; "whom therefore ye ignorantly worship, him I declare unto you:" by this he avoided the law, and escaped being condemned by the Areopagus, without departing in the least from the truth of the gospel, or violating the honour of God. "An admirable proof, in my opinion," says Lord Lyttleton, (on the Conversion of St. Paul, in Misc. Works, vol. ii. p. 60.) "of the good sense with which he acted, and one that shews there was no mixture of fanaticism in his religion." See ALTAR.

AREOPOLIS, in *Ancient Geography*, a city of Arabia Petræa, situate on the river Arnon, and called also Ar and Rabbath-Moab.

AREOSTYLE. See ARÆOSTYLE.

AREOTICS. See ARÆOTICS.

AREQUIPA, or ARQUIBA, in *Geography*, is one of the largest

largest cities in Peru South America; and was founded by Don Francisco Pizarro, in 1539. It stands in the valley of Quilca, about twenty leagues from the sea, in a fertile country. Near it is a dreadful volcano. The air is very temperate, and the best in the country; but it has been four times laid in ruins by earthquakes. It is very populous, and well built, contains a convent and two nunneries, and had a college of Jesuits. It has a bishoprick in Lima, and lies 290 miles south by east from that city. S. lat. $16^{\circ} 40'$. W. long. $75^{\circ} 30'$.

ARES, a town in Germany in the county of Tyrol, eleven miles south-west of Tyrol.

ARES, a term framed by Paracelsus, to express a hidden disorder, in the three principles of things, from which each being receives its proper form and substance, and assumes its own specific nature, not that of any other being. Paracelsus distinguishes the *ares* into *archicæ*, which is *natural*; and *chemicæ*, which is *artificial*. See ARCHÆUS.

ARESCHE, in *Geography*, a town of France, in the department of Jura, and chief place of a canton in the district of Arbois, six miles east of Arbois.

ARESKUTAN, is the name of a solitary mountain of Jamland, in Norway, about four or five Swedish miles from the highest Alps which separate Norway from Sweden; and it is said to be 6162 English feet above the nearest rivers.

ARESTI, FLORIANO, in *Biography*. See FLORIANO.

ARESTINGA, an island of the Indian ocean, towards Kerman and the town of Dulcinda, supposed to be the Liba of Ptolemy.

ARETALOGI, in *Antiquity*, a sort of philosophers, chiefly of the cynic or stoic tribe, who having no school or disciples of their own, haunted the tables of great men, and entertained them in their banquets with disputations on virtue, vice, and other popular topics. Pitiseus Lex. These are sometimes also denominated *circulatores philosophi*. Calvin. Lex. Jur.

ARETÆUS of *Capadocia*, in *Biography*, an early Greek writer, practised medicine at Rome, but at what period is not exactly known. That he lived after the time of Andromachus, physician to the emperor Nero, is evident from his mentioning the Theriaca, a medicine invented by that writer, and that he did not live long after that time, Haller conjectures from the purity of his style. Dioscorides, who lived a little before the time of Galen, quotes Aretæus. Hence we may infer that he flourished some time between the reigns of Vespasian and Adrian. Eight of his books, on the causes, signs, and method of treating acute and chronical diseases, have been preserved, but all of them, as it appears, mutilated and imperfect; Ætius having quoted several passages from his works, which are not found in the copies that have come to our hands. The works, however, are in high estimation, as well for the accuracy with which the diseases are described, as for the judicious practice recommended in curing them. Aretæus was a bold and decisive practitioner, and made much use of hellebore and other drastic medicines. He is one of the earliest writers who recommends cantharides for raising vesications on the skin. The translation of the works into Latin by Junius Paulus Crassus, was published in 8vo. at Venice in 1552, and continued in use, being frequently republished, until 1723, when Dr. Wigan of Oxford made a new version. This was published in folio, with the Greek text in the opposite page, and enriched with a preface, notes, and critical dissertations. A Greek edition by Jacobus Goupylus, was printed at Paris in 1554, 8vo.; and reprinted by H. Stephens. A Greek and Latin edition was published by Henischius, in 1603, fol. It has been since edited by Boerhaave in 1731, with additional notes and observations; and again by Haller in 1771, with further

emendations. An English translation of Aretæus from the original Greek, was published by Dr. Mead in 1785, 8vo. Cæcellina Vite Illustr. Medic. Haller Biblioth. med. pract.

ARETÆ, the daughter of Arillippus of Cyrene, was a female of talents and learning, entailing her to a place in the catalogue of philotopæers. She flourished about 360 years before Christ, professed and taught the doctrine of her father, and presided over the Cyrenaic school after his death. Læct. l. ii. § 86. Clem. Alex. Strom. l. iv. p. 523. Brucker's Hist. Phil. by Enfeld, vol. i. p. 188.

ARETÆ, in *Entomology*, a species of PAPILLO (*Nymph. Gme.*) The wings are entire, brown, with a rufous band; on the posterior pair both above and beneath a streak of whitish dots. Fabricius. Inhabitans Aultria.

ARETHAS, in *Biography*, bishop of Cæsarea, was the author of a commentary upon the Revelation, collected, according to Mill, from that of his predecessor Andrew, and from the works of Irenæus, Hippolytus, Gregory Nazianzen, Cyril of Alexandria, and others. Cave, Mill, Lardner, and others, refer this writer to the middle of the sixth century; but Casimire, Oudin, and Fabricius, are of opinion that he lived in the tenth century. Dr. Lardner observes that he cites most or all the books of the New Testament, and hence infers, that he received all the same books which we acknowledge; he also quotes Solomon's song. Cave. H. L. t. i. p. 520. Lardner's works vol. v. p. 274.

ARETHION, in *Antient Geography*, a navigable river of Epirus, which had its source in Athamania, and discharged itself into the Ambracian gulph near Ambracia. Ptolemy calls this river Arachthus. Livy. l. xxxviii.

ARETHUSA, in *Botany*, a genus of plants belonging to the natural order *Orehideæ*. Lin. g. 1014. Schreb. 1373. Juss. 65. *Orebidion*. Mitch. 19. Class, *gynandria diandria*. Gen Char. Cal. spathe leafy, perianth none. Cor. ringent, petals five, oblong, subequal, two placed more outward than the others; all converging into a helmet. Nectary one-leaved, tubular at the base, within the bottom of the corolla, two-parted; lower lip reflex, broad, wrinkled, the length of the petals, hanging down forwards; upper lip linear, very tender, fastened to the style, lobed at the top. Stam. filaments two, very short, sitting on the top of the pistil; anthers ovate, compressed, covered with the folding of the inner lip of the nectary. Pist. germ oblong, inferior; style oblong, incurved, clothed with the inner lip of the nectary; stigma funnel-shaped. Per. capsule oblong-ovate, one-celled, three-valved, gaping at the angles. Seeds, numerous, chaffy.

Eff. Gen. Char. Nectary tubular, within the bottom of the corolla; lip fastened to the style.

Species, 1. *A. bulbosa*, bulbous rooted arethusa, "root globose; scape sheathed; spathe two leaved." It grows in watery places, as bogs, &c. in Virginia, Carolina, and Canada. Introduced here 1784, by Mr. William Young. 2. *A. opbioglossoides*, adders-tongue leaved arethusa. Helleborine virg. &c. Pluk. Alm. t. 93. f. 2. Cypripedium. Gron. virg. 1. 110. Hort. Cliff. 430. "root fibrous, leaf of the scape oval; spatheaceous; leaflets lanceolate." A native of the same places as the preceding species. 3. *A. divaricata*, lily-leaved helleborine or arethusa. *Serapius*, Gron. virg. i. p. 184. helleborine lillii folio, &c. Catæb. car. i. t. 58. "root subpalmate; leaf of the scape and leaflet of the spathe lanceolate; outer petals rising." It grows in the same countries and situations as the first and second species. 4. *A. capensis*, cape arethusa, supp. 425.; "bulb round; stem two-leaved; simple, one-flowered; leaves two, alternate, sheathing, awl-shaped." Found at the cape of Good Hope by Thunberg. 5. *A. villosa*, villose arethusa, supp. 405.; "bulb round; leaves ovate, ciliate, pubescent." This was

also discovered at the Cape by Thunberg. 6. *A. ciliaris*, ciliated arethusa; orchis burmanniana, syst. ed. 13; "root fleshy; leaf kidney-shaped, orbiculate; lip ciliate;" bulb villose, double; scape six or seven inches high; leaf one, subradical, heart-shaped, nerved, stem clasping; flower one, nodding; germ hairy, the length of the petals; upper petals rather erect, lanceolate; two lower longer, lanceolate, ensiform; horn of the nectary moon-shaped, shorter than the germ; lip large, subtripartite, ciliated, middle division bifid; raments fetaceous, longer than the lip itself; column of the stamens rising half the length of the petals. Found at the Cape, by Sparrman; introduced in 1787, by Mr. Masfon. 7. *A. biphurcata*, two-feathered arethusa, Smith, ic. ined. t. 23.; "scape sheathed; spathe cowl'd; the two lower petals elongated, bearded on the upper side;" stem simple, erect, a foot high; radical leaves linear-lanceolate, equitant at the base; stem-leaves six or seven, membranaceous, acute, sheathing, alternate; flower terminal, solitary, erect, purple: germ inferior, obconical, smooth: three outer petals of the corolla longer, irregular: the upper somewhat vaulted, acute, naked; the two lower ones subulate, broad at the base, bearded on the upper side near the top with club-shaped hairs, or stipulate glands; the two inner petals shorter, opposite, somewhat rhomb-shaped, acute, netted with purple veins; roots fasciated or in bundles.

Propagation and Culture. The three first are hardy and will endure the rigour of our climate. The three next must be kept in the conservatory or cap-slove. The last must be preserved in the bark stove. But none of these plants have yet been introduced into England, except the first and sixth. Considering their places of growth, in bogs and watery places, it will be no easy matter to preserve them long with us. See Martyn's Miller's Dict.

ARETHUSA, in *Entomology*, a species of PAPILIO (*Nymphalis*, Gm.). The wings are dentated, above brown, with a band spotted red; the anterior with a single ocellus on each side. Inhabits Germany, and is very like the Semela.

ARETHUSA, in *Ancient Geography*, a town of Asia, in Syria, situate on the river Orontes, south-east of Epiphania, between this town and Emefa, and distant from Antioch, according to Antonine's Itinerary, 16,000 paces. It was a bishop's see.—Also a town of Macedonia, in the district called Amphaxitis.—Also, a town of Judæa, mentioned by Josephus, and restored by Pompey to its original inhabitants.

ARETHUSA, a lake of Asia, in the greater Armenia, south of the mountain Niphates, and not far from the source of the Tigris, which traverses it. According to Pliny (H. N. l. vi. c. 27.) it exhales nitrous vapours.—Also a fountain of Greece, in Bœotia, not far from the city of Thebes.—Also, a fountain in the island of Eubœa.—Also, a fountain of Magna Græcia, in Brutium, now the gulf of Squilaci, according to Cassiodorus.—Also, a fountain of the isle of Ithaca, called Cypara, according to Stephanus Byz.—Also, a famous spring in the island of Sicily, near Syracuse. For an account of the fable relating to this fountain and Alpheus, see ALPHEUS. Virgil refers to it in his 10th Eclogue.

"Extremum hunc, Arethusa, mihi concede laborem—
Sic tibi, cum fluctus interlabere Sicanos,
Doris amara suam non intermiscet undam."

"Thy sacred succour, Arethusa, bring,
To crown my labour: 'tis the last I sing.
So may thy silver streams beneath the tide,
Unmixed with briny seas, securely glide."

The water of this fountain, formerly celebrated for its softness and sweetness, is now brackish, and fit for no pur-

pose but washing linen. It is defended from the sea by a wall, and almost hidden by houses on every side. Rubbish has choked up its salutary spring; the waves have found a passage through the rocks, split by repeated earthquakes; and not a fish is to be seen in it. After an earthquake it has been left dry; and at other times its waters have been tainted by subterraneous effluvia. Its fountain-head probably lies among the neighbouring hills.

ARETHUSA, in *Mythology*, was one of the Hesperides.

ARETHUSUS, in *Entomology*, a species of PAPILIO. (Dan. Fest. Gmel.) The wings are very entire, black, with blue spots; posterior pair dotted with sanguineous red beneath. Fabricius. *Obs.* This is *papilio arethusa* of Cramer; and *papilio laodamia* of the same author is supposed by Gmelin to be a variety (β) of this species likewise.

ARETHYREA, ARETHUREA, in *Ancient Geography*, a name given by Homer to a small country of Peloponnesus, near Achaia.

ARETIA, in *Botany*, so called by Haller, in honour of B. Aretius, a clergyman of Berne in the fifteenth century, the teacher of botany to the famous Gesner; Haller, *helv. t. 8. f. 1. Lin. gen. n. 195. Rich. 108. Schreb. 256. Juss. 96. Clafs. pentandria monogynia. Nat. Order of precie; lysimachie Juss. 96. Gen. Char. Cal. perianth, one leaved, bell-shaped, semiquinquefid, bluntish, and permanent. Cor. monopetalous, salver-shaped, tube ovate, length of the calyx, contracted at the neck; limb five-parted; divisions obovate: Stem. filaments five, conic, in the middle of the tube very short; anthers erect, sharpish, within the throat of the corolla. Pist. germ roundish; style filiform, length of the tube; stigma flat-headed. Per. capsule, one-celled, five-valved. Seeds five, Jacq.; three and five, Reich.*

Ess. Char. Cor. salver-shaped, five-cleft, tube ovate; stigma flat-headed; caps. one-celled, globular, with about five seeds.

Species, 1. *A. helvetica*, imbricated aretia; diapensia helvetica, Lin. Spec. 203. Mant. 205. Jacq. vind. 303. androface diapensia, Villars' Dauph. ii. 472. "leaves imbricate, flower subsessile; root perennial, with innumerable stems forming thick tufts, covering the rocks where it grows, each branch terminated by one flower; fruit roundish with angles; seeds longer, darker, and in number fewer than in primula and androface, and germ containing rudiments of five seeds two or three of which are abortive. A native of the western Alps of Switzerland, and of Dauphiné. 2. *A. alpina*, linear-leaved A. Androface caulescens, &c. Amæn. Acad. andr. aretia, Villars' Dauph. "leaves linear, spreading, flowers pedunculated;" tufts of leaves, linear, harder, and wider than the other; fruit often abortive, with sometimes ten or twelve seeds in dry airy situations. Haller enumerates three varieties; (α) harder and the leaves almost smooth; fruit round, compressed, five-valved; (β) more tender, leaves more villose, not spreading so much, and shorter; flower rose-coloured with the leaves and calyx covered with a close white scale; (γ) flowers purple; these are found on different parts of the Swiss Alps; the second on Mount St. Bernard, Simplon, &c.; the third in the Grisons, and valley of St. Nicholas. Villars gives three varieties, which he suspects to be distinct species: (a) hoary, with the hairs of the leaves branching, flowers white, often terminating: (b) hirsute, hairs of the leaves branching, flowers purplish, axillary, (c) hirsute, hairs of the leaves simple, flowers white, with a purple eye: the second forms fine tufts of red flowers on Mount St. Bernard, 1260 toises above the level of the sea, and carries vegetation to the height of nearly 1700 toises, not much less than two miles. This species occurs also in Austria: this and the foregoing were introduced in

1775, by Drs. Pitcairn and Fothergill. 3. *A. vitaliana*, grass-leaved aretia: *vitaliana perennis*, &c. Sest. epist. t. 10. f. 1. *fedum alpinum*, &c. colum. cephr. 2. t. 65. f. 1. Rai. hill. 1044. 1. *Sanicula alpina*, &c. Pluk. Alni. t. 108. f. 6. "leaves linear, recurved; flowers subsessile;" a small plant, always lying on the ground; root perennial, with distinct tufts, forming roses like the *fedum*; corolla deep yellow, with a long tube, with five large glands in the opening; fruit round and small, with five kidney-shaped seeds. Native of the Pyreæes, the High Alps, between the Valais and Italy, and in Dauphiné; introduced here in 1787, by Monf. Cels.

These are all small perennial alpine creeping plants; the little stems are covered with leaves; the flowers are axillary, and almost solitary.

Propagation and Culture. These plants are preserved in gardens with difficulty. They require a shady situation: and the seeds, if preserved, should be sown as soon as possible. They may be also propagated from offsets or slips, and by parting the roots. Martyn's Miller's Dict.

ARETINI, in *Ancient Geography*, a people of Italy, in Etruria. Pliny distinguishes them into three classes, viz. Aretini veteres, Fidentæ, and Julientes; and their territory was divided into three different districts.

ARETINO, FRANCIS, in *Biography*, see Francis ACCOLTI.

ARETINO, GUIDO. See GUIDO.

ARETINO, JOHN, surnamed *Tortellius*, a grammarian, flourished about the middle of the fifteenth century, and was librarian and chamberlain to pope Nicholas V. He was the author of a grammatical work "De potestate literarum," and of a life of Athanasius; and though not very much distinguished by literary attainments, he never dishonoured learning by fierce and injurious disputes. The treatise of Laurentius Valla, "De latinâ elegantia," was dedicated to him. Voss. de Hist. Lat. l. iii. c. 7. Gen. Dict.

ARETINO, LEONARD, a learned historian, derived his name from Arezzo, where he was born of the family of Bruni, in the year 1370. Having acquired under the instruction of Emanuel Chrysoloras an accurate acquaintance with the Greek language, he was distinguished as one of the first restorers of Greek literature in Italy. By his reputation for talents and learning, aided by the good offices of his friend Poggius, he obtained the office of secretary of the briefs under Innocent VII. which he enjoyed during this and the four succeeding pontificates. When pope John XXIII. whom he accompanied to the Council of Constance in 1415, was deposed, he returned to Florence, and devoted his leisure to the gratification of his taste in the pursuits of literature, and in the composition of various works. He was afterwards employed in several embassies on the behalf of the republic of Florence, of which he was chancellor; and by his economy, or rather parsimony, he amassed a large fortune. He died at Florence in 1444; his funeral was magnificently celebrated at the public expence, and whilst his funeral oration was pronounced, the orator, by order of the magistrates, crowned the coffin with laurel. Aretino was regarded as one of the first men of his age for genius and learning, and as one of those who formed the epocha of the revival of literature. The Latin inscription on his tomb in the church di St. Croce, is to this purpose: "Since Leonardo passed out of life, history mourns, eloquence is mute; and it is said, that neither the Grecian nor Roman muses could refrain from tears." His works, both as original compositions and translations, are very numerous: to the former class may be referred "The history of ancient Greece," 8vo. Venice, 1543; "An attempt to supply in

part the defect of the second Decad of Livy," in two books, 4to. Augsb. 1537; "An history of the transactions of his own times in Italy, from 1378 to 1440," 4to. Lyons, 1539; "History of Florence," fol. 1746; "On studies and letters," republished by Naude in 1642; and "Epistles," republished at Florence, with notes, and the life of the author, by Mehus, 8vo. 1741, which work is much valued for the historical information which it contains. His latin translations are several of Plutarch's lives, and Aristotle's ethics and politics; the latter of these translations was dedicated to Duke Humphrey of Gloucester, and the copy presented to him by the translator, most elegantly illuminated, is now in the Bodleian library at Oxford. His "History of the Goths," published, to his dishonour as an original work, but discovered to be a translation of the Greek of Procopius; and "Three books of the Punic war," published in 8vo. in 1537, another plagiarism, as the work is for the greatest part a translation from Polybius, though the author denies this in his preface. Erasmus, speaking of Aretino's Latin style, says, "that his works are written neatly and with ease, and sometimes are even Ciceronian; but his language wants strength, and his Latinity is not always pure." Voss. de Hist. Lat. l. iii. c. 5. Gen. Dict. Novy Dict. Hist.

ARETINO, PETER, denominated "the scourge of princes," was the natural son of Louigi Bacci of Arezzo, and born in the year 1492. His education was mean, and his knowledge did not extend even to the learned languages. The reputation which he acquired as a writer, was principally owing to the virulence of his satire. His career in this way commenced with attacks on the clergy; and he then proceeded to ridicule princes and sovereigns, whom by this kind of talent he held in such awe, that some of the first potentates in Europe, and particularly Charles V. and Francis I. became his tributaries. When the former came from his unfortunate and ill-concerted expedition into Africa, he purchased the silence of this profligate satirist by the present of a chain of gold that cost 100 ducats: "a trifling gift indeed," said Aretino, "for so great a folly!" So arrogant did his success make him, that he caused to be issued a medal, bearing on one side "the divine Aretino;" and on the other, a figure of himself, seated on a throne, receiving the envoys of princes. Some of the Italian princes, however, less compliant than these two kings, found the threat of cudgelling the satirist a more effectual mode of silencing him than pecuniary bribes. Aretino, when it served his interest, was no less profuse in his adulation than in his abuse; and whether he praised or blamed, his object was personal emolument. His works in prose and verse were very multifarious; but their distinguishing characteristics were far-fetched conceits and coarse jests, blended with some ingenious turns, and expressed in pointed and forcible language. They have now sunk, together with his ill-earned fame and influence, into merited oblivion. The performances which have entailed the chief disgrace on his memory by their licentiousness and indecency, were his "letters and sonnets, accompanying the sixteen postures," engraved by Marco Antonio of Bologna from the designs of Julio Romano; and his "Regionamenti," or discourses of a similar call, in three parts. Although his writings abound with indecent levities sufficiently culpable, they contain no avowal of irreligious principles; and therefore the charge of atheism brought against him, must have been founded on his satirical and unwarrantable abuse of the clergy. It may appear inconsistent and even astonishing that this licentious author was also employed in writing the lives of St. Catharine of Sienna and of St. Thomas Aquinas, and composing penitential hymns and other devotional pieces; but he thus contrived to separate religion from good

good morals. Arctino died at Venice in 1556, at the age of 66 years. An Italian wit wrote an epitaph for him, the turn of which was, "that he calumniated every one but God, whom he spared only because he did not know him." Gen. Dict. Nouv. Dict. Hist.

ARETOLOGY, ARETOLOGIA, that part of moral philosophy which treats of virtue, its nature, and the means of arriving at it.

AREVA, in *Ancient Geography*, now the *Adaja*, a river of Spain in the country of the Arevaci. See ADAJA.

AREVACI, a people of Spain, who inhabited the interior part of the country to the south-east of the Vaccæans, from the source of the river Nareva to the mountains in which was the spring of the Durus or Duero.

AREVALILLO, in *Geography*, a river of Spain, which runs into the Adaja, a little above Arevalos.

AREVALOS, a town of Spain, in Old Castile, on the confines of Leon, between the rivers Adaja and Arevalillo, six leagues S.E. of Medina del Campo.

AREUS, in *Ancient Geography*, a small river on the coast of Asia, in Bithynia.

AREZIBO, in *Geography*, a town of the island of Porto Rico, three leagues from St. John.

AREZZO, anciently ARRETIVM, or ARETIUM, a town of Italy, in the duchy of Tuscany, the see of a bishop, suffragan of the archbishop of Florence, but exempt from his jurisdiction. It lies on a declivity in the midst of a fertile plain, producing grain, wine, and oil. In the time of the Romans, it was one of the twelve principal cities of Etruria; but it was over-run and desolated by Sylla, because in the Social war it was leagued with the enemies of Rome; and he conducted thither the inhabitants who were denominated Aretini Novi. For some time it formed an aristocratic republic; afterwards it became incorporated with the territory of the Florentines; and at length was transferred to the dominion of the Medici, with the rest of Tuscany. This city was the native place of Mæcenæ, Guido Arezzo, Aretin, and Petrarch. It is situated thirty-four miles south-east of Florence, and twenty-five E. N. E. of Sienna. N. lat. 43° 28'. E. long. 11° 50'.

ARFARA, one of the smaller of the Shetland islands.

ARFAS, in *Ancient Geography*, a town of Judæa, in the half-tribe of Manasseh, on the other side of the Jordan. According to Josephus, it was the boundary of Trachonitis to the east.

ARFEUILLE, in *Geography*, a town of France, in the department of the Allier, and chief place of a canton, in the district of Cusset, four leagues east of Cusset, and four south of Donjon.

ARG, a river of Germany, in Suabia, passes to Wangen, and discharges itself into the lake of Constance. It is the Argus of the Latins.

ARGA, a river of Spain, rises in the Pyrenées, in the frontiers of Lower Navarre, traverses Pampeluna, and joins the Arragon over against Villa-Franca.

ARGA, or *Algjar*, a small town of Arabia Petræa, in the government of Medina, seated on the Arabic gulf, and west of Medina, to which it is considered as a sea-port. Some call it Egra, and others suppose it to be the same with Dsjar.

ARGA, a branch or rib of the ALTAY mountains which passes westward to the river Yus.

ARGADES, in *Ancient Geography*, a river of Asia, in Sitacene, mentioned by Ælian, Hist. Anim. l. xvi.—Also, a tributary town of Attica, noticed by Herodotus, and by Plutarch called Ergades.

ARGADINA, a small town of Asia in Margiana, according to Ptolemy.

ARGÆUS, a mountain of Asia, being the highest in Cappadocia, with its summit always covered with snow, according to Strabo.

ARGAIS, an island of the Mediterranean sea, on the coast of Asia Minor, in Lycia, according to Steph. Byz.

ARGAL, or ARGOL, the hard lees sticking to the sides of wine-vessels; more frequently called TARTAR.

ARGALI, in *Zoology*, a name synonymous with Mufflon, Ovis Ammon, Wild sheep, Mouflon, &c. See AMMON. It is the same animal from which it is believed all the varieties and domesticated kinds of that useful creature, the common sheep, have originated, and is found in a state of nature in the Alpine regions of the great continent of Asia.

Linnaeus, in the twelfth edition of the *Systema Naturæ*, places it in the genus CAPRA, from which it has been inferred, that he thought it rather the parent of the Goat, than the sheep; and Brisson seems to be of the same opinion. "Hircus (Capra orientalis) cornibus supra rotundatis, infra planis, femicirculum referentibus." Briff. regn. an. p. 71. n. 12. Dr. Shaw, who has entered more minutely into the history of this creature than the generality of writers, observes with his usual caution and discrimination, that, in fact, the two genera, Capra and Ovis, are so closely allied that the line of separation is not very easily discoverable; but that whether we consider the figure or manners of the present animal, it seems rather to be the parent or stock of the sheep than the goat race.

The celebrated Buffon has enlarged with equal elegance and inaccuracy on the history of the common sheep, and has ventured to advance one opinion at least which proves the fallacy of theoretical observations in a striking point of view:—after considering the weakness and stupidity of this animal in a domesticated state; reflecting that he is without defence; that he has for his enemies all devouring animals; and can alone find safety in flight; he is tempted to think, that from the beginning it was a creature confided to the care of man; that it was dependent upon his help, and could not have continued to subsist without it; and of this he is persuaded, because wild sheep were never found in the desert. The history of the Argali, considered as the parent of these creatures, proves this to be at best a visionary idea; and those who have seen the sheep of the domesticated kinds that are permitted to rove amongst the mountains, well know with what address these creatures guard to the best of their means against every enemy, and will not therefore give implicit credit to the rest of his observations. The Argalis have a far wider range, and are perfectly in a state of nature; they are endowed with greater strength and activity; and their mode of life proves them to be neither that helpless or defenceless race we might be led to imagine;—they contribute to the comfort, but *can* live independently of the fostering protection of man.

To Dr. Pallas we are indebted for much valuable information respecting the Argali; it was observed by him throughout the vast chain of mountains that extends through the middle of the Asiatic continent, to the eastern sea; and on the testimonies of Steller, Cetti, Gmelin, and others, varieties of it, differing only in a few slight particulars of size and colour according to the climate, are found in Kamtskatka, the Kurile isles, and California; and also in Barbary, Sardinia, Corsica, and the mountainous parts of Greece.

The character of the species is taken from the structure of the horns, which are arcuated, femicircular, and flat beneath, and the dew-laps being lax and hairy. From Pallas, Gmelin, Shaw, &c. it appears that the argali is about the size

of the fallow-deer; of a ferruginous ash-colour, intermixed with grey above, and white tinged with grey beneath; the face whitish, and behind each shoulder not unfrequently a dusky spot; the body is large, neck long, legs slender but strong, and the hinder ones longest; the tail is remarkably short, scarcely exceeding three inches in length, and is brown at the tip: the horns in full-grown animals are extremely large, placed at the top of the head, and stand close at their base, rising first upwards, and then bending down and twisting outwards as in the common ram. The body is covered with hair instead of wool, in which particular consists its chief difference from the general aspect of a sheep; but it is woolly at the rudiments of the hair: the face, and about the tip of the nose especially, becomes whiter in winter; the back more ferruginous, and the hair rather more rough, wavy, and curled. The female is smaller than the male; and her horns are smaller and less curved. The horns of the old males grow to a vast size, and have been found of the length of two Russian yards, measured along the spires, and weighing fifteen pounds each.

Like that analogous creature the goat, the argali entirely prefers the alpine regions in summer, and are seen in that season feeding on the scanty herbage that covers the highest mountains; in spring and autumn they are observed in the little vallies between the loftier precipices, and descend to the bottoms as winter approaches. They go in small flocks or parties, produce their young in the middle of March, and have one, and sometimes two at a birth. When first born, they are covered with a soft, grey, curling fleece, which changes to hair towards the end of summer.

"The argali," says Dr. Shaw, "is a very timid animal; and when closely pursued does not run in a directly progressive course, but obliquely from side to side, in the manner of other sheep, ascending the rocky mountains with great agility, and, like the wild goat, going over the narrowest and most dangerous passes with perfect safety. The males are said to fight frequently among themselves, and will sometimes precipitate each other down the rocks in their contests. Their chase is dangerous and difficult, but it is an important object with some of the Asiatics, since the animal furnishes a great number of necessary articles; the skin being used for clothing, and the flesh for food. Dr. Pallas informs us, that the flesh of the lamb is excellent; that of the old animals good, but more particularly when roasted."

"In Corsica, the argali is known by the name *mufro*; where it is so wild as to be rarely taken alive, but is shot by the hunters, who lie in wait for it among the mountains. When the young are taken, however, which is sometimes the case when the parent is shot, they are observed to be very readily tamed. The Corsican argali, or moufflon of Buffon, is of a darker colour than the Asiatic kind."

The bearded sheep and Siberian goat of Pennant's quadrupeds, Dr. Shaw conjectures to be a variety of the argali; a specimen of it was brought into England from Barbary in 1561, and is described by Caius or Dr. Kay, who named it *tragelaphus*, on a supposition of its being the same with the *tragelaphus* of Pliny; and the following account of it is given by Mr. Pennant.

"Sheep with the hair on the lower part of the cheeks, and upper jaws extremely long, forming a divided or double beard, with hairs on the sides and body short; on the top of the neck longer, and a little erect; the whole under part of the neck and shoulders covered with coarse hairs, not less than fourteen inches long; beneath the hairs, on every part, was a short genuine wool, the rudiments of a fleecy clothing; and the colour of the breast, neck, back, and sides a pale ferruginous; tail very short; horns close at their base, recurvated, twenty-five inches long, eleven in circumference in the

thickest place, diverging and bending outwards, their points being nineteen inches distant from each other."

ARGAN, in *Botany*. See *SIDEROXYLON*.

ARGANA, in *Geography*, a town of Asia, in the government of Diarbekir, under the dominion of the Turks. It is seated on an eminence, in a principality of the same name, abounds with vineyards, and furnishes exports of good wine. N. lat. 37°. E. long. 39° 14'.

ARGANCY, a town of France, in the department of the Moselle, and chief place of a canton in the district of Metz, 3 leagues S. of Thionville, and 1¼ N. of Metz.

ARGAND'S LAMP. See *LAMP*.

ARGANTA, in *Geography*, a town of Spain, in New Castile, and diocese of Toledo.

ARGANTE, in *Entomology*, a species of *PAPILIO*. (*Dan. Cand. Gmel.*) The wings are rounded, and fulvous beneath, speckled with ferruginous. Fabricius. This insect inhabits Brazil. *Olf.* This must not be confounded with *Papilio Argante* of Cramer, that being *Papilio Cantus* of Fabricius and Gmelin.

ARGANTAMAGUS, in *Ancient Geography*, now *Argenton*, a place of Gaul, between Finis and Ernoborum.

ARGANTONIUS MOUNTAIN, a mountain of Asia, in Mysia, near the town of Prusa. Strabo says, that in his time the inhabitants of Prusa held a festival, during which they ran upon this mountain, and called Hylas; probably in reference to Hylas, the friend of Hercules, who was carried off from this mountain by the nymphs.

ARGARADAUCA, a town of Asia, in Media. Ptolemy.

ARGARI, a place of India, in the peninsula on this side of the Ganges, according to Ptolemy; whence probably was derived the name of the Argaric gulf, on which it was situated. This gulf was opposite to the island of Taprobana, and between the promontories of Collis and Calbigicum.

ARGAROSSA, in *Geography*, a river of Savoy, which runs into the Isere, 3 miles north-west of Montier.

ARGASCH, a town of Russia, in the government of Simbirsk, 64 miles W. S. W. of Simbirsk. N. lat. 55°. E. long. 47° 4'.

ARGE, in *Entomology*, a species of *PAPILIO*. (*Nymph. Gem. Gmel.*) The wings are indented, white, streaked with black; a singular ocellar spot on the anterior wings, and five on the posterior ones. This inhabits the deserts of Russia, Esper. Gmelin, &c.

ARGE, in *Geography*, a town of Asia, in the Arabian Irak, seated on the Tigris, 175 miles north-west of Bassora.

ARGE, a river of Lithuanian Prussia, which runs into the Nemonin, 4 miles north-west of Wipe.

ARGE, in *Mythology*, sister of Hebé and Vulcan, was born of Jupiter and Juno, when this god disguised himself under the form of a cuckoo, and deceived his wife.

ARGEA, or ARGEI, in *Antiquity*, human figures made of rushes, thrown annually by the Vestals, from the pons Sublicius, into the river Tiber, on the day of the ides of May.

This ceremony we learn from Festus and Varro; the latter of whom, however, says, they were cast by the priests, unless by *sacerdotibus* we suppose he meant *priestesses*. He adds, that the number of figures was thirty. Plutarch, in his Roman questions, inquires, why they were called *argea*? There are two reasons assigned: the first, that the barbarous nation who first inhabited these parts called the Greeks they could meet with into the Tiber; for *Argians* was a common name for all Grecians; but that Hercules persuaded them to quit so inhuman a practice, and to purge themselves of the crime, by instituting this solemnity.—The second, that Evander, an Arcadian, and a sworn enemy of the *Argians*,

gians, to perpetuate that enmity to his posterity, ordered the figures of *Argians* to be thus cast into the river. Ovid speaks of this ceremony in his *Fest.* v. 621:

“ Sum quoque præcorum virgo simulacra virorum
Mittere roboreo scirpea ponte solet.”

ARGEADS, in *Ancient Geography*, one of the nations comprehended under the name of Macedonians, according to Appian; and the appellation *Argætes* is expressly given to certain kings who reigned in Macedonia, and who came originally from Argos, in a verse cited by Pausanias (l. vii. c. 8.); and Herodotus also speaks of these first Macedonians who came from Argos.

ARGELES, in *Geography*, a town of France, in the department of the eastern Pyrenées, and chief place of a canton in the district of Ciel, near the Mediterranean sea; 12 miles south of Perpignan. The place contains 1,360, and the canton 7,775 inhabitants: the territory includes 235 kilometres and 12 communes.

ARGELLEZ, or **ARGELÈS**, a town of France, and principal place of a district in the department of the Higher Pyrenées, seven leagues S. S. E. of Pau. The place contains 810, and the canton 9,910 inhabitants: the territory includes 477½ kilometres and 30 communes. N. lat. 45°. W. long. 0° 13'.

ARGEMON, or **ARGEMA**, in *Medicine*, an ulcer about the iris of the eye, comprehending part of the white, and part also of the black.

The argemon appears of a red colour, on the outside of the iris, and white within it. When it spreads far, and eats deep, it sometimes occasions the uvea to fall.

ARGEMONE, *Argemone*, Diosc. from *Argéma*, a disorder of the eye, which this plant is said to cure, in *Botany*. Lin. gen. n. 649. Schreb. 882. Tourn. 121. Gært. t. 55. Juss. 236. Cals. *polyandria monogynia*. Nat. Ord. of *Rhoeadeæ*. *Papaveraceæ* of Juss. Gen. Char. Cal. perianth three-leaved, roundish; leaflets roundish, with a point, concave, caducous. Cor. petals, six, roundish; stem erect, spreading, larger than the calyx. Stam. filaments numerous, filiform, length of the calyx; anthers oblong, erect. Pist. germ ovate, five-angled; style none; stigma thickish, obtuse, reflex, quincunx, permanent. Per. capsule ovate, five-angled, one-celled, half-valved. Seeds numerous, very small; receptacles linear, fastened to the angles of the pericarp, not gaping. Obs. The half-valved capsule distinguishes this from “*Papaver*.” The second species is three-valved; the third four-valved; and the first six-valved.

Ess. Char. Cor. six-petalled. Cal. three-leaved. Caps. half-valved.

Species 1. *A. mexicana*. prickly argemone, or poppy; papaver spinosum of Bauh. Clus. Mor. Ger. Carduus of Park. Ray. “*Capsules six-valved; leaves spiny.*” Annual, rising to the height of two or three feet, with stems armed with prickles; valves of the capsule varying in number, as well as the petals, from four to six; common in Mexico, and all the islands of the West Indies, where it is a troublesome weed in their cultivated lands; first brought into Europe by the Spaniards, under the title of “*figo del inferno*,” or devil’s-hg; now found wild in some of the southern countries of Europe; cultivated by Gerard in 1597, and flowering in July and August. It abounds with a milky glutinous juice, turning, in the air, into a fine bright yellow, and not distinguishable from gamboge; said to be efficacious, in small doses, in dropsies, jaundice, and cutaneous eruptions; deemed to be very detestive, and used in diseases of the eyes; the infusion is sudorific and resolutive; the seeds are a stronger narcotic than opium, and frequently administered in the sugar-colonies in diarrhæas and

bloody fluxes, working by stool and vomit. In the West Indies it is called the yellow thistle. 2. *A. armeniaca*, papaver orientale, &c. Tournef. “*Capsules three-valved;*” discovered by Tournefort in Armenia. 3. *A. tyrenaica*; “*Capsules four-valved, stem naked;*” approacheth much in habit to “*papaver alomum.*” A native of the Pyrenées.

Propagation and Culture. The seeds of the first species must be sown in a bed of light earth, in the spring, where they are to remain, and the plants thinned to the distance of four inches; when they have shed their seeds, a supply of plants, for several years, will not be wanting. The two other sorts have not been cultivated. Martyn’s Miller’s Dict.

ARGEMONE. See **PAPAVER.**

ARGEMONION, a name given by some of the late Greek writers, to the plant called **SARCOCOLLA** by the other writers of their times.

ARGENCES, in *Geography*, a town of France, in the department of the Calvados, and chief place of a canton in the district of Caen, 5 leagues W. of Lisieux, and 2½ E. S. E. of Caen.

ARGENCHUM, in *Ancient Geography*, a forest of Gallia Aquitania, near the place where Rochelle is now situated.

ARGENFELS, in *Geography*, a town and castle of Germany, in the district of the Lower Rhine, 17 miles N. N. W. of Coblenz.

ARGENNOS, in *Ancient Geography*, the name of one of the three islands called Trogilæ, situate in the Ionian sea, on the coast of Asia Minor.

ARGENNUM, a promontory of Asia Minor, in Ionia, near the island of Halonesus. Strabo and Ptolemy.—Also, a promontory on the eastern side of Sicily, now *Capo S. Alessio*.—Also, a promontory on the eastern side of the isle of Lesbos.

ARGENOMESCU, a town of Hispania Tarragonensis, in the territory of the Cantabri. Ptolemy.

ARGENS, or **ARGENTZ**, in *Geography*, a river of France, which discharges itself into the Mediterranean.

ARGENS, JOHN BAPTIST DE BOYER, *Marquis de*, in *Biography*, was the son of the solicitor-general to the parliament of Aix in Provence, and born in that city in 1704. He took up arms against the inclination of his father, at the age of fifteen; but on his return from Constantinople, he was constrained to enter himself at the bar. Being disgusted with this profession, he again embarked in the military service, in 1735. Disabled from pursuing it by a fall from his horse, he supported himself for some time in Holland by his pen. Upon the accession of Frederic, king of Prussia, he was appointed to be his chamberlain; and continued twenty-five years at Berlin; where he married, and maintained the character of a good husband, friend, and master. At length he returned to his native city, and lived there as a philosopher till the year 1771, when he died suddenly on a visit to his sister, the baroness de la Garde, near Toulon.

The marquis d’Argens formed himself upon the model of Bayle, and adopted those free sentiments with regard to religion and morals, which have been much in vogue on the continent from the time of Bayle and Montesquieu. With talents inferior to those of Bayle, he possessed an ardour of mind, which led him to make considerable acquisitions in literature and science; so that he understood several languages, had some acquaintance with chemistry and anatomy, and was a tolerable painter. As a writer, his style is diffuse and destitute of energy; and his works, though they manifest erudition and reflection, are rendered disgusting and offensive by the licentiousness of morals, and the perpetual attacks on religion and its establishments, which are his characteristic features. The principal of these are, his “*Jewish, Chinese, and Cabalistic Letters,*” which, with the “*Philosophy of*

Good Sense," compose twenty-four volumes in 12mo. published in French under the title of "The Works of the Marquis d'Argens," in 1768; a great number of romances, ill designed and negligently written, including "Memoirs of himself," of no great importance and value; "Translations from Greek into French of Ocellus Lucanus, Timæus Locrentis, and the Discourse of Julian on Christianity;" and "Secret Memoirs of the Republic of Letters," printed in Holland in 4 vols. 12mo.; and at Paris, in seven. The Jewish and Chinese letters are now the most known; but his other works have sunk into oblivion. *Nouv. Dict. Hist.*

ARGENSON, in *Geography*, a small town of France, in the mountains of Dauphiny and diocese of Gap, two leagues from Alpres; usually called St. Pierre d'Argenson.

ARGENT, a town of France, in the department of the Cher, and chief place of a canton in the district of Sancerre, one league and a half north of Aubigny. The place contains 1,042, and the canton 3,714 inhabitants: the territory includes 277½ kilometres and 4 communes.

ARGENT, in *Heraldry*, signifies white, or silver, and is so called in the blazoning of the arms of gentlemen, knights, and baronets; but for sovereigns and princes it is termed *luna*; for dukes, marquises, earls, viscounts, and barons, *pearl*. By engravings it is represented plain. The word is French, derived from the Latin *argentum*, *silver*; this colour being supposed the representation of that metal; whence the Spaniards call this field, *campo de plata*, *silver field*.

ARGENTA, in *Ancient Geography*, a town of Thessaly, mentioned by Livy.

ARGENTAC, in *Geography*, a river of Albania in European Turkey, which runs into the Adriatic, six miles north of Durazzo.

ARGENTAL, a town of France, in the department of the Correze, and chief place of a canton in the district of Tulle, four leagues south-east of Tulle. The place contains 2,574, and the canton 9,789 inhabitants: the territory includes 155 kilometres and 11 communes. N. lat. 45° 5'. E. long. 1° 47'.

ARGENTALIS, in *Entomology*, a species of PHALÆNA (*Pyrallis*, Gmel.) found in Germany and Piedmont, about the size of PHALÆNA *purpuralis*. It is cinereous brown, with three waved silvery streaks on the first pair of wings, and two on the second. Fabricius and Gmelin.

ARGENTAN, in *Geography*, a town of France, and principal place of a district in the department of the Orne, four leagues south of Falaise, and six and a half north of Alençon. The manufactures of this place consist of lace, linen cloth, and light stuffs. It is the Argentomum or Argentomagum of the ancients. The place contains 5,618, and the canton 9,409 inhabitants: the territory includes 135 kilometres and 15 communes. N. lat. 48° 44'. W. long. 0° 8'.

ARGENTINUM, in *Ancient Geography*, a town of Italy, in the territory of the Brutii, noticed by Livy.

ARGENTARIA, a town of Germany, near which the emperor Gratian defeated 30,000 Germans. Ptolemy calls it Argentuaria and Argentovaria. It was ruined by Attila about the fifth century.

ARGENTARIA *Creta*, *silver chalk*, in *Natural History*, a name given to an earth, not properly a chalk, but a kind of tripela. It is a very beautiful earth, of a loose friable texture, and perfectly pure white. It is dug in Prussia, and is much esteemed for cleaning plate. It has also been found in France, and of late in Ireland.

There are many white chalks of various hues, which are dug in Germany, America, Italy, and other countries. That dug in the duchy of Mantua in Italy, is much used by painters, and at Rome vulgarly called *geffo*.

ARGENTARIUS is frequently used, in *Roman Writers*, for a money-changer or banker.

The argentarii were monied people, who made a profit either by the changing or lending of money at interest. These had their tabernæ, or offices, in the forum Romanum, built there as early as the reign of L. Tarquinius Priscus. The argentarii and feneratores were much hated on account of their covetousness and extortion. Du-Cange and Pitiscus.

ARGENTARIUS, in *Writers of the Middle Age*, an officer entrusted with the custody of money.

In this sense argentarius amounts to the same with the Greek ἀργυροφύλαξ, and our *cashier*. Du-Cange.

ARGENTARIUS *Miles*, in our *Old Writers*, an officer of the exchequer, whose business it was to carry up the bag of money from the lower exchequer to the higher, in order to its being examined or told. Spelman.

ARGENTARI is also applied, in the *Civil Law*, to those who adorned military arms with silver or gold.

In which sense the word amounts to the same with BARBARICARI.

ARGENTARIUS *Mons*, in *Ancient Geography*, *Monte Argentaro*, a mountain of Etruria, in Italy, forming a promontory near the town of Lofa.

ARGENTARO is a cape of Tuscany, south of Orbittello, and east of the isle of Gigho. N. lat. 41° 55'. E. long. 14° 29'.

ARGENTATA, in *Entomology*, a species of PHALÆNA, (*Geometra*, Gmel.) The wings are yellow at the tips, with two silvery streaks on the anterior pair, and a quadruple black spot on the posterior ones. This is a native of China. Gmelin and Fabricius. The anterior wings are silvery at the base, with a large triangular brown spot; lower pair silvery, and yellow at the tip; and the four contiguous spots upon them have a brassy gloss.

ARGENTATA, a species of APIS found in Barbary. It is downy, cinereous; abdomen black; margin of the segments white beneath, with silvery hairs. Gmelin, &c.

ARGENTATA, a species of MUSCA, about the size of MUSCA *fasciata*; it inhabits Saxony. The scutellum is slightly bidentated; body black; abdomen covered with silvery down, with yellow lateral spots. This belongs to the genus *Stratiomys* in the Fabrician system, and must not be confounded with the following insect.

ARGENTATA, a species of MUSCA, that inhabits Europe. The colour is cinereous; with four black lines on the thorax; abdomen grey, changeable; front silvery on each side. Gmelin, &c.

ARGENTATA, a species of ARANEA. The abdomen is white, with the posterior part brown; the margin with six dentations. This is a large insect, and inhabits South America. Gmelin.

ARGENTATA, in *Ichthyology*, a species of SCIÆNA, that inhabits the Arabian shore. The scales on the upper parts are blackish, with the margins and apex silvery; on the lower parts pale rufous, with paler margins. Gmelin. There is a large blue curved patch under the eye, which extends towards the mouth; inferior lip longest; lower lateral teeth in a row of larger ones, and behind these a row of smaller ones; posterior gill-covers terminating in an acute angle; fins reddish brown, dorsal one glaucous, with a pale rufous margin; spines of the anal fin becoming gradually longer and larger.

ARGENTATA, in *Zoology*, a beautiful little creature of the SIMIA genus, a native of South America; named by Buffon *Mico*; and by Pennant, *the fair Monkey*. It is tailed and beardless; white; face red; and tail brown. Gmelin. This creature is not much larger than a squirrel, measuring only

only about seven or eight inches from the nose to the rudiment of the tail; and the tail itself is twelve inches long. The whole animal is covered with hairs of a beautiful fine silvery white; except the face and ears, which are red, and the tail, which is of a deep brown. It is thus described by Brisson: *cercopithecus ex cinereo albus argenteus, facie auriculisque rubris splendidibus, cauda castaneæ coloris*. *Quadr.* p. 142. 12.; and is *SIMIA argentata* of Schreber.

ARGENTATI MILITES, in *Antiquity*.—Livy, lib. vi. speaks of *argentati milites*, as distinguished from *aurati*. Aquinas supposes these to have been similar to the *argyraspides* and *chrysalpides*; but the descriptions do not quadrate. Livy only represents the *argentati* as clothed in white linen coats. *Aquin. Lex. Mil.*

ARGENTATUS, in *Entomology*, a species of CURCULIO, very frequent on oaks, nettles, nut-trees, &c. in England and other parts of Europe. Its specific character is simply this: the whole body silvery green. Gmel. &c. The colour of the shell itself is black, but being wholly covered with beautiful minute scales of a fine silvery green colour, the insect appears entirely of that colour before the scales are rubbed off. This species is *Curculio femoribus omnibus denticulo notatis, corpore viridi oblongo*, of *Fn. Suec.* 459. *Curculio squamosus viridi auratus*, of Geoffroy; *Curculio urticæ*, of Degeer *Inf.*; and *Curculio argentatus* of *Donov. Brit. Inf. &c. Obs.* Gmelin has given another species of CURCULIO under the same specific name, viz CURCULIO *argentatus*, of a silvery green, with the antennæ and shanks of the legs rufous, and the thighs brown and clavate; a native of Europe. This inattention of Gmelin is the source of endless confusion; it is no unusual circumstance to find in his arrangement two or even more very different species under the same specific name in those genera that are extensive; sometimes indeed, to avoid confusion, he places them in different families, but in the present instance, we find both in the same family: ** *Brevirofres*, † *femoribus denticatis*.

ARGENTATUS, in *Ichthyology*, a species of SPARUS that inhabits the rivers in Japan, and is distinguished by having a black spot behind the gills. It is covered with silvery scales, and is about six inches in length; and has two nostrils before the eyes. Gmelin, &c.

ARGENTATUS, a species of *Centrogaster* that inhabits the rivers in Japan. It is silvery, with a large brown spot on the nape, and a blackish one on the dorsal fin. This fish is about three inches and a half in length, and the tail is forked. Gmelin, &c.

ARGENTATUS, in *Ornithology*, a species of LARUS, called by Dr. Latham the silvery gull, and it is also the silvery gull of the Arctic zoology. It is white; the head and neck striated with cinereous: primary quill feathers black above, beneath grey, and white at the tips. Gmelin, &c.—This bird inhabits Norway.

Dr. Latham notices a species of Gull very much like this in the Leverian Museum. The length is near sixteen inches; bill an inch and a half long; quills as in the other; but the two first have the ends tipped with white for near an inch, instead of a small spot; and six of the prime quills had the ends black; the bill and legs are pale, but as the bird had been in spirits some time, nothing certain could be said about them. *Vide Gen. Syn.*

ARGENTEA, in *Conchology*, a species of VENUS, of a somewhat oblong shape, smooth, and silvery, with black lines united into bands. This shell inhabits the shores about Cadiz.

ARGENTEA, a species of PATELLA. This shell is smooth, thick, and somewhat silvery, with eleven brown rays; mar-

gin silvery; tip pale yellow; bottom like ivory, with a double white ring. It is a rare shell, about two inches in length; and the native country unknown. *Vide Schroet. and Gmelin.*

ARGENTEA, in *Entomology*, a species of CANTHARIS, found in Africa, and described by professor Thunberg. The thorax is flat, and with the wing-cases are green; the abdomen is silky silvery. To this is added, that the head is black; vent and legs yellowish; feet brown.

ARGENTEA, a species of SPHEX that inhabits Coromandel. It is black and glossy; front villous and silvery; wings white, and brown at the tip. This is a large insect. Fabricius and Gmelin.

ARGENTEA, a species of ARANEA that inhabits the deserts of Ural, and is deemed a poisonous creature by the Calmucks. The thorax is depressed, orbiculated, white, with two black stripes; abdomen ovate, lobed, silvery, with two pair of dots in the middle, and four rows behind. *Lepech. it. i. p. 316.* This insect spins a perpendicular web; the legs are long, black, and annulated with yellow. Gmelin.

ARGENTEA, in *Ichthyology*, a species of PERCA that inhabits America, and is thus very concisely defined by Linnaeus and Gmelin: nostrils tubular; there is a large black spot on the spinous part of the dorsal fin.

ARGENTEA, a species of SCIÆNA. It is silvery, spotted above with black; beneath immaculate. *Forsk. Fn. Arab.* The crown is scaly; two elevated lines between the nostrils; iris silvery above, brown; teeth numerous, setaceous, movable, the outer row largest; dorsal fin connected, and spotted with black; the first rounded, the other linear; ventral and anal fin pale rufous, pointed at the ends; tail somewhat bifid.

ARGENTEA, in *Natural History*, a species of SERTULARIA that inhabits the European and American seas; and is called by Ellis *the squirrel's tail*; it is also CORALLINA comis ad inftar caudæ vulpinæ sparfis of Mercat.; and MUSCUS marinus minor, denticulis alternis bijugis of Morif. *Hist. Pl. &c.* According to Linnaeus, Solander, Gmelin, &c. its specific character is this: denticles nearly opposite, and pointed, vesicles oval; branches alternate and panicled.

ARGENTEA, *Assem.* in *Ancient Geography*, a town situate at the northern point of the island of Jabadii. Ptolemy.

ARGENTEAU, in *Geography*, a desolated town of the Netherlands, in the duchy of Limburg, two leagues west of Dalem.

ARGENTEOLA, or ARGENTIOLUM, in *Ancient Geography*, a town of Spain, in Asturia. Ptolemy.

ARGENTELLA, in *Entomology*, a species of PHALÆNA (*Tinea*, Gmel.) It is entirely silvery, except the antennæ, which are annulated with brown. *Linn. Fabr.* This is *tinea perlella* of Wien. *Schmetterl. p. 134.* The larva is gregarious, glabrous, brown, and feeds on the nettle. *Degeer, &c.*

ARGENTERO, in *Geography*, a mountain of European Turkey, between Bulgaria and Macedonia.

ARGENTEUIL, a town of France, in the department of the Seine and Oise, and chief place of a canton, in the district of Versailles, eight miles N. W. of Paris. The place contains 4,726, and the canton 16,557 inhabitants: the territory includes 67½ kilometres, and 11 communes.—Also, a town of France, in the department of the Yonne, three leagues from Tonnerre.

ARGENTEUM OS, in *Natural History*. See OS ARGENTEUM.

ARGENTEUS, in *Coinage*. See DENARIUS.

ARGENTEUS, in *Entomology*, a species of SCARABÆUS, found in England, and the interior of Austria. It is black, beneath silvery, and shining; margin of the shield and wings-

caes testaceous. Fabricius and Gmel. *Obf.* In the Fabrician system it belongs to the *Melolontha* genus; and in that of Gmelin to the section of *Scarabæi melolontha*. It is the same species as Scopoli and Poda call *Scarabæus argenteus*.

ARGENTEUS, a species of CULEX, very common in Barbary. It is about the size of the common English gnat; the back is covered with silvery scales; and the legs are fasciated. Vide Poirer Journ. de Phys. 1787. Apr. p. 245.

ARGENTEUS, in *Ichthyology*, a species of CHAETODON, found in the Indian sea. The tail is bifid, with eight spines in the dorsal fin, and two spines instead of ventral fins. Amœn. Ac. The ventral spines are short, and the first dorsal fin scarcely visible. Gælin.

ARGENTEUS Moss, in *Ancient Geography*, *Sierra de Alcaraz*, a mountain of Spain, from which the river Bœtis springs. Strabo.

ARGENTEUS Codex, in *Biblical History*, a manuscript of the four gospels, is so called from its silver letters, and is supposed to be a copy of the Gothic version made by Ulphilas, the apostle of the Goths, in the fourth century. It is of a 4to. size; the leaves, which are vellum, parchment, or papyrus, are stained with a violet colour; and on this ground the letters, which are all capitals, were afterwards painted in silver; except the initial characters, and a few passages, in gold. Mr. Coxe, from a close inspection, was convinced that each letter was painted, and not formed, as some have asserted, by a hot iron upon leaves of gold and silver. Most of the silver letters are become green by time; but the golden letters are still in good preservation. This codex is mutilated in several places; but what remains is, for the most part, perfectly legible. It was first discovered in 1597, in the library of the Benedictine abbey of Werden in Westphalia, whence it was brought to Prague, and at the capture of this city in 1648, sent as a valuable present to Christina of Sweden. It afterwards came into the hands of Isaac Vossius, either by stealth, or as a present from the queen; and on the death of Vossius, it was purchased by Count Magnus Gabriel de la Gardie for two hundred and fifty pounds, and presented to the university of Upsal, where it now remains. Three editions of it have been given to the public: the first was issued at Dort in 1665, by T. Junius, who borrowed the MS. from Vossius; and accompanied with observations and a glossary, by Thomas Marshall. That printed at Amsterdam in 1672, is the same with this, having only a new title-page, date, and place of impression. The second edition, published at Stockholm, in 1672, by the learned Stiernhelm, differs from that of Junius, by having the text in Latin, and not in Gothic characters. Benzelius, first librarian of the university of Upsal, and afterwards archbishop, collated the MS., rectified mistakes, and made a literal translation into the Latin tongue. These collations and translation, together with various observations, were transmitted to Mr. Edward Lye, of Oxford, who published a third edition in 1750, from the Clarendon press; this is esteemed, by those who have compared it with the original codex, a complete work. Two opinions have divided the learned concerning the original tongue of the codex argenteus; the first opinion, that it is written in the language and character used in the fourth century by the Goths of Mœsia, ancestors of the present Swedes, and is a true copy of the version made by Ulphilas, is strongly supported by Junius, Stiernhelm, David Wilkins, Benzelius, and Lye. The second opinion, viz. that it is a translation in the Frankish idiom, is as warmly defended by Hickes, la Croze, Wettstein, and Michaelis. Mr. Coxe inclines to the former opinion, which is confirmed in an ingenious treatise of Ihre; by which it appears that several specimens of the Ostrogothic

tongue have been lately discovered in Italy, which perfectly resemble both the characters and language of the version in the codex argenteus. However this be, as the Gothic and Frankish idioms were dialects of the Teutonic or German, this MS. must be considered as the most ancient specimen extant of that language. Those who attribute the version to Ulphilas, refer its date to the fourth century; and those who deem it to be a Frankish translation, allow it to have been copied in the reign of Childeric, between 564 and 587. Besides, its high antiquity is proved from the chronology at the end of the Lord's prayer, Matt. vi. 13. which is not found in any of the most ancient versions; and also from the interpretation of many passages in a final manner with several of the Latin translations, which are antecedent to the vulgate of St. Jerom. Another fragment of this curious MS. containing a few chapters of St. Paul's epistle to the Romans, was found at Wolfenbuttle, and is now preserved in the library of that town. Of this fragment I re published a new and important edition, at Upsal, in 1767. Michaelis's Introduction to the New Testament, by Maith, vol. ii. p. 133—153. Coxe's Travels, vol. iv. p. 173—180. ed. 1802.

ARGENTHAL, in *Geography*, a small town of Germany, in the circle of the Upper Rhine, and duchy of Simmern, forty miles east of Treves, and four south-east of Simmern.

ARGENTICOMUS, among *Ancient Astrologers*, denotes a kind of silver-haired comet, of uncommon lustre, supposed to be the cause of great changes in the planetary system.

ARGENTIER, JOHN, in *Biography*, born at Castelnovo in Piedmont, in 1514, acquired considerable celebrity, though his talent was rather that of teaching the art than practicing, as he was well versed in the theory of medicine, and had read and commented on most of the old writers, but his memory was so defective, that he was rarely able to apply the observations he had made for the benefit of his patients. He taught medicine at Naples, Pisa, and lastly at Turenne, where he died in 1572, aged 58 years. His works were collected and published at Venice, in two vols. in folio, 1592; and have been since twice printed. He prided himself much in having discovered some errors in the works of Galen, whose doctrines he frequently opposed. Haller. Bib. Med. Pract. Eloy. Dict. Hist. de la Med.

ARGENTIERA, a volcanic island of the Archipelago, formerly called Cimolus, or Cimolis, one of the Cyclades, which is about eighteen miles in circumference, and derives its name from a mine of silver that was for a long time worked in it with success; but it is now unknown. The soil is extremely dry, and destitute of springs; nor is there any water here but what is collected in cisterns, or brought from Milo, an island at a little distance: the hills, vales, and the whole country stripped of trees, do not offer a single shade to defend from the sun. The Venetians, during their war with the Turks, cut down all the olive-trees, and did irreparable damage to the island; nor do the present inhabitants dare to make fresh plantations, lest they should draw on themselves heavier impositions. Such is the mistaken policy of the Ottoman government; if its subjects manifest any industry, it is immediately taxed, and stifled in its birth. Argentiera presents nothing but rocky hills, destitute of verdure, and vales producing worthless shrubs and thorny thickets. The vales are generally covered with a white and fat clay, called by the ancients *Terra Cimolia*, or *Cimolia Creta*, a kind of Fuller's earth, which the inhabitants employ instead of soap to wash their linen. See *CIMOLIA Terra*. Though the soil is barren, the industrious islanders make it produce for them a subsistence.

subsistence. They cultivate barley, and a little wheat, which they sow at the beginning of autumn, the rainy season, and reap in March; a small quantity of cotton, and a few vines. But their grapes are not sufficient for making wine, which they procure from the neighbouring islands, particularly from Milo. Their olive and mulberry trees are very few. They rear hogs, poultry, and some few goats and sheep; but as to the latter, they are chiefly supplied from Milo: and the country affords them quails, hares, and partridges in abundance. Their beasts of burden are asses; in the use of which they have no suitable accommodations. The women spin cotton, and knit stockings, whenever the labours of the country allow; and the men employ themselves in fishing and navigation. Excellent fish are taken round the island, especially the rouget (the *surmulot*, *mulus* Linnæi), a fish well known and highly esteemed for its delicate flavour on all the coasts of the Mediterranean. The tribe of Greeks which inhabits this island, is composed of two hundred persons, according to Olivier; two hundred families, as Sonnini reports; or, as others say, about five hundred persons; who have no Turkish officers resident amongst them, but have an annual visit from the captain pacha, who, besides levying an impost of 15 or 1600 piastres, which they find it difficult to pay, exacts presents to a considerable amount, so as to reduce the inhabitants to misery. Cotton is almost the only article that produces for them any money; their cotton stockings supply the Europeans; and the mariners purchase their hogs, poultry, and eggs. The dress of the Greek women of Argentiera is peculiar: they swell out their legs by wearing several pairs of stockings, and appear as if they were booted, which they consider an essential part of dress: their garments do not descend above two inches below the knee, and these are so contrived as to spoil their shape, and render it impossible to form any idea of the beautiful proportions with which they were formed by nature. The neck is concealed under a corset, quilted, and stiffened with whale bone; a piece of velvet, satin, or cloth trimmed with gold or silver net-lace, or set by a simple embroidery, adorns their whole front; and in their gala dress, two wide sleeves are fixed to the corset, and fall on each side to the middle of the thigh. In summer the whole arm is covered only by the sleeve of the shift, the head is enveloped with a handkerchief which passes under the chin. In other respects they are cheerful, lively, and handsome. Savary.

The only inhabited place in the island is seated on the summit of a mountain of rocks, to which the access is very difficult. The houses are few, miserably constructed, and filled with flies; but it is surrounded by high walls, and secured by two gates. Their dwellings, which may be rather called huts or dens than houses, are covered by a roof, consisting only of a sort of wicker hurdle, on which earth is spread and beaten. The superstitious Greeks rely on heaven, more than on the structure of their habitations, for their security. Accordingly, on the eve of the festival of the exaltation of the holy cross, it is an ancient custom to sweep and nicely clean the flat roofs of the houses; and towards evening, when the bells of the churches begin to ring, the inhabitants draw upon them large crosses, which figures are, in their estimation, the most effectual means of preserving the tops of their houses from being penetrated by the rains. The single street of which this wretched town or village consists, unpaved, is, in the rainy season, a long heap of deep mud; and the water, finding its way into the rooms of the ground floor, which are almost subterraneous, renders their habitations equally unwholesome and inconvenient. The small church or chapel of the Capuchins, serves for the catholics of Argentiera; and a secular priest, born in the island of Scio, and educated at Rome, performs divine service in

this chapel, and assumes the title of the grand vicar or nominal bishop. The town is of very modern construction, having been erected so lately as the year 1646, by some Greek fugitives from the island of Siphanto, who are said to have brought with them an image of the Virgin; and built houses, where this image had stopped with them, and preserved them from the attacks of their enemies. Several Greek churches or chapels are built behind the village, all of which have little bells above their portals, which are frequently in motion. About half a league from this town, Olivier found fragments of bricks and potter's ware, which indicated the position of the ancient town; and upon digging in this spot, he discovered some rude figures of baked earth, such as a toad, a sphynx, and a cock, and also a small vase with a handle in the Etrurian style. He also perceived canals in the bank of lava, probably for the purpose of affording a passage to boats, caves for shelter from the rain and sun, and other caverns, which might have been places of habitation or interment at different epochs which history has not recorded.

This island is nothing but a group of volcanic substances, and exhibits every where indications of a great combustion. In several places the rocks are calcined; pozzolana was found here by Olivier, and the hot waters which issue from a rock near the sea, in the north-west part of the island, attest the existence of a subterraneous fire in full activity. The heat of these waters is such, that a person cannot hold his hand in them, and an egg is in an instant boiled hard. The Greeks reckon them efficacious for curing rheumatism, sciatica, and other disorders of that nature, by means of linen cloths steeped in them and applied to the parts affected. Near these waters is the mouth or centre of an ancient volcano, which, for a long time, exhaled infectious vapours, whence the modern Greeks have called it "vromo limno," or stinking lake. This gulf is now a lagoon of the sea, which no longer yields any bad smell. To the north of this lake are several grottoes or caverns cut in the rock, which seem to have served as habitations. Sonnini observed in this place a great number of thrushes of the large species, together with blackbirds, linnets, pettychaps, partridges, woodcocks, &c. In the north-north-east quarter of the island is a district called "Kedros," because it is furnished with the species of tall junipers so denominated by the modern Greeks, being a variety of the "juniperus oxicedrus" of Linnaeus. They yield no gum in this island; but the Greeks make use of the oil, which they draw from the stem and branches, for the cure of the itch. The environs of "Prase," on the side of Kedros, furnish a great quantity of wild artichokes; which the inhabitants gather and eat with avidity. The most common shrub on the island is the lentisk, the fruit of which yields on expression an oil, which is fit only for burning, though the poor use it in their food, and it is applied as a topical remedy for rheumatic pains. Saffron also grows on the mountains, and between the rocks of the island; and it is sold in the markets by the weight of eggs. The roadstead of Argentiera, most frequented by the ships which navigate in the Archipelago, is formed by the isle of Milo to the south-west, by that of Argentiera to the north, and by the small islands of San Georgio and of Polivo to the east. Trading vessels anchor between the islands of Argentiera and San Georgio, and are here sheltered from the wind and sea. But this anchorage has not a sufficient depth of water for ships of war and large vessels, which pass more to the north or north-east, in a channel near Polivo. N. lat. 36° 48'. E. long. 24° 40'. Olivier's Travels in the Ottoman Empire, p. 126—133. Sonnini's Travels in Greece and Turkey, p. 281—327.

ARGENTIERA, a town of Italy, belonging to the Venetian states in the Cadore, eleven miles N. N. W. of Pieve di Cadora.

ARGENTIERE, L', a town of France, in the department of the higher Alps, and chief place of a canton in the district of Briançon, on the Durance, nine miles north of Mont Dauphin.

ARGENTINA, in *Botany*. See POTENTILLA.

ARGENTINA, in *Geography*, a town of Savoy, in the county of Marienne, near the river Arc, sixteen miles E. S. E. of Chambéry.

ARGENTINA, a town of Italy, in the kingdom of Naples, and province of Calabria Citra, at the foot of the Apennines, ten miles S. W. of Bitignano.

ARGENTINA, in *Entomology*, a species of PHALÆNA, (*Bambyx*, Gmel.) that inhabits Germany. The wings are indented, grey, with silvery spots. Fabricius. When this insect is at rest, the wings have three erect tufts on the back. The larva is naked and grey; with the fourth, eleventh, and twelfth segment tuberculated; the pupa is obtuse and brown; feeds on oaks.

ARGENTINA, a species of PHALÆNA, (*Noctua*, Gmel.) found in the southern part of Russia. The wings are grey, with a broad abbreviated silvery stripe. Fabricius and Gmelin.

ARGENTINA, in *Ichthyology*, a genus in the order *Abdominales*, containing only four species; viz. *sphyræna*, *glossodonta*, *carolina*, and *machnata*. The generic character is thus defined by Gmelin. Teeth in the jaws, and tongue; eight rays in the gill membrane; vent near the tail; and many rays in the ventral fins.

ARGENTINÆ, in *Natural History*, a species of ECHINORHYNCHUS, so named, because it infests the intestines of the atherine, atherina of Linnæus. Redi, Gmelin, &c.

ARGENTINE flowers of antimony. See ANTIMONY, § O. Oxyds of antimony.

ARGENTINE, of Kirwan. See SCHIEFER SPATH.

ARGENTINE Felspar, of Kirwan. See FELSPEAR.

ARGENTOMAGUS, in *Ancient Geography*, *Argentomagus*, a town of Gaul, belonging to the Bituriges, in the road that led to Mediolanum on the east, and Limonum on the west.

ARGENTON, in *Geography*, a small and mean, but gay and lively town of France, in the department of the Indre, and chief place of a canton in the district of Chateauroux, five leagues S. S. W. of Chateauroux. It is situated in a beautiful valley, surrounded by vineyards on the Creuse. The place contains 3395, and the canton 10,359 inhabitants: the territory includes 290 kilometres, and 10 communes. N. lat. 46° 35'. E. long. 1° 52'.

ARGENTON le Chateau, a small town of France in the department of the Two Seves, and chief place of a canton in the district of Thouars; 3 leagues west of Thouars. The place contains 270 and the canton 7937 inhabitants; the territory includes 342½ kilometres, and 19 communes. N. lat. 46° 59'. W. long. 0° 33'.

ARGENTON les Eglises, a town of France in the department of the Two Seves, four miles north of Thouars.

ARGENTOR, a river of France in the department of Charente, formed by two streams called Argent and Or, and running into the Charente at the village of Porfac.

ARGENTORATENSIS, in *Ornithology*, a species of FRINGILLA found in the environs of Strasburgh. It is called by Brisson *Linaria argentoratensis*; and by Buffon, *Cyntel de Strasburgh*. This bird is brown; beneath, rufous with brown spots; abdomen and vent whitish. Gmelin. To this specific character may be added, that it scarcely exceeds the size of the common linnet: the quills and tail are brown; and the legs reddish. It is familiarly known about Strasburgh by the name of *Cyntel*, and is said to lay sometimes four eggs, but seldom if ever more.

ARGENTORATUM, in *Ancient Geography*, *Strasburgh*, a city of Gaul, belonging to the Triboci, or Trebochi, which was a passage from Gaul to Germany, whence its name Strate-burgus, or Strasburgh. It had anciently a manufacture of offensive and defensive arms of every kind. In the fourth century, Julian gained, under the walls of this city, a famous victory over the Germans, and took their king Chondomarus prisoner. After the establishment of Christianity among the Gauls, it became an episcopal see.

ARGENTRE' sur Laval, in *Geography* a town of France, in the department of the Mayenne, and chief place of a canton in the district of Laval, four miles east of Laval. The place contains 1665, and the canton 7530 inhabitants: the territory includes 182½ kilometres, and 9 communes.

ARGENTRE' sous Vitré, a town of France, in the department of the Ille and Villaine, and chief place of a canton in the district of Vitré, seven miles north-north east of La Guerche. The place contains 2283, and the canton 12,805 inhabitants: the territory includes 202½ kilometres, and 9 communes.

ARGENTUARIA, in *Ancient Geography*, a town of Belgic Gaul. Ptolemy.

ARGENTUM. See SILVER.

ARGENTUM album, mentioned in Domesday book, signifies, according to Spelman, bullion, or silver uncoined. In those ancient days, such metal passed as money from one to another in payment. *Sumitur pro ipso hoc metallo pensili non facto.*

ARGENTUM Dei, God's penny, anciently signified earnest-money, or money given to bind a bargain; in some places called *erles*, or *arles*, and by the civilians and canonists, *ARRHÆ*. *Et cepit de prædicto Henrico tres denarios de argenti Dei præ manibus.*

ARGENTUM fulminans. See Salts of SILVER.

ARGENTUM mosaicum or musivum. This is a metallic alloy in the form of silvery flakes, used as a pigment for giving a white metallic lustre to plaster casts, paper, porcelain, &c.

It is prepared in the following manner. Take an ounce and a half of pure tin, and the same quantity of bismuth: melt them together in a clean crucible, and stir the mass repeatedly with a clean iron rod till the two metals are accurately mixed. Then remove the crucible from the fire; and when its contents are on the point of becoming solid, pour in an ounce and a half of warmed quicksilver; stirring it as before. Previously to using this alloy, it must be ground in a stone or earthenware mortar, with white of egg or spirit varnish, and in this state applied to the intended work: when dried it may be burnished in the usual manner, and has then very much the appearance of silver. Encycloped. Method. Arts & Metiers, art. arg. musicum.

ARGENTUM nitratum, in Pharmacy, otherwise known by the names Nitrated silver, and Lunar caustic.—See SILVER, *medical preparations of*.

ARGENTUM vivum. See MERCURY.

ARGENVILLE, in *Biography*. See DEZALLIER.

ARGENUS, in *Ancient Geography*, a port of Carmania. Pliney.

ARGENUSÆ, or ARGINUSÆ, in *Ancient Geography*, small islands situated near the coasts of Asia Minor, south-east of the isle of Lesbos and near it. They were rendered famous by the battle gained by the Athenians over the Lacedæmonians, in the twenty-sixth year of the Peloponnesian war, or the 406th year before Christ. Of these three islands, the largest had a town called Arginusa.

ARGEONESUS, a small isle of Egypt, near Canopus; so called from Argeus, king of Macedon, who began his reign in the 678th year before the Christian æra.

ARGESTES, is used by Vitruvius for the wind which blows from that quarter of the horizon, which is 75° from the south and westward.

Ricciolus uses the term to denote the wind which blows at 22° 30' from the west towards the north, coinciding with that which is otherwise called W. N. W. Aft. Reform.

ARGETÆ, in *Ancient Geography*, a people of Asia who inhabited the western banks of the river Indus. Pliny.

ARGETENAR, in *Astronomy*, a star of the fourth magnitude, in the flexure of the constellation ERIDANUS.

ARGHAN, in *Geography*. See RAGIAN.

ARGIA, in *Entomology*, a species of PAPILO (*Dan. Card. Gmel.*) The wings are rounded, entire, and white; tip of the anterior pair black. This is a native of Sierra Leona in Africa; and is figured by Cramer under the name of *Cassiopea*. There is a large brown spot near the apex of the anterior wings beneath; and the inner margin is beset with long, fasciculated, erect, white hairs. Fabricius, &c.

ARGIA, in *Geography*, a town of Arabia Deserta, 200 miles S. S. E. of Ana. This is also the name of one of the three principalities into which Arabia Deserta is divided.

ARGIADES, in *Entomology*, a species of PAPILO (*Pleb. Rural. Gmel.*) The wings are entire, and blue, with a blackish margin; beneath, the colour is a brownish-grey, with a lunar mark, and two rows of ocellated dots. Fabricius.—This insect inhabits Saxony.

ARGIÆ Insule, in *Ancient Geography*, islands of Asia Minor, on the coast of Caria. Pliny.

ARGIANS. See ARGIVES, and ARGOS.

ARGIL. See CLAY.

ARGIL native.—*Alumine native*, Fr. *Reine Thonerde*, Germ. *Argilla pura*. Werner.—This mineral (called also by some Lac Lunæ,) is of a snow white or yellowish white colour. It is found in various sized kidney-form masses; is amorphous; and presents a fine-grained earthy fracture; it flies when broken into indeterminate blunt cornered fragments. It is opaque, but when soaked in water acquires a degree of semitransparency like gum tragacanth; stains the fingers, feels somewhat meagre; adheres slightly to the tongue, and exhales, when moistened, an earthy smell. It is easily broken, being almost friable. Sp. gr. according to Bergman = 1,305; according to Gmelin 1,669.

Native Argil is infusible *per se* even at 166° Wedgewood. It is soluble in mineral acids sometimes with and sometimes without effervescence, on account of a small proportion of carbonated lime with which it is often mixed. By the analyses of Schreber and Frischmann, it is also found to contain a few slight traces of iron and silex. It is said, with little probability however, that this mineral has been procured in Silesia, at Poliniere, and in Lombardy; the most authentic specimens come from Halle in Saxony, being found in the garden belonging to the college there; hence it has been suspected to be an artificial product, and the store of it is understood to have been for some years past exhausted. It is not made any use of. Widenmann, p. 385. Lenz, *versuch*, &c. vol. i.—Brochant, vol. i. Kirwan, vol. i.

ARGILA, in *Ancient Geography*, a town of Asia Minor, in Caria. Steph. Byz.

ARGILETUM, the name of a small hill of Rome, between mount Aventin and the capitol. Numa erected on this hill the temple of Janus.

ARGILIUS, a mountain of Egypt, near the Nile, so called because Jupiter carried thither the nymph Argea, and had a son by her named Dionysius.

ARGILL, or HARGILL, in *Ornithology*, one of the synonym names of the Linnæan ARDEA *dubia*, and *gigantic crane* of Dr. Latham, being so called by Ives, it. p. 183.

ARGILLACEOUS, in *Agriculture*, such ground or soil as contains a large proportion of clayey matter in its composition. See SOIL.

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ARGILLACEOUS *marl*, that sort of mail which contains much clay. As a manure, this kind of marl is the most proper for the sandy and light sorts of soil.

ARGILLACEOUS *earth*. See ALUMINE.

ARGILLACEOUS *schistus*. See THONSCHEIFER.

ARGILLITE of Kirwan. See THONSCHEIFER.

ARGILLOCALCITE of Kirwan. See MARL.

ARGILLY, in *Geography*, a town of France, in the department of the Côte d'Or, and chief place of a canton, in the district of Beaune, fifteen miles south of Dijon.

ARGILUS, in *Ancient Geography*, a town of Thrace in the vicinity of Amphipolis, at the mouth of the river Strymon. Thucydides (l. iv. §. 103.) says, that the Argilians were a colony of Andrians, established in the neighbourhood of Amphipolis.

ARGINA, or ARGYNA, an ancient town of Greece in the country of the Ozolian Locrians. Pliny.

ARGINUSÆ. See ARGENUSÆ.

ARGIOLUS, in *Entomology*, a species of PAPILO (*Pleb. Rural. Gmel.*) The wings are tailless; above blue, with a black margin; beneath bluish, slightly dotted with black. This insect inhabits Europe. Linnæus, &c.

ARGIPPÆI, ARGIPPÆANS, in *Ancient Geography*, a people of Scythia, whose language was different from that of the Scythians, though they resembled them in their dress. They subsisted not on the produce of the chase, but on the fruit of a tree, called "ponteia," of which, when ripe, they made a black and thick liquor, which they drank either clear or mixed with milk. Of the husks they prepared a kind of cake which they reckoned nutritive. As they lodged both in summer and winter under trees, they formed a covering to shelter them. Such persons, it is said, were deemed sacred, so that they had no occasion for military weapons in their own defence; and such was their reputation for wisdom, that their neighbours referred disputes to their arbitration, and their abode served as an inviolable asylum.

ARGIRA, a small fountain of Achaia, not far from Charadrus.

ARGIRI, or, as it is called by Arrian, *Argali*, a town of India, on this side of the Ganges. Ptolemy.

ARGIRO CASTRO, in *Geography*, a town of European Turkey, in the province of Livadia, 26 miles north-west of Lepanto.

ARGISCH, a town of Wallachia, on the frontiers of Transylvania, 8 miles north of Helmanitat, and 8 south of Tergowitz.

ARGISH, a town of Asia in Armenia, seated on the lake Van. N. lat. 38° 32'. E. long. 43° 15'.

ARGITHAMNIA, in *Botany*, (from *αργος*, white, and *δαμνος*, a little shrub.) Schreb. g. 1418. Brown. 338. Swartz. Prodr. 39. 386. Juss. Clafs. *monoecia tetrandria*. Nat. Ord. *Tricocca. Euphorbie*. Juss. Gen. Char. male flowers. *Cal.* perianth four-leaved; leaflets lanceolate, erect. *Cor.* petals four, lanceolate, ovate, ciliate, shorter than the calyx; nectary, four glands between the petals, roundish, depressed. *Stam.* filaments four, longer than the petals; anthers simple. *Pist.* rudiments of a style only. Female flowers in the same raceme under the males. *Cal.* perianth five-leaved, leaflets lanceolate. *Cor.* none. *Pist.* germ ovate, obscurely triangular; styles three, spreading, half two-cleft, each of the clefts bifid; stigmas lacerate. *Inc.* capsule tricoccos, three-celled, six-valved. *Seeds* solitary, roundish.

Eff. Gen. Char. male, *Cal.* four-leaved. *Cor.* four-petalled. Female, *Cal.* five-leaved. *Cor.* none; styles dichotomous. *Caps.* tricoccos, with solitary seeds.

Species 1. *A. caudicans*. Swartz. This shrub rises about five feet high, covered with a whitish bark; leaves at the ends

of the branches which they surround; they are oval, serrate, of a dark green, about one inch and a third in length, and an inch in breadth; flowers axillary on short peduncles; calyx five-leaved; stamens six, greenish. The leaves when bruised are very odoriferous. A native of Jamaica, on a dry gravelly soil.

ARGITHEA, in *Ancient Geography*, a town of Greece, the capital of Athamania, according to Livy.

ARGIVES, a people of Greece, who inhabited that part of Peloponnesus called ARGOLIS; which see.

ARGIZALA, or AGRISAMA, a town of Asia Minor, in Galatia. Ptolemy.

ARGO, in *Antiquity*, a ship or vessel celebrated among the poets; being that wherein the Argonauts, of whom Jason was the chief, made their expedition in quest of the golden fleece.

This ship, according to Diodorus Siculus, Apollonius, Tzetzes, Servius, and many other writers, is said to have derived its name from Argus or Argo, the person who, under the direction of Minerva, constructed it; others have thought, that it was called Argo from the Greek word *argos*, *swift*. Some again have attributed its name to that of Argos, the city in which it was built. Cicero cites, in his first Tusculan, two verses from an ancient Latin poet, who ascribes the appellation of Argo to the Argives or Greeks who sailed in it. Ovid, and many others, call it a sacred ship; and it was thus denominated, probably, because Minerva was said to have given instructions for building it, or because it was partly constructed of some sacred timber from the grove of Dodona, which was sacred to Jupiter Tomarius, and which issued out oracles.

Authors generally represent this ship as a long vessel, resembling the modern galleys, and furnished with 30 benches of rowers. It could not, however, be of any great bulk, if the ancient tradition be true, which reports, that the Argonauts were able to carry it on their backs from the Danube to the Adriatic sea. However this be, Jason, it is said, happily accomplished his enterprise; and consecrated the ship Argo to Neptune; or, as others say, to Minerva, in the isthmus of Corinth; where, they add, it did not remain long before it was translated into heaven, and made a constellation. For an account of this enterprise, and of the persons concerned in it, see ARGONAUTIC expedition, and ARGONAUTS.

ARGO *Navis*, or the *Ship*, in *Astronomy*, is a constellation of fixed stars in the southern hemisphere, whose stars, in Ptolemy's catalogue, are 45; in Tycho's, 11; in the Britannic catalogue, and Sharp's Appendix, 64.

ARGO, in *Conchology*, a species of ARGONAUTA that is distinguished from others of the same genus, by having the flat keel of the shell slightly toothed along the ridges on each side; or, as Linnæus expresses it, "carina utrinque subdentata," keel subdentated on each side. This is *nautilus tenuis* of Rumphius, *cymbium* of Gualteri and Testin, *nautilus subcatus* of Klein, *nautilus papyraceus* of Argenville, and *paper-nautilus*, *sailor-shell*, or *sailing-shell*, of English collectors.

The animal inhabitant of this shell, as the generic character of the argonauta implies, is either a *sepia* or a *clio*; most probably the former; and its appearance and manners of life are so singular and interesting, that they did not escape the notice of some of the earliest writers on natural history with whom the moderns are acquainted. It is a native of the Mediterranean and Indian seas, and is supposed to have taught mankind the use of sails, and the art of navigation in the infant state of society; our admired poet alludes to this opinion in the following well-known lines in the "Essay on Man:"

"Learn of the little nautilus to sail,
Spread the thin oar, and catch the driving gale."

When this creature intends to sail, it discharges a quantity of water, by which its specific gravity is made less than the sea-water in which it lives, and rising immediately to the surface, erects its arms, and expands a membrane between them, by means of which it is driven before the wind like a vessel under sail; at the same time that two of its arms which hang over the sides of the shell, serve for oars and rudder, as occasion may require. In this manner it is not unfrequently seen by navigators sporting upon the surface of the water in calm weather; but the moment a storm rises, or that any thing disturbs them, they lower the sail, draw their arms into the shell, and taking in as much of the sea-water as will sink them, descend directly to the bottom. Pliny, H. N. ix. 29, &c.

ARGOB, in *Ancient Geography*, a district of Palestine, belonging to the half tribe of Manasseh, in the country of Bashan, one of the most fruitful on the other side of Jordan. In this district were 60 cities, called Havoth Jair, which had high walls and strong gates.—Also, the capital of this district, (Deut. iii. 4. 14. 1 Kings, iv. 13.) which, according to Eusebius, was 15 miles west from Gerasa. This is probably the same with Ragab or Ragaha, mentioned by Josephus, and in the Mishna.—*Argob* was also a place in Samaria, near the royal palace, where Pekah, the son of Remaliah, assassinated Pekahiah, the son of Menahem, king of Israel. 2 Kings, xv. 25.

ARGODA, or ARGHUM, a town in the interior of the Tauric Chersonesus, to the south of Portacra. Ptolemy.

ARGOENUS MOUNTS, a mountain of Asia, towards N. lat. 38° 20' north of mount Taurus.

ARGOL, in *Chemistry*, the same with TARTAR.

ARGOL, See ARCHIL.

ARGOL, in *Geography*, a town of France, in the department of Finisterre, and chief place of a canton in the district of Chateaulin, two leagues north west of Chateaulin.

ARGOLI, ANDREW, in *Biography*, an Italian mathematician, was born at Tagliacozzo, in the kingdom of Naples, whence he removed to Venice. Here his merit was acknowledged, and he was appointed professor of mathematics in the university of Padua; and in 1636 distinguished by the title of chevalier. He died in 1657, and left a treatise "De diebus criticis," printed in 1652, 4to.; and "Ephemerides," from 1620 to 1700, 4 vol. in 4to. Nouv. Dict. Hist.

ARGOLIC SEA, in *Ancient Geography*, a name given by some writers to part, and by others to the whole of the ÆGEAN SEA.

ARGOLIC Bay, now the *gulf of Napoli*, was formed by a part of the sea that intercepted the peninsula called Argolis on the south-east, and Laconia on the west. In this bay Pliny places the following islands: Pityusa, Irine, Ephyre, Tiparenius, Aperiopia, Colonis, Aristeria, and Calauria.

ARGOLIS, so called from an ancient prince whose name was Argos, one of the six districts of the Peloponnesus, situate on its north-east side, was bounded by Achaia on the north, Arcadia on the west, Laconia and the Argolic gulf on the south, and the Ægean sea on the east. The ancient limits are not clearly ascertained; but it was much enlarged by some of its monarchs, so that it extended from east to west about 70 miles; and from north to south, from 37½° to 38° 20' N lat. or about 50 miles. This province is peculiarly interesting to the Grecian antiquarian and historian, because it was the cradle of the Greeks, since it first received the foreign colonies by whom they were civilized. It became the theatre of most of the events recorded in the early annals of Greece. Here flourished Inachus, who gave

gave his name to the river which waters the territory of Argos: its other rivers were Charadrius, Erafinus, and Phryxus: there also lived Danaus, Hypermnestra, Lynceus, Alcæon, Perseus, Amphitryon, Pelops, Atreus, Thyelles, Agamemnon, and many other celebrated heroes and heroines. This province contained the cities of Argos, Nemæa, Mycenæ, Nauplia, Træzené, and Epidaurus. The kingdom of Argos was founded, according to Eusebius, 1080 years before the first Olympiad, or 1856 years before Christ, by Inachus, and continued under the name of the Argolic kingdom till the reign of Acrisius, the fourteenth king, who transferred the seat of it to Mycenæ about the year 512 from its foundation; from which time that part of it was called the kingdom of Mycenæ till the dissolution, when the Heraclidæ made themselves masters of this and of the whole peninsula, after it had stood upwards of 754 years under the government of twenty-one monarchs. The Argolic kingdom, properly so called, retained likewise its own kings after this division, until the Heraclidæ, who divided the peninsula of Peloponnesus into three kingdoms. That of Argos had not continued above 40 years, before Malpas, their last king, having made an effort to recover the royal prerogative, lost both his kingdom and life. At the period which Homer (*Iliad*, lib. ii. v. 559 to 580) celebrates, Argolis appears to have been governed by two dynasties, of which the one reigned at Argos, and the other at Mycenæ; and the respective princes were Diomede and Agamemnon. The king of Mycenæ was at that time the most powerful chieftain not only in Argolis, but in the whole of Greece. The misfortunes of the family of Agamemnon soon led to the humiliation of Mycenæ. Argos became pre-eminent in the district of Argolis, and the Argives, inhabitants of Argos and its dependencies, during the historic ages of Greece, occupy the most prominent part of their section of the peninsula.

In their domestic institutions, the Argives, in common with other Grecian states, were first governed by limited kings, and afterwards their princes having attempted to become absolute, they established a republican form of government. In a maritime situation, and having easy access to the growing refinements of Asia Minor, of Corinth, and of Athens, the Argives successfully cultivated commerce and the arts; and though they did not neglect rural occupations, they were much less exclusively addicted to pasturage and agriculture than their inland neighbours of Arcadia. The accessibility of their country, and their vicinity to the heroic and aspiring Spartans, exercised their courage in contests of defence, while their own ambition impelled them to offence and aggression.

About a century before the first Persian invasion, the Argives manifested a desire and intention to reduce and command the inferior towns of the province. The insolence of the capital provoked the indignation of the country. Mycenæ, Træzené, Epidaurus, and other places of less note, were often conquered, but never thoroughly subdued. Interest taught them to unite, and union enabled them to set at defiance the power of Argos, by which they were branded as rebellious, and which they reproached as tyrannical. Having many contests with the Spartans, with various success, they, about the time of Cræsus, received a decisive defeat (Herodotus, *Clio*), which depriving them of the valuable territory of Thyrsa, affected their interest much, but operating on the high spirit of Grecian heroism, affected their sensibility more. They had hitherto, like most of the Greeks, adorned their long hair to encase the gracefulness of manly beauty, and to render their appearance more terrible to their enemies. But in remembrance

of this disaster, they shaved their heads, deprived the Argive women of their golden ornaments, and bound themselves by a dreadful imprecation never more to assume their wonted appearance until they had recovered possession of Thyrsa. Although they were not able to recover this territory from the Spartans, now the most potent state of Greece, the Argives continued to be the second power in the Peloponnesus. But having, from jealousy of the Spartans, declined to participate in the defence of Greece against Persia, the Argives fell into the disrepute which never fails to overtake those that from intestine differences and selfish rivalry withhold the efforts of patriotism, when required to repel an invading enemy. As deserters of the common cause, the Argives incurred the hatred and contempt of their public-spirited neighbours. Mycenæ, Epidaurus and Træzené, which formed respectively the greatest strength and ornament of the Argive territory, threw off the yoke of a capital which for allegiance did not afford protection, and other towns of less importance obeyed the summons to liberty and independence. The insurgents strengthened themselves by foreign alliance, and renounced the authority to which they had so long submitted. By division, intestine war, and the devastation of the province, they paid the price of their baseness or folly, and left to posterity an awful lesson of the impolicy of obstinacy and separation, where common interest demands energy and concert.

If the Argives suffered by inaction when duty and interest called for activity, they did not rashly fall into the opposite extreme of embroiling themselves in the quarrels of their neighbours, when these were not likely to affect their interest or security. During the first years of the Peloponnesian war, they kept aloof from the contest, and employed themselves in repairing the evils of the late dissension; but finding the Spartans likely to attain a pre-eminence that must be dangerous if not fatal to neighbouring states, they formed a defensive confederacy, which taking its name from its chief promoters, was called the Argive alliance. Soon after, however, deviating from the prudent principle of the confederation, they at the instance of Alcibiades became aggressors, broke the amnesty with the Spartans, and brought upon themselves the punishment of precipitate injustice. The Spartans taking the field, ravaged the country; internal tumult co-operated with foreign hostility in distressing the unsteady Argives, and compelled them to seek again in peace and justice the recovery of those blessings which they had lost by war and rapacity.

When the Spartans, by the complete discomfiture of Athens, became predominant over Greece, remote as well as adjacent, it would have been madness in the conterminous Argives to have questioned their supremacy, or to have provoked the anger of a power which could now overwhelm them in destruction. They therefore acquiesced in a superiority which their opposition could not have destroyed. But when the imperious insolence of victorious Sparta excited general resentment, the Argives were among the first to join in a confederacy for repressing the ambition of Sparta, and restoring the independence of Greece. The policy of Antalcidas procured the establishment of a peace, wherein, by ignominious sacrifices to the ambition of Persia, Sparta was able to retain a great part of her influence over her neighbours. Her exercise of her dominion, however, did not peculiarly affect Argos; and it was reserved for another state finally to humble the Spartan power. But the battle of Leuctra had no sooner relieved the Argives from their dread of the Spartans, than intestine dissensions again broke forth.

The great defect of the Grecian republics was the want of

an efficient control, which should at once mingle liberty and order, and allowing to each class and individual all the power that was necessary for promoting public and private good, should restrain both tyranny and licentiousness. Hence there were frequent contentions between the aristocratical and democratical parties, not rarely leading to sedition and convulsion. The Athenians being the chief patrons of democracy, and the Spartans of aristocracy, the relative power of these parties, and other republics, was strongly affected by the preponderance of Athens, or of Sparta. Lacedæmon being humiliated by Epaminondas, the influence of aristocracy was weakened throughout Greece; and the nobles in many places were slain or driven into exile. At Argos, more than two thousand of the aristocratical party were killed. The Argives now joined the Thebans against the Spartans, and were instrumental in raising Thebes to a pitch of power which might have been dangerous to the independence of Argos, and of all Greece, had not the death of their consummate general dried up the source from which Theban prosperity and greatness flowed.

The Peloponnesus being now freed from fears of the Lacedæmonians, the Thebans being in a state of languor after their late and extraordinary efforts, and the Athenians immersed in pleasure and luxurious indolence, southern Greece was for several years quiet, and the Argives are rarely mentioned in history. But Sparta having recovered a part of her former power, resumed her pretensions to the direction of the Peloponnesus. The Argives formed with Arcadia and Messenia a league for maintaining their respective independence: with fatal impolicy they called in Philip of Macedon, who overcame the Spartans. But a nominal auxiliary proved a real master; the Argives now shared the fate of the other Grecian states, and became a dependency of Macedon. See ARGOS.

ARGONAUTA, in *Conchology*, the name of one of the Linnæan genera, the character of which is thus defined: animal a sepia or elio; shell univalve, spiral, involuted, membranaceous, and containing only one cell. The species of this genus are few. Gmelin describes five, viz. *argo*, *virgatus*, *cymbium*, *cornu*, and *arctica*; which see.

ARGONAUTIC, in *Ancient History*, denotes something belonging to the Argonauts. The Argonautic expedition is one of the most memorable transactions of antiquity; and references to it are interspersed in most of the writings of the ancients. By the Greek writers, who have transmitted complete histories of this event, we are informed that the intention of this armament was to bring back a golden fleece, which was detained by Æetes king of Colchis. It was the fleece of that ram on which Phrixus and Helle fled to avoid the anger of Ino. Upon his arrival at Colchis, Phrixus sacrificed it to Mars, in whose temple it was suspended. This fable has been thus explained: Phrixus flying with his sister Helle from the rage of their stepmother Ino, the daughter of Cadmus, went on board a ship, whose ensign was a golden ram, and sailed to Colchis. Helle was drowned by the way in that sea, which from her was called the Hellespont, now the Dardanelles. This, it is said, was the ground of the poetical fable, that a ram with a golden fleece swam away with them to Culchis; and that the Argonauts undertook their famous expedition in order to regain that fleece.

After an interval of some years, Pelias, king of Iolcus, commissioned Jason, son of his brother Æson, to go and recover this precious fleece. For this purpose a ship was built at Pagasæ, a city not far from mount Pelion in Thessaly. It was the first that was ever attempted; and the merit of the performance is ascribed to Argus, who was

instructed by Minerva, or divine wisdom. This ship, called Argo, was built partly with some sacred timbers from the grove of Dodona, sacred to Jupiter Tomarius; and on this account it is said to have been oracular, and to have given verbal responses; which history is beautifully described by Claudian, *De Bello Getico*, v. 16.

“Argois trabibus jactant fodasse Minervam:
Nec memoris tantam vixisse carentia sensu
Robora; sed, casu Tomari Jovis augure luco,
Arbore præstata tabulas animasse loquaces.”

As soon as this sacred machine was completed, a select band of heroes, the prime of their age and country, consulted together and engaged in this honourable enterprise. Among these Jason was the chief by whom the others were summoned and collected. Chiron, or, as others say, Musæus, framed for their use a delineation of the heavens, and constructed the first sphere, on which the stars were formed into asterisms for the benefit of the Argonauts, that they might be the better able to conduct themselves in their perilous voyage. The heroes being all assembled, waited for the rising of the Pleiades, at which season they set sail. The general account of their rout is, that they coasted Macedonia, and proceeded to Thrace, where Hercules engaged with the giants, as he is supposed to have also done in several other places. They visited Lemnos and Cyzicus, and from thence came to the Bosphorus. Here were two rocks called the Cyanean, and also the Symplegades, which used to clash together with a mighty noise, and intercept whatever was passing. The Argonauts let fly a dove, that they might discover by her fate if there were a possibility of escaping. The dove made its way, with some difficulty; and encouraged by this omen, the heroes pushed forward, and with the assistance of Minerva, escaped. After many adventures, which the poets have described in a manner wonderfully pleasing, they arrived at the Phasis, which was the chief river of Colchis. Immediately addressing Æetes, and informing him concerning the cause of their visit, they demanded a restitution of the fleece. The king was exasperated at their claim, and refused to give up the object in view, but upon such terms as seemed impracticable. Jason, however, accepted of the conditions; and after having engaged in many labours, and, by the help of Medea, soothed a sleepless dragon which guarded the fleece, he at last brought off the prize. This being happily effected, he retired privately to his ship, and immediately set sail, at the same time bringing away Medea, the king's daughter. As soon as Æetes was apprised of their flight, he fitted out some ships to pursue them, and arriving at the Thracian Bosphorus, took possession of that pass. The Argonauts, having their retreat prevented, returned by another rout, which writers have differently represented. The author of the Orphic Argonautics makes them pass up the Phasis towards the Mæotis, and from thence, through the heart of Europe, to the Cronian sea, or Baltic; and then to the British seas and the Atlantic; and afterwards, by Gades and the Mediterranean, home. Timæus says, they proceeded northward to the same seas, by the Ister. Timæus traces their rout to the fountains of the Tanais, through the Palus Mæotis; thence, through Scythia and Sarmatia, to the Cronian seas; and from thence, by the Atlantic, home. Hesiod and Antimachus conduct them by the Southern ocean to Libya, and thence over land to the Mediterranean. Hecateus Milesius supposed that they went up the Phasis, and turning south over the great continent of Asia, arrived at the Indian ocean; and thence proceeded to the Nile in Egypt, whence they made their progress regularly home. Valerius Flaccus copies Apollonius Rhodius, and pursues their course up the Ister,

Ister, and by an arm of that river to the Eridanus, and thence to the Rhone, and afterwards to Libya, Crete, and other places. Pindar conducts them by the Indian ocean. Diodorus Siculus brings them back by the same way as they went out. Upon their arrival in Greece, they offered sacrifices to the gods, and consecrated their ship to Neptune.

Although the object of this expedition has been differently stated, and the account of it has been intermixed with many poetical fables, the reality of it has been generally admitted both by ancient and modern writers. Among the most eminent ancient writers who admitted it as an historical truth, were Herodotus, Diodorus, and Strabo, and with them every Grecian mythologist; and among the fathers, Clemens, Eusebius, and Syncellus. Among the moderns, the principal are, Scaliger and Petavius; and of our country, Archbishop Usher, Cumberland, Dr. Jackson, and Sir Isaac Newton. The learned Bryant (*Anc. Mythol.* vol. 2. p. 484, &c.) rejects the history of the Argonautic expedition as a Grecian fable. The Grecians, he says, have applied to themselves an ancient history to which they had no relation; and as the real purport of it was totally hid from them, they have, by their colouring and new-modelling what they did not understand, run themselves into a thousand absurdities. He alleges the inconsistencies and contradictions of the different writers, who have given an account of this expedition. They differ as to the number of persons concerned in it; and yet, allowing the highest estimate, they were too few to have achieved what they are said to have performed. After many adventures, and long migrations in different parts, the Argonauts are said to have returned to Ioleus, and to have accomplished all their peregrinations in four, or, as some state it, in two months. "Is it possible," says Bryant, "for fifty persons, or ten times fifty, to have performed such mighty operations in this term, or indeed at any rate to have performed them? They are said to have built temples, founded cities, and to have passed over vast continents, and through seas unknown; and all this in an open boat, which they dragged over mountains, and often carried for leagues upon their shoulders." Besides, the æra of the expedition cannot be settled without running into many difficulties, from the genealogy and ages of the persons spoken of. Some make the event ninety years, others seventy-nine, others only forty years before the æra of Troy. Writers have also differed as to the place whither the expedition was directed, the builder of the ship, and various other circumstances minutely recited by this learned writer. According to him, the mythology and also the rites of Greece were borrowed from Egypt; and they were founded upon ancient histories, which had been transmitted in hieroglyphical representations. These by length of time became obscure; and the sign was taken for the reality, and accordingly explained. In the account of Argo, he says, we have undeniably the history of a sacred ship, the first that was ever constructed. This was no other than the ark, called by the Greeks "Argus" and "Arcas," originally framed by divine wisdom. As the history of the Argo related to an ancient event which the Egyptians commemorated with great reverence, the delineation of it in the sphere was intended as a lasting memorial of a wonderful deliverance; on which account one of the brightest stars in the southern hemisphere is represented upon the rudder of the ship. The star was called by the Egyptians "Canopus," which was one of the titles of their chief deity, and regarded under this denomination as the particular god of mariners. The star of this deity was put upon the rudder of the Argo to shew, that providence was its guide. According to this writer, all the mistakes in this

curious piece of mythology arose from hence, that the Arkites, who came into Greece, settled in many parts, but especially in Argolis and Theffalia, where they introduced their rites and worship; and the several circumstances of the Argonautic history afford wonderful evidence of the Arkites and their rites. The Grecians took the history to themselves; and in consequence of this assumption, wherever they heard that any people under the title of Arcades, or Argæi, settled, they supposed that there Argo had been. Hence they made it to pass not only through the most distant seas, but over hills and mountains, and through the midst of both Europe and Asia. They sent their heroes to Colchis, merely because some of their family had settled there. Jason, says Bryant, who was esteemed the chief in all the Argonautic adventures, was a feigned personage made out of a sacred title of the Arkite god, the same as Arcas, Argus, Inachus, and Prometheus; and the temples said to be built by him were such as were erected to his honour. Many of these were in Armenia, the region of the most ancient Minyæ, who were the worshippers of the lunar deity Menes; and particularly in the vicinity of Mount Paros, where the ark really rested, and where the memorials of the deluge were religiously observed.

Among those writers who have allowed the reality of the Argonautic expedition, very different opinions have been entertained concerning its object and design. Diodorus Siculus supposes that the golden fleece denoted the skin of a sheep sacrificed by Phrixus, and guarded with care, from an apprehension that, according to an ancient oracle, the king of Colchis would be killed by the person who succeeded in taking it away. Strabo and Justin supposed that Colchis, a country lying between the Euxine sea and Iberia, and now called Mingrelia, had considerable mines of gold, which gave rise to the fable of the fleece. These mines were apprehended by certain mythologists to have been contiguous to some of those torrents which fall from the neighbourhood of mount Caucasus, and to have brought down with them great quantities of gold dust, which the inhabitants saved by setting fleeces of wool across the narrow passages of those currents. This account was afterwards disguised by the fabulous poets after their manner, and embellished with the stories of dragons, brazen bulls, dreadful seas, dangerous passages, and many such perils and insurmountable difficulties as commonly attend the too eager search after that pernicious, though so much desired, metal. Pliny and Varro ascribe this voyage to the wish of some Greek merchants to get possession of the fine wool of Colchis. The account which Suidas gives of the golden fleece, namely, that it was a parchment book made of sheep's skin, and in which was written the whole secret of transmuting all metals into gold, scarcely deserves mention.

Sir Isaac Newton, in his *Chronology*, (*apud oper. tom. v. p. 79. ed. Horsley*), thinks that the Argonautic expedition was an embassy sent by the Greeks, during the intestine divisions of Egypt, in the reign of Amenophis or Memnon, to persuade the nations upon the sea-coasts of the Euxine and Mediterranean seas, to take the opportunity of Amenophis's stay in Ethiopia, for revolting from Egypt, shaking off the yoke laid upon them by Sesostris, and setting up for themselves, as the Libyans, Ethiopians, and Jews had done before; and fetching the golden fleece was only a pretence to cover their true design.

The following judicious and satisfactory account of the Argonautic expedition, and its effects, is given by Dr. Gillies, in his "*History of Greece*." The northern districts of Theffaly being peculiarly exposed to the dangerous fury of invaders, the petty princes of that province entered into a confe-

confederacy for their mutual defence. They assembled in spring and autumn at Thermopylæ, a place afterwards so illustrious, and then governed by Amphictyon, a descendant of Deucalion, whose name is immortalized in the Amphictyonic council. The advantages which the confederates derived from this measure, were soon perceived by their neighbours. The central states gradually acceded to their alliance; and, about the middle of the fourteenth century before Christ, Acrisius king of Argos, and other princes of the Peloponnesus, were allowed to share the benefits and security of this useful association.

After this event, the Amphictyons appear to have long confined themselves to the original purpose of their institution. The states, whose measures were directed by this assembly, found sufficient occupation in defending their own territories; and near a century elapsed, before they undertook, by common consent, any distant expedition. But it was not to be expected that their restless activity could be always exhausted in defensive war. The establishment of the Amphictyons brought together the chiefs most distinguished by birth and bravery. Glory and emulation prompted them to arms, and revenge directed those arms against the barbarians. Jason, Admetus, and other chieftains of Thessaly, having equipped a small fleet in the neighbouring harbour of Iolcus, and particularly the ship *Argo*, of superior size and construction to any before known, were animated with a desire to visit foreign lands, to plant colonies in those parts of them that appeared most delightful, and to retort on their inhabitants the injuries which Greece had suffered from strangers. The princes of the north having proclaimed this spirited design over the central and southern provinces, the standard of enterprise and glory was speedily surrounded by the flower of the Grecian youth, who eagerly embraced this honourable opportunity to signalize their manly valour. Peleus, Tydeus, Telamon, and, in general, the fathers of those heroic chiefs, who, in the succeeding age, shone with distinguished lustre in the plains of Troy, are numbered among the leaders of the Argonauts. They were accompanied by the chosen warriors, and by the venerable prophets, of their respective tribes; by an Esculapius, the admired father of the healing art, and by the divine Orpheus, whose sublime genius was worthy to celebrate the amazing series of their adventures.

These adventures, however, have been too much adorned by the graces of poetry, to be the proper subjects of historical composition. The designs of the Argonauts are veiled under the allegorical, or at least doubtful, phrase, "of carrying off the golden fleece;" which, though easily explained, if we admit the report that the inhabitants of the eastern banks of the Euxine extended fleeces of wool, in order to collect the golden particles which were carried down by the torrents from mount Caucasus, is yet described in such various language by ancient writers, that almost every modern who examines the subject, thinks himself entitled to offer, by way of explanation, some new conjecture of his own. But, in opposition to the most approved of these conjectures, we may venture to affirm, that the voyage to Colchis was not undertaken with a view to establish extensive plans of commerce, or to search for mines of gold, far less to learn the imaginary art of converting other substances into that precious metal; all such motives supposing a degree of speculation and refinement unknown in that age to the gallant but un instructed youth of Thessaly. The real object of the expedition may be discovered by its consequences. The Argonauts fought, conquered, and plundered; they settled a colony on the shores of the Euxine; and carried into Greece a daughter of the king of Colchis, the celebrated

Medea, a princess of Egyptian extraction, whose crimes and enchantments are condemned to eternal infamy in the immortal lines of Euripides.

Notwithstanding many romantic fictions that disfigure the story of the Argonauts, their undertaking appears to have been attended with a considerable and a happy effect on the manners and character of the Greeks. From the æra of this celebrated expedition, we may discover not only a more daring and more enlarged spirit of enterprise, but a more decisive and rapid progress towards civilization and humanity. The sullen and unsocial chiefs, whose acquaintance with each other most commonly arose from acts of mutual hostility, hitherto gave full scope to the sanguinary passions which characterize barbarians. Strength and courage were almost the only qualities which they admired: they fought and plundered at the head of their respective tribes, while the inhabitants of the neighbouring districts were regarded as fit objects only to excite their rage, and gratify their rapacity. But these gloomy warriors, having exerted their joint valour in a remote expedition, learned the necessity of acquiring more amiable virtues, as well as of adopting more liberal notions of the public interest, if they pretended to deserve the esteem of their equals. Military courage and address might alone procure them the respect of their immediate followers, since the safety of the little community often depended on the warlike abilities of the chieftain; but when several tribes had combined in a common enterprise, there was less dependence on the prowess of any single leader. Emulation and interest naturally rendered all these leaders as jealous of each other, as desirous of the public applause; and, in order to acquire this applause, it was necessary to brighten the lustre of martial spirit by the more valuable virtues of justice and humanity.

The Argonautic expedition is one of the greatest epochs or periods of history, which sir Isaac Newton endeavours to settle, and from thence to rectify the ancient chronology. This he shews, by several authorities, to have been one generation, or about 30 years, earlier than the taking of Troy, and about 43 years later than the death of Solomon. Blair refers this expedition to the year 1263 before Christ, or 79 years before the taking of Troy. Playfair places it 41 or 42 years before this event, or in the year 1225 before Christ. For an account of the Newtonian system, of the arguments in its favour, and of the objections that have been urged against it; see *CHRONOLOGY*.

ARGONAUTICA, in *Literary History*, denotes poems on the subject and expedition of the ARGONAUTS. We have the Argonautics of Orpheus, in epic verse, published by H. Stephens; the Argonauticon of Valerius Flaccus, in eight books of Latin heroic, in imitation of Apollonius, with respect to which Burman observes, that the imitator has often surpassed the original; the Argonautics of Apollonius Rhodius, an heroic poem, consisting of four books, "opus," as Quintilian calls it, "non contemptendum."

ARGONAUTS, in *Antiquity*, a company of fifty-one, according to Valerius Flaccus, or, according to Apollonius Rhodius, forty-four heroes, who embarked along with Jason in the ship *Argo*, for Colchis, with a design to obtain a golden fleece.

Hercules, Theseus, Castor, Orpheus, &c. were of the number of the Argonauts.

ARGONAUTS of *St. Nicholas*, was the name of a military order, instituted by Charles III. king of Naples, in the year 1382, for the advancement of navigation, or, as some say, merely for preserving amity among the nobles.

They wore a collar of shells, inclosed in a silver crescent, whence hung a ship, with this device, "Non credo temperi,"

pori," "I do not trust time." Hence these Argonaut knights came to be called *knights of the shell*. They received the order of St. Basil archbishop of Naples; and held their assemblies in the church of St. Nicholas, their patron.

ARGONNE, in *Geography*, a country of France, before the revolution, about 20 leagues in length, between the Meuse, the Marne, and the Aisne; of which the capital was St. Menchold.

ARGOON. See ARGUN.

ARGOPHYLLUM, in *Botany* (*Argos* and *φυλλον*, white-leaf; the leaves being of a glossy whiteness beneath). Forster. g. 15. Supp. p. 22. Schreb. 393. Juss. 161. Clafs, *pentandria monogynia*. Nat. Ord. *Erica*. Juss. Gen. Char. *Cal.* perianth short, quinquefid; divisions sharp. *Cor.* petals five, lanceolate, spreading, three times greater than the calyx; nectary five angled, pyramidal, open at the top, consisting of many converging papillas, connate at the base. *Stam.* filaments five, subulate, inserted into the receptacle, shorter than the nectary; anthers ovate. *Pist.* germ turbinate, fastened at the bottom to the calyx, flat above; style filiform; stigma globular. *Per.* capsule hemispherical, flat above, three-celled, opening into three parts. *Seeds*, numerous, globular, porous.

Ess. Gen. Char. *Capf.* three-celled. *Nect.* pyramidal, five-angled, the length of the corolla.

Species 1. *A. nitidum*, perennial, stems, petioles, leaves underneath, panicles, calyxes, shining with a silky down; leaves alternate, petiolate, ovate, pointed at both ends, entire; peduncles axillary, solitary, elongated, terminating in a panicle. Found in New Caledonia.

ARGOS, *αργος*, from *α* negat ve, and *εργον*, work, or business; as if it were *αεργος*. So *αργος αργυρος* is silver not worked; *αργος σπορος*, in Hippocrates, is crude wheat, not prepared, but such as it is taken from the floor.

ARGOS, in *Ancient Geography*, a name given to several cities; and more particularly to the capital of a small kingdom of Greece, denominated ARGOLIS. It was also called Argi, and Inachus, from its founder. It is said to have been built by a colony of ARGIVES, who migrated from Egypt under the command of Inachus, and settled in Greece. Inachus was styled the son of the ocean, because his origin was not known, and because he had come by sea into Greece. Before his arrival the inhabitants were rude and barbarous. These he united and civilized, and instructed in various arts. His son Phoroneus instituted the laws of government; and, on that account, he has been called the first king in Argos, the first of men, and the father of mortals. The city was seated at some distance from the sea, on the river Inachus, in a spacious, rich, and well-watered plain, from which it is supposed to have derived its name. To this purpose Strabo says (l. viii. p. 170, &c.) that Argos is a Macedonian or Thessalian term, signifying a plain or champaign country, and thus it is described by Homer. Hence it has been concluded that they are mistaken, who have represented this city and its territory as dry and barren, and that they have misunderstood the epithet of "thirsty," ascribed to it by the poet; which, it is conceived, should have been translated "desireable," because it was well watered by the Inachus, and by several other rivulets and springs. It was also distinguished by the epithet "hippobotos," from the goodness of its adjacent pastures, in which Neptune is said to have fed his horses, or perhaps from the excellent breed of horses which this territory produced. The epocha of its foundation is referred to the year 1080 before the first Olympiad, or 1856 before Christ; and it lost its distinction as the capital of the kingdom after the reign of Acrisius, or about the year 1344 before Christ,

when the seat of government was transferred to Mycenæ. Upon the arrival of the Heraclidæ, and the division of the peninsula into three kingdoms, about the year 1104, Argos recovered the rank which it had lost. Strabo speaks of Argos as the principal city of the Peloponnesus, next to Sparta. It was adorned by a number of magnificent edifices and statues. The most ancient of these edifices was the temple of the Lycian Apollo, erected to this god by Danaus; and in this temple was the statue of Apollo by Attalus the Athenian, that of Bacchus with a bull upon his back, one of Mercury by Epæus, and others dedicated to Apollo, Jupiter, and Diana. Over against this temple was that of Jupiter Nemæus, with the statue of the deity in bronze by Lysippus; the temple of Phoroneus, whose anniversary was celebrated by the Argives; the temple of Fortune, and another dedicated to the Seasons, &c. &c. Here were also the statues of the heroes who took Thebes, and the cenotaph of the Argians who perished at the siege of Troy. The celebrated citadel, called "Larissa," was seated on an eminence to the north-west of the city. Argos was also much enriched by its trade, and particularly by the fine race of horses that were bred about its territory. Bryant refers the origin of Argos, of the Argives, and also of the Argonauts, to a colony of Arkites, who came from Egypt and diffused themselves widely through various parts of Greece. Anal. Anc. Mythol. vol. ii. p. 506. The medals of this city were gold, silver, and bronze; and their ordinary type was a wolf, which was the symbol of the Argians. There were also imperial Greek medals struck in this city, in honour of Adrian, Antonine, Verus, Septimius Severus, Faustina, Donna, Geta, Elagabalus, Marcus Aurelius, Plautilla, Galien, and the younger Valerian. A small village, called *Argo*, still subsists on the ruins of the ancient Argos.

ARGOS, a town of the island of Nisyrus, one of the Cyclades. Steph. Byz.—Also, a town of Asia, in Cilicia, called in the time of Steph. Byz. Argeopolis, situated near mount Taurus.—Also, a town of Asia Minor, in Caria. Steph. Byz.—Also, a place in the island of Cyprus, famous for the temple of Apollo Erythius, where Venus found the body of Adonis.

ARGOS *Amphilochium*, a town situated in the Ambracian gulf, two stadia, according to Polybius, and according to Livy twenty-two miles, from the city of Ambracia. Thucydides, who represents it as a maritime town, ascribes its origin to Amphilochus, the son of Amphiarous, some years after the war of Troy; others say that it was founded by Alcmeon, in honourable remembrance of the friendship that subsisted between him and his brother Amphilochus.

ARGOS *Hippium*. See ARPI.

ARGOS *Orestium*, a town of the Orestiade, a country of Epirus, built by Orestes; where he made his escape, after having killed his mother. Strabo.

ARGOS, or *Argers*, in *Geography*, a mean town of Turkey, in the Morea on the bay Napolidi Romania, and on the river Najo or Inachus; N.N.W. from cape Angelo. The Turks took it from the Venetians, under Mahomet II.; twenty miles south of Corinth. N. lat. 37° 30'. E. long. 23° 5'.

ARGOS, a small town of Africa, in the kingdom of Dongola in Abyssinia, on the eastern bank of the Nile, through which the caravans that carry soap and linen pass, and where they pay a duty to the douane of the place.

ARGOSTOLI, a sea-port of the island of Cephalonia, opposite to Albania, the best in the island, at the distance of five miles from the fortrefs.

ARGOUGES, a town of France, in the department of the Channel, four leagues south of Avranches.

ARGOW,

ARGOW, ARGAU, or ARGOVIE, a country of Switzerland, situated on the river Aar, from which it derives its name, and forming the north-eastern part of the canton of Berne. It is divided into Upper and Lower Argow, which are separated from each other by the small town of Arburg. The upper Argow extends to the Thun, and the lower to the confluence of the Aar with the Rhine. By the division of 1798, Argow, the chief town of which is Arau, was made a distinct department or canton; but by the constitution of 1801, Argovie was re-united with Baden and with the upper part of the Frickthall, and thus formed into the fourteenth department or canton, and six persons were appointed to represent it in the diet. Argow is a very fertile country, well watered by rivers which flow into it from the canton of Lucerne, abounds with excellent pastures, and produces also corn and wine. The industry of the inhabitants in the Lower Argow compensates for the less fertility of the soil. The reformed religion is the general profession of its inhabitants. See BERNE.

ARGU, a town of Syria, five miles south-east of Damascus.

ARGUEDAS, a town of Spain, in Navarre, $2\frac{1}{2}$ leagues from Tudella.

ARGUEIL, a town of France, in the department of the Lower Seine, chief place of a canton, in the district of Neufchatel, six leagues north-east of Rouen. The place contains 340, and the canton 9,608 inhabitants: the territory includes 215 kilometres, and 22 communes.

ARGUENON, a river of France in the late province of Bretagne, which has its source near Jugon, and runs into the sea near St. Malo.

ARGUES, GERARD D', in *Biography*, a mathematician of France, was born at Lyons in 1597, and died there in 1661. He was the disciple and friend of Descartes, whom he defended in return for his instruction. The works of this writer in French, are "A treatise on Perspective," fol.; "A treatise on Conic Sections," 8vo.; "The practice of Drawing," 8vo.; and "A treatise on Stone-cutting," 8vo. *NOUV. DICTIONNAIRE.*

ARGUIER, in *Geography*, a town on the south point of Porto Galere, towards the north-west corner of the island of Sardinia, in the Mediterranean, nearly east from cape Cals.

ARGUIN, an island of Africa, in the Atlantic, situate on the northern part of the coast of Senegambia, and in a gulph of the same name formed by cape Blanco, about ten leagues from it. N. lat. $20^{\circ} 20'$. W. long $17^{\circ} 20'$. To the west of this island are two other long small islands, and in the bay, on the north side, are several shoals from the main. There is also a little island by the point called Terra Gorda, and more southwards another called Monzora. Arguin was probably the island, which was known to the ancients under the name of "Cerne." It became the chief station of the Carthaginians, in the voyage of Hanno, along that coast; and M. De. Bougainville contends, that the cisterns found there are monuments of the Carthaginian power and ingenuity. Although Arguin is scarcely two miles in length, it has been for nearly a century, an object of contest to the Portuguese, Dutch, English, and French: but at length the French, in 1725, demolished the fort, and it has not been since rebuilt by any European power.

ARGULUS, in *Entomology*, one of the genera or divisions of Müllerer, in his arrangement of Moxoculi. Gmelin adopts it as a subdivision of the genus, with this definition: eyes placed beneath; antennæ two; legs from four to eight. This subdivision includes the three following species, *Charon*, *Delybinus*, and *Armiger*; and it is remarkable that the first kind has four legs, the second eight, and the third six.

ARGUMENT, in *Rhetoric*, is some reason or series of reasoning, by which we establish the proof, or shew the probability of some given proposition. Logicians, somewhat more scientifically, define *argument*, a *medium*, from whose connexion with two extremes, the connexion of the two extremes themselves is inferred. To illustrate this definition by an example; let it be inquired, "whether virtue is to be loved?" The agreement between virtue and love might be found by comparing each of them separately with happiness, as a common measure to both. For since the idea of happiness agrees to that of love, and the idea of virtue to that of happiness, it follows that the ideas of virtue and love agree to one another; and therefore it may be affirmed, "that virtue is to be loved." But, on the contrary, because the idea of misery disagrees with that of love, but the idea of vice agrees to that of misery, the two ideas of vice and love must consequently disagree with one another: and therefore it would be false to assert, "that vice is to be loved." The third thing logicians call the "medium" or "middle term," because it does as it were connect two extremes, that is, both parts of a proposition. But rhetoricians call it an "argument," because it is so applied to what was before proposed as to become the instrument of procuring our assent to it. Ward's *Oratory*, vol. i. p. 43. See TOPICS.

Arguments are termed *grammatical*, *logical*, *physical*, *metaphysical*, *moral*, *mechanical*, *theological*, &c. according to the art, science, or subject, from whence the middle term is borrowed. Thus, if we prove that no man should steal from his neighbour because the scripture forbids it, this is a "theological argument;" if we prove it from the law of the land, it is "political;" but if we prove it from the principles of reason and equity, the argument is "moral."

Arguments are either *certain* and *evident*, or *doubtful* and merely *probable*. "Probable arguments," are those whose conclusions are proved from some probable medium. "Evident and certain arguments," are those which prove their conclusions by clear media and undoubted principles: these are called *demonstrations*. In reasoning, Mr. Locke observes, that men ordinarily use four sorts of arguments. The first is to allege the opinion of men, whose parts and learning, eminence, power, or some other cause, have gained a name, and settled their reputation in the common esteem with some kind of authority: this may be called "argumentum ad verecundiam." Secondly, another way is to require the adversaries to admit what is alleged, as a proof; or to assign a better: this he calls "argumentum ad ignorantiam." A third way, is to press a man with consequences, drawn from his own principles or concessions: this is known by the name of "argumentum ad hominem." Fourthly, the using of proofs, drawn from any of the foundations of knowledge or probability: this he calls "argumentum ad judicium;" and observes, that it is the only one of all the four that brings true instruction with it, and advances us in our way to knowledge. For, 1. it argues not another man's opinion to be right, because I, out of respect, or any other consideration but that of conviction, will not contradict him. 2. It proves not another man to be in the right way, nor that I ought to take the same with him, because I know not a better. 3. Nor does it follow, that another man is in the right way, because he has shewn me that I am in the wrong: this may dispose me perhaps for the reception of truth, but helps me not to it. That must come from proofs and arguments, and light arising from the nature of things themselves; not from any shamefacedness, ignorance, or error. See REASON and REASONING.

Beside these, there are other arguments enumerated by different writers, as the "argumentum ab amore," which is used to engage

engage the reason by the affections; the "argumentum ad ignaviam," called by the Greeks *αργος λογος*, which always concludes in favour of inaction; the "argumentum ab invidia," which is made use of to render an adversary's opinion odious; M. le Clerc has a dissertation on this argument as applied to theology: and also "the argumentum a tuto," drawn from the consideration of its being safer to choose one side of the question than the other, when the evidence is equal on both sides. This has been much used against atheists and infidels; it was first started by Arnobius, and adopted by several advocates for Christianity, as Paschal, Tillotson, Galtrel, &c. Lord Shaftesbury and others have endeavoured to explode it: Clarke and Leibnitz only allow it a moral force. Motheim has a dissertation on this argument, viz. "De Vi argumenti quod a tuto dicitur in Theologia." Wolfem. 1723. 48.

Logicians divide their arguments, with regard to their form, into syllogisms, enthymemes, inductions, &c. An "argument in form," is a syllogism framed according to the strict rules of logic.—According to Aristotle, the "enthymeme" is the argument of rhetoric, as the syllogism is that of logic.—Rhetoric is defined by some, the art of finding arguments adapted to persuade, or gain belief.

Rhetoricians divide arguments, with respect to the places they are drawn from, into *intrinsic* or *artificial*; and *extrinsic* or *inartificial*, or *remote*.

ARGUMENTS, *artificial*, or *intrinsic*, by the Greeks called *επιχειρημα*, by Cicero *instita*, are the proper invention of him who speaks: or they are those which are taken from the subject treated of; of which there are several kinds, viz. genus and species, form, cause, and effect, &c. See each in its place, GENUS, &c. To these some add two other places of argument, viz. the manners and the passions.

ARGUMENTS, *inartificial*, or *extrinsic*, *απειρημα*, by Cicero called *assumpta*, are those which are borrowed from abroad, and are only applied by the orator to the point in hand; such are laws, common report, books, oaths, torture, and witnesses. The places, or general heads of arguments, with regard to their end, may be divided into, 1. Those intended to persuade or dissuade, which are chiefly drawn from the considerations of profit, honour, and equity: 2. Those intended to praise or dispraise: and, 3. Those intended to accuse and defend. See TOPICS.

ARGUMENT, *dialectical*. See DIALECTICAL.

ARGUMENT is also used for a syllabus, or abridgment of the subject of a book, history, comedy, or the like. We have almost lost the original use of prologues, which was to give the argument of the play.

ARGUMENT, in *Astronomy*, is, in general, a quantity upon which depends an equation, an inequality, or some circumstance relating to the motion of a planet; or it is an arch whereby we seek another unknown arch, bearing some proportion to the first. Hence,

ARGUMENT of *inclination*, or of *latitude*, is an arch of a planet's orbit intercepted between the ascending node, and the place of the planet from the sun, numbered according to the succession of the signs; or, more generally, the argument of latitude is the distance of a planet from its node, because on this depends the latitude. Let φC (Plate I. *Astronomy*, fig. 13.) be the ecliptic, AB the orbit of a planet, N the ascending node, φC the order of the signs, P the place of the planet, and Pm perpendicular to φC ; then Nm reckoned from N, according to the order of the signs, is called the argument of latitude, because the latitude Pm depends upon Nm. In order to obtain it, we must always subtract the place of the node from the place of the planet reduced to the ecliptic, adding twelve signs to the

latter, if it be the least. Take $NA = N\varphi$, and the longitude of a planet upon its orbit is computed from the point A; hence the longitude on the orbit is $AP = AN + NP$, and the longitude on the ecliptic is $\varphi m = \varphi N + Nm = AN + Nm$; the difference of these longitudes is the difference between NP and Nm, which difference applied to the longitude of the planet upon the ecliptic, adding or subtracting it, as Nm is less or greater than NP, that is, as Nm is between 0° and 90° or 180° and 270° , or between 90° and 180° or 270° and 360° , gives the longitude upon its orbit. This difference is called the *reduction*. To find it, put $c =$ the cosine of the angle PNm, $t =$ the tangent of Nm the argument of latitude; then the cotang. $PN = \frac{\text{rad.} \times c}{t}$;

hence $10 + \log. c. - \log. t. = \log. \text{cotang. PN}$; and the difference between PN and Nm is the reduction required. E. G. Let the inclination of the orbit of Mercury be 7° , and the argument of latitude $30^\circ 17' 48''$: then,

$$\begin{array}{r} 7^\circ 0' 0'' \text{ - - - - - Cos. } + 10 = 19.9967507 \\ 30^\circ 17' 48'' \text{ - - - - - tang. } = 9.7066171 \\ \hline 30^\circ 29' 1'' \text{ - - - - - cotang. } = 10.2301336 \\ \hline 0 \ 11 \ 13 \ \text{the Reduction.} \end{array}$$

In the tables of the planets' motions, a table of reductions is given, which applied to NP gives Nm, or applied to the longitude of a planet on its orbit, gives the longitude upon the ecliptic; but if applied with a contrary sign to the longitude on the ecliptic, it gives the longitude on its orbit. In like manner a reduction may be applied to the sun's longitude, for the purpose of finding its right ascension, or the contrary. Vince's Astron. vol. i. p. 149.

ARGUMENT, *menstrual*, of *latitude*, is the distance of the moon's true place from the sun's true place.

By this we find the quantity of the real obscuration in eclipses, or how many digits are darkened in any place. See ECLIPSE.

ARGUMENT, *Annual*, or annual argument of the moon's apogee, is the distance of the sun's place from the place of the moon's apogee, or the arch of the ecliptic comprehended between these two places.

ARGUMENT of the *parallax*, denotes the effect which it produces in an observation, and which serves for determining the true quantity of the horizontal parallax.

ARGUMENT of the *equation of the center*, or of the equation of the orbit, is the anomaly or distance from the apogee or aphelion, because this equation is calculated in an elliptic orbit for every degree of anomaly, and varies according to the variation of the anomaly. Thus also, the *argument* of that part of the equation of time, which arises from the unequal angular motion of the earth in its orbit about the sun, is the sun's anomaly, because that part of the equation depends entirely upon the anomaly; and the latter being given, the former is found from it. In the computation of the place of the moon by the tables, there are fourteen arguments, corresponding to the fourteen inequalities in its motion, and the fourteen equations in the calculation: e. g. the first is $11' 16''$, multiplied by the mean anomaly of the sun; because this equation, which is $11' 16''$ when the sun is 90° from his apogee, decreases as the sine of the distance from the apogee, or the sun's anomaly. Thus, the anomaly is the argument of the first equation, and so of the rest.

ARGUMENTATION, the act of inventing or framing arguments, of making inductions, and drawing conclusions. See INDUCTION, &c.

Argumentation, according to Cicero, is the delivering or unfolding of an argument. The matter of argumentation is propositions; the form, their due disposition, with regard

to one another, so that a conclusion may be drawn from them. See ENTHYMEME, PROPOSITION, RATIOCIATION, SORITES, SYLLOGISM, &c.

ARGUN, or ARGOON, in *Geography*, a river of Asia, which rises in a lake of Chinese Tartary, called "Coulou Nor," or "Dalai," situated in N. lat. 49°. E. long. 110° 14', and joins the Amur or Amoor, in N. lat. 53°. E. long. 121° 14'. This river separates Russia from Chinese Tartary, according to the treaty of Nerchinsk in 1728. It has a pearl fishery, and near its banks are mines of lead and silver.

ARGUN, or *Argjan*, is also a mountain of Independent Tartary, forming the chain with the Kara Tau, though broken by the interfection of a river.

ARGUNA, a town on the coast of Africa, on the river Benin or Formosa, thirteen leagues from Benin.

ARGUNSKOI, in *Geography*, a town of Siberia, seated on the Argun, near the confines of China, one hundred and thirty miles east of Nerchinsk. N. lat. 50° 50'. E. long. 120° 14'. This is the farthest fort of the Russians towards the east, on the Mongolian frontiers, and was first built on the east bank of the Argun, in 1682, for the convenience of levying the tribute payable by the Tungusians, who inhabit these parts; and it was rebuilt in 1659 on the west side of that river. A considerable trade is carried on from this garrisoned town with the Monguls. The country round it is very fertile; and the air, though cold, very healthy. The territory of Argunskoi is often visited with slight shocks of an earthquake, in the spring or beginning of winter. The Chinese erect new pillars every year, on the east bank of the Argun, to mark the limits of their frontiers.

ARGURA or ARGISSA, in *Ancient Geography*, a town of Greece, in Thessaly, situate upon the Peneus, forty stadia from Atrax. Strabo.

ARGUS CAMPUS, a plain in the territory of Mantinea. Pausanias.

ARGUS, in *Fabulous History*, is said to have had an hundred eyes, some of which were open, whilst the others were closed. He was called Πανοπτις, *panoptes*, because he saw every thing. On this account Juno intrusted him with the custody of Io; but Jupiter, having compassion on Io in close confinement, commissioned Mercury to charm Argus to sleep with his flute, and to seal his eyes with his caduceus, and then to cut off his head. Juno, in recompence of his fidelity, took all the eyes of Argus, and fixed them to the wing and tail of the peacock; and, as the fable adds, transformed Argus into this bird. Macrobius (Saturn. i. 19.) gives this fable an astronomical origin: he says, that Argus represents the celestial sphere, on which are dispersed a thousand stars; and that Mercury is the sun, that makes them disappear by its brightness. But when it was known that the Mercury of the Greeks was the Anubis of the Egyptians, and that Anubis represented the horizon, the application of the fable was no less obvious, as Mercury caused Argus to sleep, and closed his hundred eyes, as the horizon every day veiled the stars of the celestial sphere.

ARGUS, in *Conchology*, a species of MUREX, found in India. The shell is gibbous, with transverse tuberculated ribs; brown, obscurely fasciated, and white within; aperture ovate. Gmelin, &c. *Obs.* There are three or more supposed varieties of this species, one of which is believed to be the shell figured in Martin's Universal Conchology under the name of *Flag-Buccinum*; and which is found in the Friendly and Society islands.

ARGUS, a species of CYPRAEA, that inhabits the Indian and Atlantic ocean. This shell is slightly turbinated, somewhat cylindrical, and sprinkled with ocellated marks; four

brown spots beneath. Gmelin. It is called *argus* by Rumphius, *argus magnus* by Argenville, and *argus covary* by English collectors. The length is about four inches; it is rather narrow, and of a grey or yellowish colour above, with three brown bands; the ocellar marks are sometimes connected; and it is also remarkable that the spots on one side, beneath, are larger than the other; the lips are straw-colour, and the teeth brown.

ARGUS *minor*, the name given by Argenville to the shell called by Linnæus and Gmelin *Cypræa cribraria*; which see.

ARGUS, in *Entomology*, a species of CURCULIO, described by Sparman in the Stockholm Transactions for 1785, as a native of the Cape of Good Hope. It is downy; head and anterior margin of the thorax dotted with grey and white; wing-cases with elevated striae, and both spotted and dotted with white and grey. Gmelin.

ARGUS, a species of CIMEX (*Scutellatus*, Gmel.) It is black, dotted with numerous ocellar fulvous spots. Fabr. and Gmel. This creature inhabits Surinam, and is about the same size as *Cimex Fabricii*; the under-side is yellow, varied with black.

ARGUS, a species of PAPILIO, (*Pleb. rural.* Gmel.) The wings are destitute of tails, and blue; beneath, a ferruginous border on the posterior pair, with blue silvery ocellated spots. Gmelin, &c. *Obs.* This character cannot be considered unexceptionable, since it agrees only with the male insect; the female is dark brown, and bluish only at the base of the upper surface. The larva from which it is produced is green, with a brown line along the back; and the head and fore-legs black.

ARGUS, a most singular species of PHALÆNA, (*Bombyx Att.* Gmelin,) in which the posterior wings are furnished each with a tail, that is more than thrice the length of the rest of the insect. The specific character is as follows: wings tailed, pale ferruginous, with numerous ocellar transparent spots; and tails very long. This is *phalæna brachyura* of Cramer; and found in Sierra Leona. A somewhat analogous species, being furnished with similar tails, has been recently discovered in the interior of Africa.

ARGUS, in *Ichthyology*, a species of PLEURONECTES, that inhabits the seas about the Antilles. The body is variegated and the tail rounded. Bloch and Gmelin. To this concise character of the species may be added, that it is white with yellow spots, which are dotted with brown, and encircled each with a blue ring; the other parts are also dotted with brown, and covered with soft scales; the head is broad; the eyes are unequal, and rather at a distance; the pupil blue; the iris white and brown; the lateral line bending in the middle, above the pectoral fin; the fins spotted with blue; the membrane yellowish; rays brown; dorsal fin extending from the nostrils to the tail. It has seventy-nine rays in the dorsal fin, pectoral ten, ventral eight, anal sixty-nine, and in the tail seventeen.

ARGUS, a species of CHAETODON, called by Renard *Ican Taci*, and by Valent *Cacatocha Babintang*. It has eleven spines in the dorsal fin; the body is entirely dotted with black; and the tail is entire. Gmelin, &c. The body of this fish is nearly square; and the sides are spotted and varied with brown; above it is violet, beneath white; the iris of the eye is golden; jaws equal; gill-covers large; the membrane loose; the lateral line is arcuated; vent nearly in the middle of the body; fins short and yellow; and four spines before the anal fin. This species is found in fresh waters and swamps, in India; lives on insects; and the flesh is sapid.

ARGUS, in *Ornithology*, a species of PHASIANUS, that inhabits

inhabits China and Chinese Tartary; and may be well esteemed one of the most elegant of the feathered race. It was first introduced to the notice of the English naturalist through the medium of the Philosophical Transactions, under the name of *Argus* or *Iucn*: it next appeared in the London Magazine for 1766, and Gentleman's Magazine for 1768; and, at length was very completely described by Dr. Latham in his General Synopsis of Birds, published nearly twenty years ago. Still it is rarely met with in cabinets of Natural History; though on the credit of some respectable and faithful writers, it is far from being an uncommon bird in its native country. There is at present a magnificent specimen of it in the Leverian Museum.

From Dr. Latham we learn, that this bird is common in the woods of Sumatra, as well as those of China; and that it is there called *Coo-ow*. Hitherto every attempt to keep it alive in a state of captivity for a considerable length of time, has proved ineffectual; it has been known to live for about a month after being taken from the woods, but never longer. One circumstance is very remarkable, it has a strong antipathy to the light, and remains perfectly inactive in the open day; and, on the contrary, when put into a dark place seems easy, and sometimes makes its note or call which corresponds with its name *Coo-ow*; it is rather plaintive, and not harsh like that of a peacock.

The size is that of the male turkey; the bill, like that of the common pheasant, and of a pale yellow colour; the fore part of the head and beginning of the throat are covered with a granulated skin, of a fine scarlet colour; the irides are orange; round the eye the skin is dusky, and it has a kind of whisker on each side of the lower jaw; the top and hind part of the head and neck, is changeable blue, with a forked crest on the former; the lower part of the neck, back, and wing coverts, dusky, marked irregularly and transversely with reddish brown: the nine outer quills are yellowish-brown, marked with small dusky spots as big as tares on the outer, and smaller spots of white on the inner webs. The eleven remaining quills, dark brown, marked with round and oblong spots on both webs; and on the outer, near the shafts, a row of large eyes, from twelve to fifteen in number, the largest an inch in diameter, somewhat resembling those on a peacock's train; the throat, breast, rump, and upper tail-coverts dull orange, marked with round dusky spots; the tail consists of fourteen feathers, the two middle ones are three feet in length, the next eighteen inches, and thence they gradually shorten to the outer ones which are twelve inches only in length; the colour dusky brown, dotted with white; and the two middle ones have round white spots encircled with black on the outer, and brown irregular ones surrounded with dusky on the inner webs; the lower belly and vent dusky, irregularly mixed with brown; the legs, like those of a turkey, and of a greenish ash colour. Vide Lath. Gen. Syn.

We must not omit observing that the description of this species by Dr. Latham, was partly taken from a drawing sent over with a specimen of the bird; both the head and legs were wanting in this specimen, and were supplied from the painted figure; in this figure the legs have no spurs; but in a drawing, done by Mr. Edwards, they are furnished with a spur like that of a cock.

Its specific character, according to Gmelin, &c. is thus defined; pale yellow, dotted (or spotted) with black; face red; hind part of the head crested, and blue. Buffon calls it *L'Argus, ou le Iucn*.

ARGUS, in *Zoology*, a species of *COLUBER* introduced by Linnaeus, and retained by Gmelin, in the *Systēma Naturæ*, on the authority of Seba; but as the specific characters assigned to the serpents by these authors are uniformly taken

from the number of scuta, and squamæ, which, in this instance, they were unable to ascertain, it unavoidably stands without any character by which the species may be distinguished. A general description is indeed added, yet, if either writers are to be depended on, it is not very remarkable for its accuracy; above, smooth brown, and somewhat reticulated; scales palest in the disk; beneath, tessellated: the back of the head likewise is bilobed and gibbous. Dr. Shaw gives a specific character to this creature, which is taken from the colours, form, and situation of the spots in these words: chestnut-brown snake, yellow beneath, and banded above by transverse rows of ocellated red spots. Gen. Zool.

This is a large species, measuring according to Seba above five feet in length, and is of a moderate thickness. The head is large, flattish, and covered with small scales in front; teeth large and strong; and the ocellated red spots on the body are each surrounded by a white iris, which is encircled with red. The tail is moderately slender, tapering to a point, and apparently about a foot in length. It is a native of Arabia, and is supposed from the appearance of the head to be a poisonous species.

ARGUTIÆ, in *Rhetoric*, witty and acute sayings, which commonly signify something farther than what their mere words at first sight seem to import. Writers on rhetoric speak of divers species of *argutie*, viz.

ARGUTIÆ ab alieno, when something is said, which seems repugnant either to the nature and property of a thing, or to common custom, the laws, &c. and yet in reality is consistent therewith; or when something is given as a reason of another, which yet is not the reason of it. For instance, "si Caius nihil didicisset, errasset minus:" again, "Aureum hoc sæculum est, quia plurimus jam auro honos venit."

ARGUTIÆ ab allusione, those wherein allusion is made to some history, fable, sentence, proverb, or the like; e. g. "multi umbram captant & carnem amittunt."

ARGUTIÆ a comparatis, when two things are compared together, which yet at first sight appear very different from each other, but so as to make a pretty kind of *simile*, or *aniffimile*; e. g. "Par est pauper nil cupiens principi omnia habenti."

ARGUTIÆ a repugnantibus, when two things meet in a subject, which yet regularly cannot be therein; or when two things are opposed to each other, yet the epithet of the one is attributed to the other; e. g. "Dum tacent clamant."

ARGUZIA, in *Botany*. See *MESSERSCHMIDIA*.
ARGY, in *Geography*, a town of France, in the department of the Indre, and chief place of a canton, in the district of Chatillon sur Indre, three and a half leagues east of Chatillon.

ARGYLE, a township of America, in Washington County and State of New York, on the east bank of Hudson river, containing 2,341 inhabitants, inclusive of fourteen slaves. In the state census of 1796, there appeared to be 404 electors.—*Argyle* is also a township of Shelburne County in Nova Scotia, settled by Acadians and Scots.

ARGYLESHIRE, or *ARGATHIA*, in Scotland, which together with Perthshire and the Western Islands, is said to have constituted the ancient kingdom of the Scots, while the rest of Caledonia was subjected to the Picts and Romans, comprehends Kintyre, Knapdale, Argyle Proper, Cowal, and Lorne. It is bounded on the south by the Irish sea and the Frith of Clyde; on the east, by Perthshire; on the north-east by Lochaber; and on the north-west by several islands. The extent of it from south to north, between the Mull of Kintyre or Cantire, and the point of Ardnamurchan, where it joins the shire of Inverness, is about 114 miles; and the breadth in some places,

including the isles, about 70. This country, like all other parts of the Highlands, affords a very wild and horrid prospect of hills, rocks, and huge mountains, piled upon each other in a stupendous and dreadful disorder; bare, bleak, and barren to the view; or at best covered with shagged heath, which appears black and dismal to the eye, except in the summer, when it is variegated with an agreeable bloom of a purple colour. The coast of Argyle is rocky; yet indented with bays and inlets, that afford good harbours for shipping. The country is well watered by rivers, brooks, and lakes, abounding with fish; the vales and flat parts of it are cultivated for corn; the mountains feed an innumerable quantity of black cattle, which run wild among the hills in winter as well as summer; the heath and woods, of which there is a considerable number, afford shelter to deer, roebucks and all sorts of game in great plenty: the circumambient sea, with its locks, bays, and harbours, pours forth myriads of fish; but the innate wealth of the country is dug from the bowels of the mountains in iron, lead, and other metals and minerals.

Argyle is the seat of a provincial synod, consisting of five presbyteries and 49 parishes; and gives the titles of *duke* and *earl* to the noble family of Campbell, the most powerful of all the Scottish nobility. The Duke of Argyle is, by hereditary right, great master of the king's household in Scotland; admiral of the Western isles; general of Denoon castle; keeper of Dunstaffnage and Carrick; and, before the jurisdictions were abolished, enjoyed other hereditary offices, which rendered him too powerful as the subject of a limited monarchy. He still possesses many royalties; his vassals, even of the name of *Campbell*, are so numerous, and his influence extends so far, that he could, on occasion, bring 3000 or 4000 fighting men into the field. Argyleshire is in general peopled by this clan; and affords a great number of castles and seats belonging to gentlemen who hold of the duke, and boast themselves descended from his family.

Argyle Proper is bounded by Knapdale and Cowal on the south; Lochaber on the north; Lennox and the Grampian hills on the east; and Lorne on the west. It lies between Lochfyn and Lochlow; which last is a fresh water lake about a mile broad, but extending 2½ in length, including 12 islands, on two of which are the castles of Erconel and Glenurquhart. This lake, which gives the title of viscount to the duke of Argyle, issues in the river Awe, which, after a course of six or seven miles, enters Loch Ertiff, and this falls into the west sea, opposite to the isle of Mull: all these abound with excellent trout and salmon. Argyleshire sends one member to parliament. Its chief towns are Inverary and Campbelltown.

When the projected canal shall be completed, and some villages and harbours erected, the populous county of Argyle (Mr. Knox affirms) will become one of the most valuable provinces of the British empire. It abounds in black cattle, sheep, and fish, though the latter are less numerous than those on the more northern shores. Washed on both sides by the sea, deeply indented by navigable lakes and bays; having an easy communication with the fishing grounds on the North Highlands; with Glasgow, and the trading towns on the Clyde; with Ireland, Wales, Whitehaven, Liverpool, Bristol, and other marts on the west coast of England, we may easily conceive, that the period is at no great distance, when Argyleshire will become a great commercial county. To corroborate this opinion, he observes, than after a vessel gets under sail from this coast, she enters at once into the Atlantic, where she meets with no interruption till she makes the coast of America or the west Indies. The line, therefore, which nature points out for

the inhabitants, is that of salt-making, fishing, ship-building, freights, or the carrying trade; soap and glass-making, by means of the kelp upon their shores, and sand found upon Gùisild, which is adapted for the latter.

ARGYNELLUS, in *Entomology*, a species of *CURCULIO*, that inhabits the Cop of Good Hope. It is silvery green; eyes black; black line above, with a black longitudinal red line. Sparrn. Nov. Act. Stockh. 1785. Gmelin.

ARGYNNIS, a species of *SPHINX* (*Zygenis*, Fabricius). The wings are greenish-black, with gold spots; posterior pair brown, and gold at the base. This is a beautiful insect, and inhabits Brasil. Græche. The abdomen is black, and red at the tail; a few green spots on the anterior wings, and violet spots on the posterior ones.

ARGYNNIS, in *Mythology*, an appellation of *Venus*. Agamemnon built a temple to this goddess, under this appellation, in honour of a young favourite named Argynnis, or Argeus, who was drowned in the river Cephissus in Bœotia. Propertius mentions it, lib. iii. eleg. vi. p. 699.

“Sunt Agamemnonias tellantia littora curas,

Quæ notat Argyni pœna natantis aqua.”

ARGYPANA, in *Ancient Geography*, a town of Italy mentioned by Polybius, who says it was ravaged by Hannibal.

ARGYPHEA, a town of the Peloponnesus, named in the hymn of Apollo ascribed to Homer.

ARGYRA, a country of India, on the other side of the Ganges, mentioned by Mela, Piny, and Pompey.—Also, a town of India, and the metropolis of the island of Iabadios, on the western side of which it was placed by Ptolemy. This island, called by Steph. Byz. Ibadis, seems to have been the same with that named Taprobana. It is said to have derived its name *Argyra* from *αργυρος*, *silver*, on account of its fertility, and the gold which it produced.—Argyra was also a town of Greece in Achaia. Pausanias informs us, that this, together with several other towns, was depopulated by Augustus, in order to supply Patras with inhabitants. A fountain of the same name was adjacent to its ruins.

ARGYRASPIDES, or ARGYROASPIDES, in *Antiquity*, persons armed with silver bucklers, or bucklers silvered.

The argyraspides, according to Quintus Curtius, made the second corps of Alexander's army; the first was the phalanx.

According to Justin's account, lib. xii. cap. 7. Alexander, having penetrated into India, and extended his empire as far as the ocean, for a monument of his glory, ordered the armour of his soldiers, and the housings of his horses to be adorned with silver. And hence he commanded them to be called argyraspides, from the Greek *αργυρος*, *silver*, and *ασπις*, *buckler*. By this author it should seem, that Alexander's whole army were called argyraspides.—After that prince's death, the argyraspides despised all other chiefs of the army, disdainful to obey any other, having borne arms under Alexander.

ARGYREIA, in *Botany*, a genus of plants so named by L. urcio, from the silvery appearance of the leaves, seems nearly related to *Argophyllum*, which approximates closely to ivy.

ARGYRELLA, in *Entomology*, a species of *PHALÆNA* (*Tinea*, Gmel.). The wings are silvery, glossed with brown and fringed. This is a large insect, and inhabits Aultria.

ARGYREUS, a species of *CURCULIO* found in India. The body is green, with spots of silver and gold. Fabricius and Gmelin. The latter author arranges it with those that have the thighs unarmed; but adds in his description

that

that they are somewhat armed, those of the first pair of legs having an obsolete spine.

ARGYRINI, in *Ancient Geography*, a people placed by Steph. Byz. and Lycophron among the Epirote, or in Epirus; but J. Vossius says they were the inhabitants of Argyrhium.

ARGYRIPA, a town of Apulia, in Italy; built by Diomedes. See ARPI.

ARGYRITES, in *Antiquity*, a denomination given to Grecian games, which formed part of the worship of some divinity. They were so called, because the victor obtained, as a recompence, either some coin or vases of silver, or bucklers of brass, &c. which were of a different kind in different places.

ARGYRITIS, in *Natural History*, a name given by the ancients to a substance resembling silver.

In this sense, argyritis was used to signify such litharge as was of a white colour, by way of distinguishing it from that which was yellow, which they dignified with the name *chrystitis*, as we do at present with that of litharge of gold. The argyritis of late writers seems to have been the same with the *lapis magnetis* of the ancients, mentioned by Theophrastus, and distinguished from the magnet.

ARGYROCOME, in *Botany*. See BACCHARIS, GNAPHALIUM, and XERANTHEMUM.

ARGYRODAMAS, in *Natural History*, a sort of silver-coloured tale, which bears the fire, and neither burns, melts, nor changes its hue. Plott's Hist. Staff.

Hence its denomination among the ancients of *argyrodamas*, quasi *argentum indomitum*.

ARGYRODENDROS, in *Botany*. See PROTEA.

ARGYROLIBANUS, in the *Materia Medica* of the ancient Greeks, a word used to express the white kind of oilbanum.

ARGYROPHTHALMUS, in *Ornithology*, a species of CORVUS, whose general colour is black; breast blue; eyes silvery; tail white at the tip; and bill and legs black. Gmelin.

The first account that we have of this bird is in Brown's illustration of *Natural History*; he figures it under the name of the *Surinam Crow* in the tenth plate of that work, from a specimen then in the collection of M. Tuntal, esq. The same was afterwards described by Dr. Latham, as being of the size of a common crow. Bill dusky; head deep green; hind part rich blue; beneath that pale green; under each ear, and on the hind part of the neck, a spot of the same; neck, breast, belly, back, and wing-coverts deep changeable green; prime quills dusky; ends rich blue; tail dusky; legs flesh-coloured. This bird he calls the *Surinam Crow*; but having lost its tail, one very striking characteristic of the species was unavoidably omitted, viz. the white spot at its extremity. In the year 1784, Jacquin published his "Bevtrage zur Geschichte der Vogel;" at Vienna, in which this species is more satisfactorily described; and his description was afterwards inserted in the Supplement to Dr. Latham's *Ornithology*, and the Gmelinian *Systema Naturæ*. From hence it appears to be about the size of a jay; the prevailing colour black; irides silvery white, with a spot of blue above, and another beneath; the breast and outer part of the wing deep blue; tip of the tail white; bill and legs black. It inhabits Carthagenia in New Spain, South America; and is called *Oiseau de Plata*; has a monotonous voice; frequents woods; and being easily tamed, is often kept in houses in that country.

ARGYROPOEIA, in *Alchemy*, the art of making silver out of other more imperfect metals.

The word is formed of *αργυρος*, silver, and *ποιω*, I make.

ARGYROPS, in *Ichthyology*, a species of SPARUS, found in Jamaica and Carolina; and called by Willughby, *Zanthurus indicus*. The tail is lunated; back grooved; iris of the eye silvery. Brown, in his Nat. Hist. of Jamaica, describes it as *Sparus iride argentea, dentibus anterioribus conicis*. The three first rays of the dorsal fin are very long and setaceous; this fin consists of twelve rays; the second of twenty-six; pectoral fin of seventeen; ventral fin of six; anal fin of fifteen; and tail of twenty rays. Gmelin, &c.

ARGYROPULUS, JOHN, in *Biography*, a Peripatetic philosopher, was born at Constantinople, in the beginning of the fifteenth century, and was one of the first Greeks, who fled from that city, and sought an asylum in Italy, where he came to reside several years before the taking of Constantinople by the Turks in 1453. In 1456, he was taken under the patronage of Cosmo di Medici, who committed to him the education of his son and nephew in the Greek language and philosophy; and who afterwards appointed him professor of the Greek language at Florence. At his request, he undertook to translate into Latin the physics and ethics of Aristotle. But, being obliged to leave Florence on account of the plague, he went to Rome, where cardinal Befarion conferred upon him the professorship of the Greek language. Here he read lectures upon Aristotle, and he had the honour of being the first modern Greek who taught philosophy in that city. His salary, though liberal, was not sufficient to defray the expences of his luxurious table; and at the age of seventy, in the year 1486, he fell a sacrifice to the unrestrained indulgence of his appetite, as, by eating melons to excess, he brought on a fever which was fatal to him. His learning was respectable; but his manners were not amiable; and he manifested a degree of literary jealousy which disgusted his friends, and prevented him from freely communicating his learning to the Italians. He affected to despise Cicero, whom he maintained to have been ignorant of philosophy and Greek learning. His translations, which are found in the more ancient Latin editions of Aristotle, and in the Greek and Latin editions of Basil, are valuable. He also wrote a "Commentary on Aristotle's Ethics;" Solutions of questions proposed to him by certain philosophers and physicians in the island of Cyprus; Epistles and several small pieces extant in MS.; Brucker's Hist. Philos. by Enfield, vol. ii. p. 405. Fabr. Bibl. Græc. l. v. c. 43. § 21. tom. x. p. 4-5.

ARGYROSTOMA, in *Entomology*, a species of MUSCA, found in the environs of Vienna. It is black and hairy; silvery in front, with bands of the same. Schranck, Gmelin, &c.—This insect is shining above; eyes reddish; and the wings transparent.

ARGYROSTOMUS, in *Conchology*, a species of TURBO, of a whitish colour, radiated with brown; the wreaths of the spire are six, and are rather rounded; the first spire considerably larger than the others; the aperture is silvery; and the tip sometimes red. It is a native of India; is called *Os argenteum* by Argenville, and is thus specifically described by Gmelin. Shell somewhat ovate; rough, with more elevated dorsal transversely striated lines.

ARGYROSTOMUS, a species of TROCHUS, that inhabits the southern ocean. This shell is ovate, with undulated ribs, and striated transversely; aperture somewhat compressed; wreaths of the spire swelled; the first slightly carinated at the base. Gmelin. The breadth is about two inches, and the height nearly the same; its colour is black; the first wreath terminates in a row of tubercles; and the pillar lip is very green.

ARGYRRHIUM, or ARGYRIUM, in *Ancient Geography*,

Argyrium, now *S. Filippo d'Argiro*, a town of Sicily, which was the birth-place of Diodorus Siculus. This city, built upon the point of a rock of a conical form, commanded its whole territory; and according to history, disputed the palm with that of Syracuse, as to extent and riches. Its population was encouraged and increased by Timoleon, after he had expelled the tyrants of Sicily. Enriched by commerce, the inhabitants who came to reside here, embellished it with superb edifices: they built a theatre almost as large and splendid as that of Syracuse; and erected magnificent mausolea in the form of pyramids. This city is now so much reduced, that scarcely a trace remains of its ancient grandeur. The site of the temple of Hercules, and of the lake dug there by Iolas, his son-in-law, is now called the "Lago d'Ercole." Nevertheless the soil is fertile, and admits of cultivation. The saffron of this territory is deemed excellent, and it yields a kind of potter's earth, which by its unctuous and detergent quality serves the inhabitants instead of soap. *Argyrium* was founded by the Sicilians, who came into Sicily from Spain; being compelled to leave the rich plains of Leontium by the attacks of the Lestrigons and Cyclopes, they retired to this place which nature seems to have previously fortified for their security. Historians relate, that the Argyrians cut off their hair in order to sacrifice it to Hercules, in token of their gratitude for the water with which he furnished them by means of the above mentioned lake, as *Argyrium* was before destitute of water. The modern inhabitants retain the practice, and cut their hair almost entirely off, preserving only two locks on their temples. De Non's Travels in Sicily, &c. p. 842.

ARGYRUNTUM, or **ARGYRUTUM**, in *Ancient Geography*, a maritime town of Illyria, according to Pliny and Ptolemy: now Novegrad in Dalmatia.

ARHAW, in *Geography*, a river of Africa, in the kingdom of Algiers and province of Tlemfan, which flows into the Sheliff, near a noted sanctuary, called Seedy Abid, at a small distance from mount Atlas.

ARHON, a large mountain of Africa, in the kingdom of Fez. It is a branch of mount Atlas, and extends for a considerable distance from east to west. Its inhabitants are partly Moors expelled from Spain, and partly some Arab families. The soil produces abundance of barley, which is the only grain of the country. They have also olives and dried raisins: and they rear great numbers of bees. They also manufacture soap, which is an article of commerce. Their habitations, which are rather huts than houses, are scattered over the country. The emperor of Morocco draws from them a considerable tribute: and it is said, that this simple district is able to furnish 10,000 soldiers.

ARHUS. See **AARHUS**.

ARI, a town of Italy, in the kingdom of Naples, and province of Abruzzo Citra, five miles south-east of Civita di Chieti.

ARIA, in *Ancient Geography*, the name of an island in the Euxine sea, opposite to Pharnacea, called also *Chalcidius*. Pliny.

ARIA, a mountain of Asia, part of a chain of mountains mentioned by Ammianus Marcellinus.

ARIA, the most considerable lake of Persia, is situated in the western part of the province of Segistan or Seistan, according to the map of major Rennel between $33^{\circ} 15'$ and $32^{\circ} 45'$ N. lat. and $59^{\circ} 15'$, and $61^{\circ} 20'$ E. long. In the French maps it is called the lake of Zeré, from a village of that name near its western extremity; and in the map of major Rennel, the sea of Durrah or Zurrah, from a village seated on a river at the distance of twenty miles from the

lake, which village is denominated Corra or Curra, whence is probably derived Zurrah. Pinkerton (Mod. Geog. vol. ii. p. 315.) suggests that this appellation might as well be supplanted by that of the sea of Segistan. According to Otter (Voyage en Turkie et en Perse, tom. i. 217.) cited by this geographer, the length of this lake is thirty leagues, or a day's journey, in breadth; and the water is fresh and full of fish. By his account it only receives the river of Ferah (Farree) or Parra, which runs from the north-east.

ARIA, and *Ariana*, are names that have been applied by ancient geographers very variously. Some have applied them to the same country, and others to distinct countries. Ptolemy mentions only Aria, without noticing Ariana, and the Ariani. Pliny (l. vi. c. 23.) mentions Ariana, but takes no notice of Aria; and yet he distinguishes (l. vi. c. 25.) between the Arii and Ariani. Parthia, he says, has the Arii to the east, and to the south the Ariani and Carmania. Hence it has been conjectured, that the Ariani were more widely extended than the Arii, and that under this general denomination were included the Gedrosii and the Drangæ, Arrian (l. iii. c. 25.) has Aria and the Arii, but is silent with regard to Ariana. Strabo has both names, and extends the limits of Ariana beyond those of Aria: observing in general, without settling their boundaries, that Ariana commences from India; and he cites Eratosthenes, who says that Ariana was bounded on the east by Indus, on the south by the Great Sea, on the north by Paropamisus and the mountains as far as the Caspian ports, and on the west by the boundaries which separate Parthia from Media, and Carmania from Parthacene and Persia; and, accordingly, Ariana is very extensive. Salmasius (Exerc. Plin. p. 553.) distinguishes his Ariana from Aria, but does not assign to it any precise limits. The limits of Aria; according to Ptolemy, are parts of Margiana and Bactria on the north, on the east the Paropamisadæ, and on the south Drangiana: and Strabo says, that the Arii are adjacent to the Paropamisadæ on the west. Ariana, in major Rennel's map, is a part of the province of Persia, called Korasan or Koresan.

ARIA, or *Artacoana*, the chief city of the country called Aria, seated on a river, called by Arrian, Areios; by Pliny, Aries; by Ammianus, Arias; which had several sources in the desert of Margiana, and in the Saraphi mountains, and runs into the Aria Palus, or lake of Aria. In its course it passed by Alexandria, according to Pliny, who calls this city Alexandria Arion or Arionum. Aria or Artacoana is the present Herat, placed in Rennel's map at the confluence of two streams, which form the river that runs into the lake of Durrah.

ARIA, Ital. for *Air*, English (which see). Herr Sulzer, an elegant German writer on the subject of the fine arts, has described the construction, and what was thought the perfection of an opera *Air*, about the middle of the last century, during *da capo* times; and not only apologized for second parts to airs, and a return to the first, but pointed out their utility and beauty in doctrines now quite exploded, both in theory and practice. In the remarks of Mr. Framery on the encomiums of H. Sulzer (Encycl. Meth. p. 95.), he allows that his precepts are excellent, but that his definition appears imperfect. He then gives his own notions, which tally more with modern practice. After which he adds, "as to the form of opera *Airs* indicated by M. Sulzer, it is much varied since he wrote on the subject." The Italians at length, tired of their eternal monotony, melt down the second part of their *Airs* into the first; or, if distinct, when the expression of the words requires it, they do not think themselves obliged to return to it by a *da capo*. The *Airs* of comic operas are constantly

stantly confined to one part or strain, unless some new measure, or dissimilar idea in the words, absolutely requires a different expression. The movement then is changed, and finishes by an *Allegro*, without returning to the first part.

ARIA-Βορρῶν, in *Botany*. See MELIA.

ARIA Theophrasti. See CRATÆGUS.

ARIA-Veelia. See CLEOME.

ARIACA, in *Ancient Geography*, a maritime country of India, situate, according to the *Periplus* of the Erythræan sea, towards the gulf Canthi Colpus, and thought by M. d'Anville to be the southern part of the country called *Larice*.—*Ariaca* was also a town of Margiana. Ptolemy.

ARIACÆ, a people of Scythia, on the left bank of the Iaxartes, near the Caspian sea. Ptolemy.

ARIACES SABINORUM, or *Sadanarum*, a people of India, on this side the Ganges.

ARIACOS, or ARIACE, a small town of Asia Minor, in Mysia, situate between Placia and Scylace, near Olympus. Pliny.

ARIADNEA, in *Antiquity*, solemn festivals held at Naxos, in honour of *Ariadne*.

The Ariadneæ are said to have been instituted by Theseus, in atonement for his cruelty in exposing Ariadne big with child on that coast. They were of a mournful cast; one part of the ceremony was for a young woman to lie down, and counterfeit all the agonies of a woman in labour. There was another festival, which was celebrated with various expressions of mirth, in honour of another Ariadne, who was of a gay and sprightly temper. Plut. in *Thef.* and *Potter's Arch.*

ARIADNE, in *Entomology*, a species of PAPILO (*Nymph. Phal.*) described by Linnaeus, Fabricius, and Gmelin. The wings are angulated, fulvous, with undulated black streaks, and a white marginal spot on the anterior pair. It inhabits Java.—*Obf.* Cramer has figured this insect under the name of *Papilio Merione*; and the *Papilio Coryta*, of the same author, appears to be only a variety of the former species.

ARIADNE, in *Fabulous History*, a daughter of Minos, king of Crete, who being prepossessed in favour of Theseus, commissioned to destroy the Minotaur, gave him, in token of her love, a clue of thread, which served to conduct him out of the labyrinth, after his defeat of the monster. Theseus, on leaving the island, took with him Ariadne, but abandoned her in the isle of Naxos. Bacchus found, and married her, and presented her with a crown of gold manufactured by Vulcan, which was afterwards transformed into a constellation. Ariadne had a son by Bacchus, called Eunemon, who was one of the Argonauts. According to Plutarch, there were two females of the name of Ariadne; one of them was espoused to Bacchus in the island of Naxos, and became the mother of Staphylos; the other was abandoned by Theseus in the same island, where she died. Hence were derived the two kinds of fountains, called ARIADNEA. Ariadne's fountain in the isle of Naxos is now only a simple streamlet of water, to which, says Olivier, (*Travels in the Ottoman Empire*, t. ii. p. 110.) travellers would pay no attention, if they were not thus reminded of the spot where Ariadne abandoned herself to all the despair of a forsaken mistress, and from which she perceived the vessel which was transporting her lover from her. At the brink of this fountain, it is said, where she came every day to shed tears, Bacchus found her; and equally compassionating her misfortunes, and enamoured of her beauty, succeeded in consoling her, and in prevailing with her to forget an ungrateful man.

ARIADNE, in *Statuary*, a beautiful statue of Parian marble, which was for near three hundred years one of the greatest ornaments of the Belvidere; where it was placed

by pope Julius II. It is now in the museum at Paris. Ariadne is here represented sleeping upon the rocks of Naxos; where she had been ungratefully left by Theseus. The disorder of the drapery in which she is wrapped, beautifully points out the distraction and anguish of her mind before she fell asleep. On the upper part of her left arm is a bracelet in the form of a little serpent, which the ancients called Ophis; and which, by being taken for the representation of the asp, has occasioned this statue for a long time to be called Cleopatra.

ARIALDUNUM, in *Ancient Geography*, a town of Spain, under the jurisdiction of Corduba. Pliny.

ARJAN, a name given by a tribe of Tartars, called Barschkirians, to their favourite drink, which is a mixture of four milk and mead, and which they keep in an oblong bottle, suspended near the chimney of their hut.

ARIANA, in *Ancient Geography*. See ABRIA.

ARIANA, in *Geography*, formerly called Abderana, a village in Africa, in the province of Tunis Proper, and about three miles distant from the city of Tunis. It is inhabited by poor gardeners, who supply the city with fruit and herbs. At this place the Carthaginian aqueduct forms a curious object, being seventy-four feet high, and supported by columns sixteen feet square, beautifully cut; and near it are several matamores or subterraneous magazines for corn, strongly arched, and capable of holding a great number of bushels.

ARIANO, a town of Italy, and a bishop's see, in the kingdom of Naples, and Principato Ultra. According to Mr. Swinburne (*Travels in the Two Sicilies*, vol. i. p. 202.), it is an ugly city, built upon the uneven summit of a mountain, with an extensive prospect, but much exposed. He supposes that it is not so ancient as the time of the Romans; and that it owes its rise to the demolition of some neighbouring town, and to the advantage afforded by its situation for discovery and defence. After having several times changed its possessors, it became a part of the demesne of the crown in 1466. It has neither trade nor manufactures, and has declined ever since the desolation occasioned by an earthquake in 1456. The number of inhabitants is estimated about 14,000, and it includes twenty parishes and convents, besides an ill-endowed cathedral. The wine of Ariano is pale, and resembles, both in colour and the sharpness of its taste, red champagne. The soil in its vicinity lies upon a soft argillaceous stone: at a small distance to the east, is a bank consisting of layers of volcanic earth, interspersed with thick strata of oyster-shells. The last and most destructive earthquake experienced in this territory, was that of the year 1732. N. lat. 41° 8'. E. long. 15° 19'.

ARIANS, a denomination given to a class of the ancient inhabitants of the Russian empire, called by the Russians Votiaks from the river Votiak, on which they were formerly situated. They call themselves Ari, and their territory Arimz. Their chief town is Chlueof, and the other towns are Slobodskoi, Kaigorod, and Orlof. At first they were subject to the Bulgarians, and afterwards to the Tartars, from whose language they adopted many words into their own.

ARIANS, in *Ecclesiastical History*, followers of Arius, a presbyter of the church of Alexandria about the year 315; who owned Christ to be God, yet maintained him inferior to the Father even as to his deity, and his essence to be different from that of the Father, and that he was neither co-eternal nor co-equal with him; also that the Holy Ghost was not God.

The Arians owned that the Son was the word, but denied that word to have been eternal; asserting, that it had only been created before all other beings. They held, that

that Christ had nothing of man in him but the flesh, with which the *λογος*; or *word* was joined, which supplied the rest.

The distinguishing sentiments of Arius may be deduced from his own writings. In his letter to Eusebius, of Nicomedia, he says; "We cannot assent to those expressions, always Father, always Son, at the same time Father and Son: that the Son always co-exists with the Father: that the Father has no pre-existence before the Son, not so much as in thought, or a moment. But this we think and teach, that the Son is not unbegotten, nor a part of the unbegotten by any means. Nor is he made out of any pre-existent thing; but, by the will and pleasure of the Father, he existed before time and ages, the only begotten God, unchangeable; and that before he was begotten, or made, or designed, or founded, he was not.—But we are perfected, because we say, that the Son has a beginning, and that God has no beginning. For this we are persecuted, and because we say, the Son is out of nothing; which we therefore say, because he is not a part of God, nor made out of any pre-existent thing." In his letter to Alexander, bishop of Alexandria, he says; "We believe, that there are three persons, the Father, the Son, and the Holy Ghost. God, the cause of all things, is alone without beginning. The Son, begotten of the Father before time, made before the ages, and founded, was not before he was begotten. Nor is he eternal, or co-eternal, or begotten at the same time with the Father." The creed, which was presented by Arius at the council of Jerusalem in 335, was this: "We believe in one God, the Father Almighty; and in the Lord Jesus Christ his Son, begotten of him before all ages; God the word, by whom all things were made, which are in heaven and in earth; who came down and was incarnate, and suffered, and rose again, and ascended to the heavens, and shall come again to judge the living and the dead; and in the Holy Ghost; the resurrection of the flesh; the life of the world to come, and the kingdom of heaven; in one catholic church of God, extending itself from one end of the earth to the other." In short, the Arians seem to have believed, that Christ was the Word of God, and was in the beginning with God; but was not the self-existent God, with whom he was in the beginning; but his Son, created by the Father before all ages, one super-angelical and perfect Spirit; and thereby became his only Son, by whom he created all other beings: and that, when he came down from heaven to inhabit the body which was prepared for him in the womb of the blessed Virgin, this super-angelical spirit alone was the soul that informed and enlivened it. From the following abstract of the real opinions of the Arians, as they are given by Dr. Cave in the words of Arius, the reader may be enabled to compare them with those that have been deemed orthodox. First, as the Arians believed the divine substance of the Father to be unbegotten and without beginning, they concluded that it was different from the substance of the Son, who was begotten and had a beginning. But the Athanasians believed the Father and the Son to be of the same substance; that is, of the same *generical* substance, as two men are of the same substance; and the Pseudo Athanasians believe them to be of the same *numerical* substance. Secondly, as the Arians believed the divine substance of the Father to be indivisible and uncompounded, they could not believe the Son to be generated of or from it, in any *literal* sense, either as being compounded with it, or divided from it; and therefore they concluded, that the generation of the Son was *figurative*; and was not a participation of substance, but a creation, as the word creation is frequently used in Scripture with respect to mankind; and

they consumed this from Prov. viii. 22. And because they believed it blasphemous to say, that this generation was out of the indivisible substance of the Father, and no other substance than existed, they said, he subsists, not of or from the Father, but from nothing, and he is not of the Father's substance, for he is created and made. But the Athanasians believed, the Son was *literally* generated from the Father's substance. Thirdly, as the Arians believed the Father and the Son to be of a different substance, they believed them also to be distinct beings, separately existing; in which they agreed with some of the orthodox fathers, as Origen, Gregory Nyssen, Cyril of Alexandria, Maximus the Martyr, Damascen, Dionysius of Alexandria, Alexander of Alexandria, &c.: and differed from others who believed him to be of or from the Father's substance, as the leaves are from the tree; but not divided from it, as the Athanasians. Fourthly, they believed that Christ was the only begotten Son of God, because he only was created by the *immediate* act and power of God himself; and that all other beings, the Holy Ghost not excepted, were created by Christ; in which they agreed with Origen and Eusebius, men of as great character as any in the Christian church. And therefore they called him a creature; but not like other creatures. Fifthly, they believed, that the Son was generated or created before all ages; and was a real person, when spoken of, Prov. viii. 22.; and that his generation was over, as soon as he existed. Whereas some of the orthodox believed him to be only an attribute, when there spoken of; and that he was afterwards generated into a Son; and some of them believed him eternally generating, as light from the sun. Sixthly, they believed the divine being, who descended from heaven and was born of the virgin Mary, was the only intelligent spirit that animated the *body* of Christ; and that this divine being suffered: but the orthodox believed, that the divine being, that descended from heaven and animated the body of Christ, was incapable of suffering; and that it was only the *human* nature, or *soul* of Christ that suffered; i. e. a mere man. Seventhly, as the Arians believed Christ to be the Son of the only true God, and not the only true God and Father of that Son, it was very consistent with their belief to say, "He is not the true God." But if it be imagined, that by this expression they meant to deny, that Christ was truly God the Son, the express words of Eunomius, who calls him, "The only begotten God, the first-born of the whole creation, Christ, true God, not unbegotten;" prove the contrary: and Arius himself explains his meaning sufficiently, when he says, "He is not the true (self-existent and unoriginate) God, but receives his divinity by communication; which was also the opinion of Origen, Eusebius, and Lactantius. It has been commonly asserted, that Arius denied the *eternity* and *divinity* of the Son of God: but the author of "The Apology of Ben Mordecai," p. 98. says, that this assertion never appeared to him to have been made upon good authority; for he never denied the *eternity* of the Son in any other sense than that in which it is denied by the orthodox, and signifies unoriginate and unbegotten; that is, self-existent: and that the charge against him of his not believing the *divinity* of Christ is not founded, appears from this circumstance; that his adversaries accused him of idolatry, because he worshipped the Son of God; supposing him at the same time to be a God created before all ages. Now if he was idolatrous in believing Christ to be a created God, it is impossible he should at the same time be guilty of denying his divinity. Besides, Theodoret says, it was the opinion of Arius and Eunomius, that Christ took a body; but the godhead or divinity performed the office of a soul: and Athanasius says, Arius taught that Christ had the flesh as a covering to the divinity or godhead.

Never

Nevertheless, Athanasius's enmity to Arianism is well known. He speaks of it as the worst of all heresies, and says, the devil was the father of it; nor will he by any means allow, that Arians can be rightfully called Christians. However, in declaiming against Arianism, as the worst and most hateful of all heresies, he makes this its peculiarity, that the Arians endeavoured to carry their point by externals, that is, civil authority, or the power of the magistrates. And on account of the violent methods to which they recurred, he says, that this sect, or heresy, had put on the devil complete.

The rise of the Arian controversy is referred by some to the year 316, by others to 319, by Baronius to 315, and by Basnage and others to the year 317. Socrates (Ecl. Hist. l. i. c. 5.) gives this account of its origin. "Alexander," he says, "discouring one day too curiously concerning the doctrine of the Trinity in Unity, in the presence of his presbyters and the rest of his clergy, Arius, one of the presbyters, supposed his bishop to advance the doctrine of Sabellius, and disliking that, he went into an opinion directly opposite." Theodoret also says (Ecl. Hist. l. iv. c. 1.) that Arius took occasion, from things said by Alexander, to raise a disturbance; and Constantine likewise, in his letter to Alexander and Arius, first blames the former for putting questions to his presbyters, which he ought not; and then the latter, for inconsiderately uttering notions that ought to have been buried in silence. Accordingly, it seems to have been the chief view of the Arians, as well as of the orthodox, to steer a kind of middle course between Sabellianism and Socinianism. To which purpose, the Arians maintain, against the Sabellians, that the Son of God is a being distinct and different from the Father, and not a mere virtue, or character, or mode of existence; and against the Socinians, as well as the Nestorians and Sabellians, that Christ was not a mere man, but a true God.

After Arius had for some time published the doctrines that are ascribed to him, Alexander was blamed for his indifference, and for his toleration of such novelties. Roused by reproaches and complaints, he appointed a time for hearing the subjects in dispute fairly debated between Arius and those who opposed him. Arius adhered to the opinions he had advanced; and they who opposed him asserted the Son to be consubstantial and co-eternal with the Father. And though another assembly was appointed for debating the points in agitation, they could by no means come to an agreement. Alexander himself is said to have been at first in some suspense; but at length he declared himself in favour of those who were the antagonists of Arius.

The Arians were first condemned and anathematized by a council at Alexandria, consisting of 100 bishops, in 320, under Alexander, bishop of that city; who accused Arius of impiety, and caused him and several ecclesiastics, of whom two were bishops, to be expelled from the communion of the church: and afterwards by 318 fathers in the general council of Nice, assembled by Constantine in the year 325. In the interval between these councils, Alexander had written a circular letter to all bishops, in which he represents Arius and his partisans as heretics, apostates, blasphemers, enemies of God, full of impudence and impiety, forerunners of antichrist, imitators of Judas and of men whom it was not lawful to salute, or to bid God speed. Yet Sozomen (l. i. c. 15.) acknowledges, that they were learned, and, in all appearance, good men. Eusebius of Nicomedia, and Eusebius the historian, endeavoured to pacify Alexander, and to persuade him to compromise the quarrel; and Constantine sent a letter, about the year 324, by Hosius of Corduba, addressed to Alexander and Arius,

in which he reproved them both for disturbing the church with their insignificant disputes, and exhorted them to mutual forbearance and forgiveness. But the dispute was not to be thus terminated; and Socrates represents the parties on both sides as equally contentious and refractory. Accordingly the Nicene council was summoned. At this council Eusebius proposed a creed, in which he avoided the offensive word *ὁμοούσιος*, *homoousios*, and anathematized every impious heresy, without specifying any; but his advice was not followed, the term was inserted, and the Arian doctrines were anathematized. But notwithstanding these measures, Arianism was not extinguished; on the contrary, it became the reigning religion, especially in the East, where it obtained much more than in the West. Arius was recalled from banishment by the emperor Constantine, in two or three years after the council of Nice, as some say in 327 or 328, or according to others in 330; and the laws that had been enacted against him were repealed. In the year 335, Athanasius, his zealous opponent, was deposed and banished into Gaul, by the council held at Tyre; and Arius and his followers were reinstated in their privileges, and received into the communion of the church: in little more than a year after this, he fell a victim to the resentment of his enemies, and died a tragical death, occasioned probably by poison, or some other violence. The Arian party found a protector in Constantius, who succeeded his father in the empire of the East; and the zeal with which he abetted them, produced many animosities and tumults to the time of his death, in the year 360. They underwent various revolutions, persecuting and oppressed, under succeeding emperors, according to the degree of interest they had in the civil power; till, at length, Theodosius the Great exerted every possible effort to suppress and disperse them. He drove them from their churches, enacted laws whose severity exposed them to the greatest calamities, and rendered, throughout his dominions, the decrees of the council of Nice triumphant over all opposition; so that the public profession of the Arian doctrine was confined to the barbarous and unconquered nations, such as the Burgundians, Goths, and Vandals.

The Arians were divided into various sects, of which ancient writers give an account, under the names of *Semi-Arians*, *Eusebians*, *Actians*, *Eunomians*, *Acacians*, *Pfathyrians*, and others. But they have been commonly distributed into three classes, viz. the genuine *Arians*, *Semi-Arians*, and *Eunomians*. The Arian cause suffered as much from the discord and animosity that prevailed among these sects, as from the laboured and zealous efforts of the orthodox party.

Arianism was carried in the fifth century into Africa, under the Vandals; and into Asia, under the Goths. Among those fierce and savage nations, which were overturning the Western empire, it found a fixed residence, and a peaceful retreat. As their security animated their courage, they treated the Catholics with the same violence which the latter had employed against them and other heretics; and they persecuted and vexed in various ways such as professed their adherence to the Nicene doctrines. The Vandals, who reigned in Africa, surpassed all the other savage nations in barbarity and injustice towards the Catholics. The kings of this fierce people, particularly Genseric and Hunneric his son, demolished the churches of those Christians who acknowledged the divinity of Christ, sent their bishops into exile, and maimed and tormented in various ways such as were firm and inflexible in the profession of their faith. During these persecutions in Africa, a stupendous miracle is said to have been wrought, by which the Supreme Being is supposed to have testified his displeasure

against the Arians, and his favour to their adversaries. This miracle consisted in enabling these Catholics, whose tongues had been cut out by the Arian tyrant Hunneric, to speak distinctly, and to proclaim aloud the divine majesty of the Saviour of the world. This remarkable fact, says Moheim, can scarcely be denied, since it is supported by the testimony of the most credible and respectable witnesses; but whether it is to be attributed to a supernatural and miraculous power is a matter not so easily decided, and which admits of much dispute. The reality of this extraordinary fact is attested by Victor, an African bishop; Eneas of Gaza, a platonic philosopher; a perpetual edict of the emperor Justinian; count Marcellinus in his Chronicle of the times; and pope Gregory the first, who had resided at Constantinople as the minister of the Roman pontiff. Among the moderns who have defended its miraculous nature, we may mention Abbadic, Berri-man, Chapman, and Dodwell; and we may refer to Mr. Middleton's "free Inquiry into the miraculous powers," &c. in his "Miscellaneous works," vol. i. p. 149, &c.; and to Mr. Toll's Defence, p. 80, &c. for arguments against it. The learned historian, Mr. Gibbon, observes in his usual manner, (Hist. of the Decline, &c. of the Roman empire, vol. vi. p. 295.), that "this supernatural gift of the African confessors, who spoke without tongues, will command the assent of those, and of those only, who already believe, that their language was pure and orthodox; but the stubborn mind of an infidel is guarded by secret, incurable suspicion; and the Arian, or Socinian, who has seriously rejected the doctrine of the Trinity, will not be shaken by the most plausible evidence of an Athanasian miracle." Italy, the Gauls, and Spain, were also deeply infected with Arianism; and towards the commencement of the sixth century, it was triumphant in many parts of Asia, Africa, and Europe. Many of the Asiatic bishops favoured the Arians secretly, while their opinions were openly professed, and their cause maintained by the Vandals in Africa, the Goths in Italy, the Spaniards, the Burgundians, the Suevi, and the greatest part of the Gauls. The Greeks, indeed, who had received the decrees of the council of Nice, persecuted and oppressed the Arians, wherever their influence and authority could reach; but the Nicenians, in their turn, were not less rigorously treated by their adversaries, particularly in Africa and Italy, where they felt, in a very severe manner, the weight of the Arian power, and the bitterness of their resentment. The triumphs of Arianism were, however, but transitory; and its prosperous days were entirely eclipsed, when the Vandals were driven out of Africa, and the Goths out of Italy, by the arms of Justinian; for the other Arian princes were easily induced to abandon themselves the doctrine of that sect; and not only so, but to employ the force of laws and the authority of councils to prevent its farther progress among their subjects, and to extirpate it entirely out of their dominions. Such was the conduct of Sigismund, king of the Burgundians; Theodemir, king of the Suevi, who had settled in Lusitania; and Reccared, king of Spain. However, it revived again in Italy, under the protection of the Lombards, in the seventh century.

Erasmus seems to have aimed, in some measure, to restore Arianism, at the beginning of the sixteenth century, in his commentaries on the New Testament: accordingly, he was reproached by his adversaries with Arian interpretations and glosses, Arian tenets, &c. To which he made little answer, save that there was no heresy more thoroughly extinct than that of the Arians: "*Nulla heresis magis extincta quam Arianorum.*" But the face of things was soon changed: Servetus, a Spaniard by nation, published, in 1531, a little treatise against the Trinity: which once more excited at-

ention to the sentiments of the Arians in the West — Indeed he rather showed himself a Photinian than an Arian; only that he made use of the same passages of scripture, and the same arguments against the divinity of our Saviour, with the proper Arians.

It is true Servetus had not, properly speaking, any disciples; but he gave occasion, after his death, to the forming of a new system of Arianism in Geneva, which did not a little please Calvin.—From Geneva, the new Arians removed to Poland, where they gained considerable ground; but at length became Socinians.

The appellation Arian has been indiscriminately applied, in more modern times, to all those who consider Jesus Christ as inferior and subordinate to the Father: and whose sentiments cannot be supposed to coincide exactly with those of the ancient Arians. Whilst they all concur in maintaining the pre-existence of Christ as a super-angelic spirit, which supplied the place of a soul to him upon his conception and birth, and also his derivation from and subordination to the Father; some of them ascribe to him a higher degree, rank, and dignity, than others. Accordingly they have been sometimes distinguished into High and Low Arians. The former, approaching in opinion to those that have been called Semi-Arians, or rather to the ancient Arians, whilst they believe the Father to be the one supreme God over all, absolutely eternal, underived, unchangeable, and independent; conceive the Son to be the first derived being from the Father, and under him employed in creating, and also in preserving and upholding the World, and in exercising a moral, as well as natural, administration over mankind; so that, under this distinguishing character, he is invested with the office of final judge. Of these high Arians, some suppose, that Jesus Christ, sustaining relations, and exercising offices so honourable in themselves and so interesting to mankind, is a proper object of subordinate worship; whilst others imagine, that worship in the proper and discriminating sense of the term, belongs only to the Father, the self-existent, infinite, and supreme deity. Some Arians of this class have maintained, that the son of God, before his incarnation, had only, or chiefly, the care and government of the Jewish people allotted to him; whilst other angels were appointed presidents or princes of other nations and countries. This was the opinion of Mr. James Peirce, an ingenious and learned commentator: see his "Paraphrase and notes, &c. on Coloss. ii. 15. and Heb. ii. 9." Others have also maintained, that the conduct of all the dispensations of Providence, in every period of time, as they related to the patriarchs, to the Jewish nation, to the prophets, to Christians, and to the world in general, has been entrusted to Christ; and that he was distinguished by various appropriate titles, as Jehovah, the angel of the covenant, the angel Jehovah, the angel of the presence, and the Logos, &c. To this purpose they allege, among other arguments, the declaration of the Apostle (Heb. i. 2. xi. 3.) that it was by Christ, God made the worlds, *αἰῶνας*, the ages or dispensations; i. e. by whom God formerly disposed and ordered those eminent and remarkable periods of time; the Antediluvian, the Patriarchal, the Mosaic, and the Present; being put under his government, according to the will of the Father. See Ben Mordecai's Apology, letter ii. passim. It is also alleged as a further presumption in favour of this hypothesis, that the sacred writings contain a revelation and history of the administration of Providence with regard merely to the inhabitants and concerns of our world, or of the terrestrial globe; and, of course, that the subordinate direction and superintendence of this part of the government of the supreme and infinite sovereign of this, and innumerable other worlds,

worlds, is entrusted with Jesus Christ; a superior being adapted, by his pre-existent dignity, and extraordinary perfections and powers, to the office of ruler and judge. The low Arians, on the other hand, are distinguished from the Socinians in no other respect, besides their maintaining the pre-existence, prior dignity, and transcendent native perfections of that super-angelic spirit, which was united to the body of Christ, in his miraculous incarnation: but that he is entitled to no kind of religious worship, in the peculiar and appropriate meaning of this term. Arians of both descriptions claim the appellation of Unitarians, though they do not adopt the dogma of the simple humanity of Christ, of late exclusively maintained by some modern Unitarians.

Mr. Whiston was one of the first divines who revived the Arian controversy, in the beginning of the eighteenth century. About the year 1706 he began to entertain some doubts about the proper eternity and omniscience of Christ. This led him to review the popular doctrine of the Trinity; and in order to execute this review, with a degree of diligence and circumspection suitable to its importance, he read the New Testament twice over, and also all the genuine monuments of the Christian religion, till near the conclusion of the second century. By this inquiry, he was led to think, that, at the incarnation of Christ, the Logos, or eternal wisdom, supplied the place of the rational soul, or *πνεύμα*; that the eternity of the son of God was not a real *distinct* existence, as of a son properly *co-eternal* with his father, by a true eternal generation, but rather a metaphysical existence *in potentia*, or in some sublimer manner in the father, as his wisdom or word; that Christ's real *creation*, or *generation* (for both these terms are used by the earliest writers), took place some time before the creation of the world; that the council of Nice itself established no other eternity of Christ; and finally, that the Arian doctrine in these points was the original doctrine of Christ himself, of his holy apostles, and of the most primitive Christians. Mr. Whiston was confirmed in these sentiments by reading Novatian's treatise concerning the Trinity; but more especially by the perusal of the "Apostolical Constitutions," the antiquity and authenticity of which he endeavoured, with more zeal than precision and prudence, to prove, in the third part of his "Primitive Christianity." The consequence to himself was, his removal from his theological and pastoral functions, and also from his mathematical professorship at Cambridge; "as if Arianism," says the translator of Mosheim, "had extended its baneful influence even to the science of lines, angles, and surfaces." Whiston was followed by Dr. Clarke, who published his famous book; intitled, "The Scripture Doctrine of the Trinity," &c. in consequence of which, he was reproached with the title of *Semi-Arian*. See SEMI-ARIANS. He was also threatened by the convocation, and combated by argument. Dr. Waterland, who has been charged with verging towards *Tritheism*, was one of his principal adversaries. The history of this controversy, during the last century, may be found in a pamphlet, intitled, "An Account of all the considerable Books and Pamphlets that have been wrote on either Side, in the Controversy concerning the Trinity, from the year 1712; in which is also contained an Account of the Pamphlets written this last Year, on each Side, by the Dissenters to the end of the year 1719;" published at London, 1720. The more recent treatises on the subject of the Trinity are well known to our theological readers. See TRINITY. Mosheim's *Ecl. Hist.* Lardner's Works. Ben Mordecai's Apology, Letter I. Jortin's Rem. on *Ecl. Hist.* vol. i.

ARIANISM, the doctrine of Arius, who lived in the beginning of the fourth century. See ARIANS.

ARIARATHIA, or ARIARATHERA, in *Ancient Geography*, a town of Asia, in Cappadocia. Steph. Byz.

ARIAS, or ARIUS, a river of Aria.

ARIAS *Montanus*, in *Biography*, a learned Benedictine monk of the sixteenth century, was born at Seville, of a noble but reduced family. Having completed his education at Alcalá, where, besides the study of theology, he made himself master of the Latin and Greek languages, and also of Hebrew, Arabic, Syriac, and Chaldee; he travelled through France, Germany, Italy, the Netherlands, and England, for the purpose of acquiring an acquaintance with the modern languages. Upon his return he took priest's orders, and then accompanied the bishop of Segovia to the council of Trent, where he obtained great reputation. He afterwards retired to Aracena, a pleasant spot near the mountains of Andalusia, to prosecute his literary labours. From this retreat he was summoned by Philip II. and entrusted with the care of a new edition of the *Polyglot Bible*, which he much enlarged and improved. The execution of this work contributed so much to his reputation, that he became the object of envy; and he was under the necessity of taking a journey to Rome, to vindicate himself from the censure of those who reproached him with having too closely followed the explanations of the Jewish Rabbis. As soon as he returned to Spain, Philip offered him a bishoprick, as a recompence for his labours; but this he declined accepting, and contented himself with a pension of two thousand ducats, and the office of chaplain to the king. He died at Seville in 1598, at the age of seventy-one years. His mode of living was singularly abstemious, as he drank no wine, and seldom tasted animal food. He was indefatigable in his studies; and was regarded as one of the first literary characters in Spain. His writings, which are numerous, bear evident marks of sound sense, as well as profound erudition. Besides his "Dissertations on Jewish Antiquities," prefixed to the Polyglot, printed in the "Critici Sacri," and published separately, in 4to. at Leyden in 1596; he has left in Latin, "Commentaries on several parts of Scripture," published at Antwerp, at different periods, between the years 1583 and 1599; a "History of Mankind," in 1593; "A Treatise on the History of Nature," in 1601; "A Version of the Psalms and Ecclesiastes," in Latin verse, in 4to. 1574, with other poetical pieces; and a translation of Jonathan's Chaldee paraphrase of Hosea, and of the Itinerary of Benjamin of Tudela. Dupin. *Nouv. Dict. Histor.*

ARIASPE, or AGRIASPE, in *Ancient Geography*, a town of Asia, in Drangiana, the *Bergasse* of major Rennell's map, seated on the river Heermund, in the province of Segistan or Scistan. N. lat. 32° 15'. E. long. 63° 46'.

ARIASSOR, or ARIASSUS, a city of Pamphylia, which was a bishop's see. Ptolemy.

ARICA, in *Geography*, a jurisdiction in the bishoprick of Arequipa in Peru, extending along the coast of the South sea. It produces little else than Agi or Guinea pepper, and in some places large olives, of which they make oil and pickles.

ARICA, a sea-port town of South America, in the province of Los Charcas in Peru. It is the port-town to most of the mines in that country; and it is the only place in this part of the coast which admits a landing. It was formerly strong and populous, and carried on a great trade, as the harbour is good and convenient for shipping. The immense booty taken here by sir Francis Drake in 1579, contributed to the decline of the opulence and trade of Arica. At that time most of the silver of Potosi was shipped in this port for

Lima; but since that period, the Spaniards have chiefly sent it by land, as the most secure, though most difficult mode of conveyance. It also suffered much by an earthquake in 1605. As they have little or no rain in this place, their houses are built without roofs. The valley of Arica is principally famous for the culture of Guinea pepper, which the Spaniards planted here, of which they raise annually to the value of eighty thousand crowns. This port is still much frequented, not merely on account of the mines, to which it affords an easy access, but for the rock-salt which is dug out of the adjacent mountains, and shipped for the western coast. S. lat. 18° 27'. W. long. 71° 5'.

ARICADA, in *Ancient Geography*, a town of Asia, in Diangiana. Ptolemy.

ARICARETS, in *Geography*, a nation of South America, in Guiana, on the banks of a river called Aricari.

ARICHAU, a town in the island of Cape Breton.

ARICHI, in *Ancient Geography*, a people of Asiatic Sarmatia, among the Mæota, near the Palus Mæotis. Ptol.

ARICIA, a town of Italy, in Latium, near the Alban mount, on the Appian way, about twenty miles from Rome. This city existed before the establishment of the Greeks and Latins in Italy; and the inhabitants of it were often distinguished among the enemies of Rome in its nascent state. Cicero speaks of it as a municipal town; and Frontinus, ranking it in the number of colonies, says, that its walls were erected by the orders of Sylla. Near it was the "Nemus Aricinum," or grove of Diana, who hence obtained the epithet of "Aricina." Here she had a temple frequented by her votaries, who travelled to it on foot from Rome, with flaming torches, and crowns on their heads.

ARICONIUM is placed, in Antonine's Itinerary, near Rofs, about eleven miles from Caerleon: our other antiquaries place it at Kenchester. It was a town of the Silures.

ARICOURIS, in *Geography*, a people of South America, in Guiana, towards the river of the Amazons. De Laet says, they manifest no signs of religion, but seem to respect the sun and moon, without paying them any worship; and yet they appear to believe the immortality of the soul, as they point to the heavens, as, after death, the abode of those who have lived well. They are timid, suspicious, and inclined to revenge. They are addicted to forcery, and consult soothsayers, who, as they think, are inspired by a demon called "Watipa," and thus enabled to foretel future events. Their eyes and hair are black, and they have no covering; but the men envelope themselves all over in a kind of gummy dye, to preserve their bodies from the heat of the sun, and the women paint themselves with it more slightly, and in a variety of figures.

ARIDANA, a town of Arabia, ten miles south of Mecca.

ARIDAS, a kind of tapestry, manufactured in the East Indies, from a shining thread obtained from certain herbs; and hence called "Aridas of herbs."

ARIDED, in *Astronomy*, a fixed star of the second magnitude, in the extremity of the Swan's tail. It is also called Hierezim, Adigege, and Arided.

ARIDELOSIS, ἀριδελωσις, in *Rhetoric*, is sometimes used for the figure commonly called ΣΥΝΟΝΥΜΙΑ.

ARIDSONG, in *Geography*, a town of Asia, in the country of Thibet, one hundred and fifty-two miles north of Carmandu. N. lat. 30° 40'. E. long. 84° 45'.

ARIDULLAN, in *Natural History*, the name of a file substance, used in the East Indies in intermittent fevers. It is of a greenish yellow colour, and coarse texture, and when burnt, emits fumes smelling like arsenic. It is properly of the ZARNIC kind, though somewhat different from all the European kinds.

ARIDURA, in *Physic*, a dryness, or want of juice and moisture of the parts. Hence it is also used by some for an aridity or consumption: and it is more particularly used to denote a hectic fever. The term is more frequently used by *Modern Writers*, to denote a particular atrophy, or wasting of some single member of the body: in which sense, it amounts to the same with what we otherwise call WITHERING.

ARIEN, in *Geography*, a small island in the Adriatic, near the coast of Italy, three leagues north of Venice.

ARIENZO, a town of Italy, in the kingdom of Naples, and country of Lavoro, fourteen miles north-east of Naples. Its situation is low, but delightful, and it is surrounded with vineyards and gardens. It now belongs to Caraffa, duke of Madaloni.

ARIES, or the *Ram*, in *Astronomy*, a northern constellation, the first of the twelve signs of the zodiac; from which also a twelfth part of the ecliptic takes its denomination, and into which the sun enters about the twentieth of March. The stars in this constellation, in Ptolemy's catalogue, are 18; in Tycho's, 21; in Hevelius's, 27; in the Britannic catalogue, 66; but they are most of them very small, one only being of the second magnitude, two of the third, and all the rest smaller.

ARIES, in *Artillery*, denotes a battering-ram, or a military engine with an iron head, much in use among the ancients, to batter and beat down the walls of places besieged.

Of this there were three kinds; the first rude and plain; the others artificial and compound.

The first seems to have been no more than a great beam, which the soldiers bore in their arms, and with one end of it, by main force, assailed the walls. This required a great force to work it; yet produced but a small effect.

The second or compound ram is described by Josephus (De Excid. Hierosol. 3.) thus: "The ram is a vast long beam, like the mast of a ship, strengthened at one end with a head of iron, somewhat resembling that of a ram, whence it took its name. This is hung by the middle, with ropes, to another beam which lies across two posts; and hanging thus equally balanced, is by a great number of men violently thrust forward, and recoiled backward, and so shakes the wall with its iron head, nor is there any tower or wall so thick or strong, as to resist the repeated assaults of this forcible machine."

The third only differed from the former, in that it was covered with a *χιτων*, or screen, to guard the soldiers; whence it was called *testudo arietaria*.

Mr. Felibien describes a fourth sort of battering-ram, which ran on wheels; and was the most perfect and effectual of them all. Vitruvius affirms, that the battering-ram was first invented by the Carthaginians, while they laid siege to Cadiz: theirs was the simple kind first mentioned. Pephasthenos, a Tyrian, afterwards contrived to suspend it with ropes; and finally, Polydus, the Thessalian, to mount it on wheels, at the siege of Byzantium under Philip of Macedon. Yet Pliny assures us, that the ram was invented at the siege of Troy; and it was this that gave occasion to the fable of a wooden horse. The invention has been ascribed by some to Artemorus, a Greek architect, who flourished 441 years before Christ. Some have supposed, that the walls of Jericho, mentioned in the book of Joshua, were beaten down by this instrument; the ram's horns by which they were overthrown being no other than the horns of the battering ram.

Plutarch tells us, that Marc Antony, in the Parthian war, used a ram of 80 feet long; and Vitruvius assures us,

they were sometimes made 106, and sometimes 120 feet long; to this great length perhaps the force of the engine was in great measure owing.

The ram was managed at once by a whole century of soldiers; so that it played continually and without intermission; being usually covered with a *vinca*, to protect it from the attempts of the enemy.

The battering ram is represented in *Plate I. Artillery*, *fig. 1.* This ram AB is suspended by a rope *x* to the cross beam *y*, at the top of the frame CD. Its head A is fastened to a large beam by three or four bands of iron four feet broad. At the extremity of each of these bands *a* was a chain *b* also of iron, fastened by one end to a hook *c*; and at the other extremity of each of these chains was a cable firmly bound to the last link. These cables extended through the whole length of the beam to the end of the ram B, where they were bound firmly together with small ropes. To the end of these cables was fixed another, composed of several strong cords plaited together for some length, and then running single. At each of these several men were placed to balance and work the machine. The unsuspended ram differed from this only in the manner of working it: instead of being slung by a chain or cable, it moved on small wheels, on another large beam.

These battering-rams, by their own weight, and by the action of the men who impelled them, excited a force which in some cases exceeded the utmost effect of our battering cannon. Dr Defaguliers (*Lectures*, vol. i. p. 65.) has demonstrated that the momentum of a battering-ram, twenty-eight inches in diameter, one hundred and eighty feet long, with a head of cast iron of one and a half ton, the whole ram weighing with its iron hoops, 41,112 pounds, and moved by the united strength of 1000 men, would only be equal to that of a ball of thirty-six pounds weight shot point blank from a cannon. Mr. Attwood, comparing the effect of the battering-ram, having its metal extremity equal to a twenty-four pounder, with a cannon ball of twenty-four pounds weight, observes, that in order to their producing the same effect in penetrating a wall or making a breach in it, the weight of the ram must exceed that of the cannon ball in the proportion of the square of 1700, the velocity of the ball, to the square of the velocity with which the battering-ram could be made to impinge against the wall expressed in feet. Estimating this at ten feet in a second, the proportion of the weights will be that of about 2,890,000 to 100, or 28,900 to 1; and therefore the weight of the battering-ram must be 346 ton. In this case, the battering-ram and the cannon ball, moving with the velocities of 10 and 1700 feet in a second, would have the same effect in penetrating any obstacle; but, as the weight of the ram was probably never so great as the above supposition states it to have been, the force of a cannon ball to make a breach in walls must exceed that of the ancient aries: but the momentum of this, or the impetus by which it communicated a shock to the whole building, was far greater than the utmost force of cannon balls; for if the weight of the battering-ram were no more than 170 times greater than that of a cannon ball, each moving with its respective velocity, the momenta or forces of both would be equal; but as the weight of these ancient machines was certainly much greater than 170 times that of our heaviest cannon balls, their momentum or impetus to shake or overturn walls and demolish buildings, was much superior to that which is exerted by the modern artillery. And since the strength of fortifications will in general be proportioned to the means which are used for their demolition, the military walls of the moderns have been constructed with less attention to their solidity and

massy weight than the ancients thought to be a necessary defence against the aries; that sort of cohesive firmness of texture which resists the penetration of bodies being now more necessary than in ancient times. Nevertheless it is manifest, that even now solidity or weight in fortifications is also of material consequence to the effectual construction of a wall or battery.

The ram was frequently used in the fourteenth century. Sir Christopher Wren employed it in demolishing the walls of the old church of St. Paul's previously to his rebuilding it; and found no machine so well adapted to this purpose. See CATAPULTA.

ARIES, in *Entomology*, a species of SCARABÆUS, a native of the Cape of Good Hope. The thorax is roundish, and the head armed with a very short subulate horn. Fabricius. Gmelin.

ARIES, in *Zoology*, the Linnæan and Gmelinian specific appellation of the common sheep, or kind of OVIS, with compressed lunated horns, "cornibus compressis lunatis," Faun. Suec. Syst. Nat. &c.; ovis domestica, of Ray; pecus, aries, ovis, verrex, agnus, of Plin. Aldr. Jonst. &c.; brebis et belier, of Buff.; schaaf, wedder, hammel, lamb, of Gefn. Thierb.; and ram or common sheep, of Penn. Briff. thus defines this species: "aries laniger, cauda rotunda brevi." Dr Shaw observes, in his *Zoology*, that the most prominent characters are: that the horns twist spirally outwards; that the tail is round and short; and that the body is covered with wool; but these characters, he remarks, are so greatly varied in different races, that it is hardly possible to fix on an absolute distinctive mark which shall apply to all the varieties.

Pallas, whose extensive travels through the Russian empire, and especially Siberia and Great Tartary, enabled him to make many important observations on these useful animals, found what he regarded only one species subdivided into four varieties, distinguished by their tails, the form of their heads, their ears, and fleece; and hence he condemns as unfounded and fanciful the idea of making specific differences of the accidental varieties, which he imagines the education or mode of life, the climate, food, and crossing of the breed have produced in sheep, as in other animals; and in conformity with this opinion, he considers not only those varieties found in Europe, but also those of other quarters of the globe, as only accidental varieties of the same species; an opinion in which he appears confirmed by finding that they produce a prolific race, though the breed be ever so crossed; and which he thinks would not be the case were they different species. Some preceding naturalists evidently entertain very opposite sentiments on this subject; but whether we are to regard the several apparently distinct kinds of the sheep as so many species, or as varieties originating from one parent flock only, it is desirable, nay highly requisite, to draw some line of discrimination between the more remarkable, or, if the expression may be allowed, more permanent varieties, by which they may be ascertained. This is confessedly a matter of the utmost difficulty. Linnæus has, we think, devised the best mode in which it can be accomplished without exciting the prejudices of naturalists, or clashing with their opinions; and Gmelin has certainly improved upon it. A name and character are assigned to each variety, so far as it is deemed practicable to define them; and by arranging them still as varieties only of the common species *Aries*, the reader is at liberty to form those conclusions he may think proper. The varieties enumerated by Gmelin amount to ten that are very distinct, and are arranged in the following order.

1. *Anglica. a.*—Ovis anglicana. Amoen. Acad. 4. p. 174.
Hornless

Hornless sheep of Pennant. In Lincolnshire, and other counties in England, and also in many other parts of Europe, the hornless breeds of sheep are reared in great numbers. Independently of this kind being destitute of horns, the tail and scrotum hang down as low as the knees; and by these characters it may be distinguished.

2. *Ruffica*. β .—*Ovis ruffica*. Amoen. Acad. 4. 174. This is the variety which Pallas calls *ovis brachyura* and *ovis ruffica*; it inhabits Russia, and is called the Russian sheep by the natives. According to Gmelin, this kind is horned; has a short tail; and is covered with short coarse wool. Dr. Pallas acquaints us that it is not only reared throughout all the northern parts of Russia, but likewise by the Fins and other neighbouring nations; and that some of this kind have been transported into Siberia, where they have supported themselves on some pastures, though in poor condition. In the southern countries they are, however, in less estimation than the long-tailed and fat-tailed kinds, which are much superior to them in size, fat, and flavour; but the ewe of the former will couple readily with the ram of the fat-tailed variety, and produce an animal larger and more noble than its mother, with a tail swelled at the base with fat, and meagre towards the end. This short-tailed kind bears some resemblance to the sheep of Iceland, especially in size, tail, and coarseness of the fleece; yet it differs from that breed in one essential particular, the horns, which are much smaller in proportion. The Tscherkessian sheep, we are told, resembles it also in the form of the head, straight erect ears, and thickness of the fleece; but in texture the fleece is very different, being fine in the Tscherkessian kind, and in the other as coarse as dog's hair; and the short-tailed kind is uniformly distinguished by the tail being about a quarter of a yard shorter than the other variety.

3. *Hispanica*. γ .—*Ovis hispanica*. Amoen. Acad. 4. 174. Spanish sheep. The spires of the horns are extended horizontally, and the wool is remarkably fine and plentiful on the animals of this breed. It is said to be peculiar to Spain.

4. *Polycerata*. δ .—*Ovis polycerata*. Amoen. Acad. 4. 174. *Ovis sexcornis* et *tricornis*. Aldr. *Brebis a plusieurs cornes*, *Belier d'Islande*. *Brebis d'Islande*. Buff. *O. e. Gotlandia* Pall.; and many horned sheep of Pennant. This kind is distinguished by having more than two horns; how far we are authorized to admit it as a definitive, rather than an accidental variety, is doubtful. In a supplement to the article sheep in the work of Buffon, the count inserts a few observations on the drawings of two Walachian sheep, a ram and ewe, which were sent him by Mr. Collinson, one of the members of the Royal Society of London at that time, in the course of which this animal is mentioned; and from thence we should rather conclude the variety is accidental. "The rams, ewes, and wedders of Iceland," says that writer, "differ chiefly from ours in having larger and thicker horns. Some of them have three, four, or five horns; but this peculiarity of having more horns than two must not be considered as common to the whole race of Iceland sheep; for in a flock of four or five hundred, hardly three or four wedders can be found with four or five horns; and when these occur, they are sent to Copenhagen as rarities. As a farther proof of their being scarce, they give a higher price in Iceland for this than for the common kind." Dr. Pallas speaks of an accidental variety of the Kirguise ram with five horns, and of another with four horns disposed with great symmetry. Dr. Shaw describes the many-horned sheep as a distinct variety. He observes that it occurs in the northern parts of Europe more frequently than in other regions, and that it is said to be most common in Iceland.

The horns are either three, four, or five in number; sometimes placed with great regularity, and sometimes differing in proportion and situation. A four-horned variety, with very long hairs hanging from the head, is also found in some parts of Europe: the two largest horns in this kind are straight and nearly upright on the top of the forehead, the smaller pair are seated on each side of the head, and turn downwards. Gen. Zool.

5. *Africana*. ϵ .—*Ovis Africana*. Amoen. Acad. 4. p. 173. *Aries pilosus*, *pilis brevibus v. silitus*, Briff. *Ovis Africana*, *pro vellere lanoso pilis brevibus hirtis vellita*, Sloane; *Ovis aethiopica*, Charlet.; and *ovis pilis brevibus*, Gmel. The African sheep covered with short hair instead of wool. *Ovis*. The African sheep of Mr. Pennant and Dr. Shaw is the following species.

6. *Guineensis*. ζ .—*Auribus pendulis*, *paleareibus laxis pilosis occipite prominente*, Linn.; *aries (ovis guineensis) pilosus*, *pilis brevibus vellitus*, *juba longissima*, *auriculis longis pendulis*, Briff.; *aries guineensis f. angolensis*, Mareg.; *Ovis guineensis f. angolensis* Maregravii, Raj.; *moutons*, Adanf.; *moutons de Guinée*, Des Marches; *belier de Senegal*, *belier des Indes*, *autre belier des Indes*, et *brebis des Indes*, Buff.; *sheep of Sahara*, Shaw, it.; *African sheep*, Penn.; *African sheep*, Shaw's Zool.; *Guinea sheep*, Linnæus, in the twelfth edition of the *Sytlema Naturæ*, considered this animal as a distinct species, and assigned it the character above mentioned: "ears pendulous, dewlaps lax and hairy; hind part of the head prominent." Gmelin deems it a variety only. In point of figure, this creature is so very remarkable that it cannot easily be confounded with any other variety: "its meagre appearance, length of neck and limbs, pendent ears, and long arched or curved visage," are strikingly characteristic; and as Dr. Shaw further observes, "it is covered rather with hair than wool, and has a pair of pendent hairy wattles beneath the neck, as in goats; the horns are small, and the tail long and lank." This kind is supposed to be most frequent in Guinea.

7. *Laticaudata*. η .—*Arabica platyura*, Ruffel; *Arabia ovis*, Alder.; *ovis Turcica*, Charletta.; *ovis cauda obesa*, Ludolf; *ovis laticauda*, Raj. Gmel.; *aries (ovis laticauda) laniger*, *cauda latissima*, Briff.; *moutons de Barbarie* ou *a grosse queue*, Chardin; *mouton de Barbarie*, *mouton d'Arabie*, Buff.; *ovis laticauda*, *platyceros f. Arabica*, Amoen. Acad. 4. p. 173.; *ovis theatopyga*, *aries kirgificus*, Pall.; *schaaf*, *deren Schwaentz gar feist*, *Rauwolf*; *arahisches schaafe*, *Gefn.* Thierb.; *die hiesige schaafe*, Ost. Broad-tailed sheep. This kind is asserted to be the largest breed of sheep in the world; and, according to Dr. Pallas and others, is reared throughout all the temperate regions of Asia, from the frontiers of Europe to those of China, in the vast plains of Tartary. All the Nomade hordes of Asia, the Turcomans, Kirguise, Calmucks, and Mongul Tartars rear it; and indeed it constitutes their chief riches, the number they possess being enormous. The Persians also rear it in abundance, as likewise the Hottentots, as Kolben relates in his Travels to the Cape of Good Hope. Osbeck says, in his Journey to China, that the fat-tailed sheep is reared throughout that vast empire, and it occurs in most parts of Syria, Barbary, and Ethiopia. Pallas thinks there is sufficient evidence that it is more universally reared in different countries than any other kind. The flocks of all the Tartar hordes resemble each other in having a large yeel with muzzle, the upper jaw often projecting beyond the lower one, and by having long hanging ears; by the horns of the adult ram being large, spiral, wrinkled, and bent in a lunar form. The tails of these sheep become oftentimes so large and heavy, as to greatly incommode the animal in walking

walking or grazing; they grow to the weight of fifteen, twenty, or thirty pounds, and even, according to some accounts, they have been known to increase to the weight of fifty pounds each. The shepherds are, therefore, very frequently obliged to fasten behind the sheep a small board furnished with wheels on which the tail may rest, and the animal be in some degree relieved of the weight he would be otherwise obliged to bear. This kind is in great estimation, the fatty substance of the tail resembling marrow, and the fleece in some countries being of an exquisite fineness. Mr. Pennant remarks that both the broad and long-tailed varieties of this kind of sheep were known to the ancients, being mentioned by Aristotle and Pliny; the former speaking of the first, and the latter of the second; one says the tail was a cubit broad, and the other a cubit long.

8. *Bucharica*. ♀.—*Auriculis magnis pendulis, pulvulari adiposa minore*, Pallas xi. 78.—Bucharian sheep, with large pendulous ears, and small fatty cushions. From Dr. Pallas we learn that this kind of sheep is reared in immense flocks by the Bucharian Tartars, and it is also common in Persia and Syria. Pallas and Gmelin both regard it as a mixed or hybrid breed, between the long-tailed and fat-tailed varieties; the former believes they never attain the size of either of the parents. The head is like that of the Kirguise sheep; but the muzzle is sharper like that of the Indian sheep of Buffon; the body is rather smaller than that of the Kirguise sheep; the ears large and pendent; and they have a small uropygium or fat rump, like that of the Tartar sheep on the Jeniffy, especially when begotten by a Kirguise ram; but in general they have a tail, fat and broad at the base, with a long narrow appendage, which resembles the tail of the Tscherkessian sheep. The Bucharian Tartars have a very valuable traffic with the furs of the lambs of this variety, which are exquisitely fine and beautiful. The same variety is likewise raised in great numbers by the Persians; and it is suspected by some writers that this is also the variety known more generally by the name of *ovis macroceras*, an inhabitant of Syria, Palestine, and various countries of Africa.

9. *Longicauda*, ♂.—*Cauda longissima*, Gmel.; alterum genus, Raj.; *ovis arabica*, Jont.; *aries (ovis longicauda) laniger cauda longissima*, Briff.; *ovis doichura sive Tscherkessica*, Pall.; Schaaffe, O.ear.; ein ander arabisch schaff, Gefn. Thierb. Long-tailed-sheep. The long-tailed, or, as the natives of Russia and Tartary call it, the Tscherkessian sheep, is described as a handsome animal, with a noble air, in its native country and the south of Russia, resembling in its habits, horns, fleece, and length of tail, the Spanish, but more particularly the English sheep. Its head is well-proportioned, and of an elegant form; ears straight; horns large, even, rounded in the angles, tapering to a point, and bending inwards towards the back. The rams are seldom without horns, and the ewes have them often bent in a lunar form. The wool, though coarse, is without admixture of hair, which is perhaps but an accidental distinction, and promises to be much meliorated by crossing the breed, and rearing the animal with more care and skill. It is even known to become much finer without the assistance of art, merely from the influence of a temperate climate, as on mount Caucasus. The tail of the ram is covered with fine long wool like the Indian sheep described by Buffon, which trails on the ground so as to efface the prints made by the animal's feet on the sand, and it contains often twenty joints or vertebrae. In passing from the state of nature to that of servitude, it seems to have lost its native ferocity, together with the coarseness of its fleece. Dr. Pallas says, it is a

mild gentle animal, and is less degenerate in form from the argali, which he deems the parent species, than the *steatopyga*; but which on the other hand has retained much more of its native wildness than the Tscherkessian breed; perhaps because it is allowed to range with little restraint on the wide extended plains of Great Tartary. The Tscherkessian breed is reared in all the European regions of the Russian empire, situated on this side the river Occa, in the nearer Poland, and by the pastoral people of mount Caucasus, and is commonly of a white colour. The same variety, we find in Ruffel's Natural History of Aleppo, is reared under the name of Bedouin sheep by the Arabs, and in the western parts of Mauritania. In the latter a trifling difference is observable, in the length and thickness of the tail. Long-tailed sheep are likewise reared in Morocco, and which it is supposed belong to this variety, because they possess the distinguishing character, a long tail, although in other respects they are different. These have an ugly look; the head is covered entirely with hair; the ears are small, and pendulous; and the wool remarkably long. The inhabitants of Ukraine and Podoli carry on an extensive traffic with the skins of the Tscherkessian variety.

10. *Capeensis*. ♂.—*Ovis auriculis magnis pendulis, cauda magna ex adipo vix prominente*.—Cape sheep of Pennant. An awkwardly formed animal with large pendulous ears, covered entirely with coarse hair instead of wool. The tail, Dr. Shaw observes, is sometimes so enveloped in fat as to be scarcely visible, the parts on each side swelling out into a pair of naked hemispheres, of such a size as sometimes to weigh nearly forty pounds. The legs are rather long; the visage somewhat arched; and the horns of the male like those of the common sheep.

In the General Zoology, by Dr. Shaw, the *Ovis Strepiceros*, or Cretan sheep, which Linnæus and Gmelin deem a distinct species, is considered also as a variety of *Aries*. The principal varieties of the sheep, according to Dr. Shaw, are the following: Cretan sheep (*ovis Strepiceros*, Linn.); many horned sheep (*ovis polycerata*, Linn.); African sheep (*ovis guineensis*, Linn.); broad-tailed sheep (*ovis laticaudata*, Linn.); fat-rumped sheep (*ovis Steatopyga*); Spanish sheep (*ovis Hispanica*, Linn.); and hornless sheep (*ovis Anglica*, Linn.).

Thus far have naturalists endeavoured to trace and define from the parent species, the more remarkable varieties into which these useful animals appear to be divided; and if we have digressed too far from the conciseness of the Gmelinian order, by attending more fully than that writer to the collateral observations of Linnæus, of Pallas, and other distinguished naturalists, who have entered minutely into the same inquiry; on a subject of so much importance, it is at least excusable. In the present instance, it is incumbent only to ascertain the principal varieties, so far as the characters assigned to them may justify: to dwell on the intermediate variations into which these varieties have again degenerated is needless; by education or culture, the effects of climate, food, and crossing breeds, these are now extended beyond the ability of the naturalist to ascertain with accuracy; and it would at best but tend to obscure the subject, were we to enlarge upon them. To the agriculturist, or the practical farmer of this country in particular, the history of the first variety, and perhaps one or two more, is obviously useful; but to treat on those would alone extend this inquiry to undue limits. Nor does it with strict propriety fall under the article *Aries*; it is a subject that deserves the fullest investigation, and elucidation the most ample; and will be duly attended to in its proper article, sheep, or *ovis*. See SHEEP, and OVIS.

ARIES Kill, in *Geography*, a small creek which runs northerly into Mohawk river, two miles and a half west from Schoharic river in New York.

ARIES Moromorus, in *Zoology*, a name given to the Gmelinian *CAMELUS Arcuatus*, or Peru camel, in Neiremberg's Natural History. This creature is called the sheep of Peru, moutons, or moutons de Perou, by Feuille, Friezler, and other writers.

ARIETIS, in *Entomology*, a species of *LEPTURA*, in the Fauna Suecica, and *Sytlema Naturæ* of Linnaeus, *Histoire des Insectes* of Geoffroy, and *British Insects* of Donovan. Degeer arranges it with the *CERAMBYCES*, under the specific name of *quadrifasciatus*; Scopoli calls it *STENOCORUS arietis*; Fabricius makes it a *CALLIDIUM*; and Gmelin a *CERAMBYX* in his family of that name, (palpis clavatis, *CALLIDIA*).

This is a very common insect in England; and probably throughout the other parts of Europe is not less frequent. It is found in gardens, and is easily distinguished from other species of the same genus. The thorax is black; wing-cases black, with four yellow transverse bands; the second of which is arched and curved upwards; and the legs are ferruginous. Fabr. Gmel. &c.

ARIETIS, a species of *VESPA*, that inhabits South America. The colour is in general black; petiole of the abdomen, and the legs rufous. Fabricius.

ARIETTA, in *Musie*, the diminutive of *Aria*. The French have a very confused notion of the meaning of this term, and call by the name of *ariette* the capital song of a musical drama, and which the Italians term *l'aria d'abilita*, generally composed to display the powers of a principal performer, in point of execution. *Arietta*, every where but in France, has been always understood to imply a little short air, a *cavatina*. "Now we begin to emerge from barbarism (says M. Guinguiné) why do we continue to speak like barbarians?"

ARIETUM LEVATIO, in *Antiquity*, a kind of sportive exercise, probably the same with that which in later times is called, "running at the quintain."

ARIGÆUM, in *Ancient Geography*, a town of India, supposed by major Rennel to be Irjab, in the modern Cabul, in the route of Tamerlane, near the southern mountains. Alexander found it burnt and abandoned, according to Arrian.

ARIGENUS, the capital of the Viducassi, situate in the northern part of Gallia Lyonnensis. Ptolemy.

ARIGNA, in *Geography*, a place situated amidst valuable coal and iron mines in the county of Leitrim, Ireland, at which great iron works have been lately established. As soon as the completion of the royal canal opens a communication between Dublin and the Shannon, so as to afford an easy conveyance of the articles to market, great advantages are expected. Dr. Beaufort.

ARIGNANO, a town or village of Italy, in the duchy of Tuscany, on the river Arno, between Florence and Arezzo.

ARIGNAY, a town of France in the department of Upper Garonne, and chief place of a canton in the district of St. Gaudens, 5 leagues W. of Rieux, and 3 N.N.E. of St. Gaudens.

ARII, or **ARIANS**, in *Ancient Geography*, a denomination by which several people of Asia were distinguished. Thus, the *Arii* or *Agēioi*, were the inhabitants of *ARIA*, in the vicinity of the Sogdians, according to Herodotus: he also says that *Arii* or *Agēioi* was an appellation commonly given to the Medes.—*Arii* were a people placed by Ptolemy in Arabia Felix.

ARII, or **Arians**, were also a people of Germany, occupying the first rank, according to Tacitus, among those who were denominated *Lygians*. They were more valiant, and also more fierce, than most of the other Germans; and with their ferocity they blended a considerable degree of cunning. They wore black bucklers, painted their bodies, and made their attacks in the night.

ARILLUS, in *Botany*, the seed-coat of the permanent husk that invests the seed. Some have objected to this term, as improper; but Dr. Smith (Linn. Transf. vol. v. p. 265.) is of opinion, that it expresses the true nature of the tunic, to which it is applied, much better than the hypothetical one of nectarium, the erroneous one of capsule, or even the analogical denomination of corolla.

ARIM, in *Geography*, a town of Asia, in India, supposed by the eastern geographers to be at an equal distance from the columns of Hercules on the west, and those of Alexander to the east, and therefore used by them in reckoning the longitudes.

ARIMA, a town of Japan, in a country of the same name. N. lat. 31° 45'. E. long. 129° 24'. The strait of Arima lies between the small island of Nangayuma, and that of Ximco.

ARIMA, in *Ancient Geography*, a mountain of Cilicia, or of Lydia.

ARIMANIUS, or **AHRIMAN**, in the *Persian Theology*, denotes the devil or the principle of evil, which, as some say, co-existed from eternity with Ormuzd or Oromasdes, the principle of good; each of them possessing the powers of creation, but each disposed, by his unchangeable nature, to exercise them with different designs. Others say, that Ormuzd first subsisted alone, but being dissatisfied with a solitary existence, and with having no power to oppose him, Ahriman was produced. Perhaps these divinities were originally, like *MITHRAS*, merely human beings; the one, a good prince, who had distinguished himself by rendering important services, civil or military, to his countrymen: the other, a tyrant, who had been the cause of grievous public calamities. Arimanius was not called by the Persians a god, but an evil dæmon; and they always wrote his name with the letters inverted. This rude and vulgar superstition, which had no other object than individual men, was afterwards corrected by philosophy, and changed into the worship of two spiritual beings, one the author of good, the other of evil. The system which supposes two such principles in nature, seems to have been held by the Persian Magi, before the time of Zoroaster; but it does not appear, how far they supposed them dependent upon the supreme divinity. Zoroaster, however, certainly taught the doctrine of their inferiority to the first parent of all things. According to this system the principle of good, it is said, is eternally absorbed in light, and the principle of evil eternally buried in darkness. The wise benevolence of Ormuzd formed man capable of virtue, and amply provided for him the means of happiness. By his vigilant providence, the motion of the planets, the order of the seasons, and the temperate mixture of the elements, are preserved. But the malice of Ahriman has long since pierced *Ormuzd's egg*, or in other words, violated the harmony of his works. Since that fatal irruption, the good and evil are blended; the rankest poisons spring up amidst the most salutary plants; deluges, earthquakes, and conflagrations attest the conflict of nature; and the mind, as well as the habitations of man, is perpetually agitated with vice and misfortune. Ahriman's power, however, is subject to limitation and restraint. Ormuzd will ultimately triumph over the furious malice of his rival; and at that decisive period, Ahriman and his followers, disarmed

disarmed and subdued, will sink into their native darkness; and virtue will maintain the eternal peace and harmony of the universe. The modern PERSEES exalt the Ormisd into the first and omnipotent cause, whilst they degrade Ahriman into an inferior, but rebellious spirit. Their desire of pleasing the Mahometans, says Mr. Gibbon (Decl. and Fall of the Rom. Emp. vol. i. p. 322, 8vo.), may have contributed to refine their theological system. Plutarch. de Iside and Osiride, apud Oper. t. ii. p. 351. Hyde de Rel. vet. Perf. c. 11. 21. &c. See MAGI, and ZOROASTER.

ARIMANNI, in *Antiquity*, the denomination of a class of persons employed in agriculture in the middle ages, who were free men. Among the writers of the middle ages, they were called also *conditionales*, *originarii*, *tributales*, &c. They seem to have been persons who possessed some small allodial property of their own, and, besides that, cultivated some farms belonging to their more wealthy neighbours, for which they paid a fixed rent, and bound themselves likewise to perform several small services, such as ploughing a certain quantity of their landlord's ground, assisting him in harvest and vintage work, &c. It does not appear whether these Arimanni were removable at pleasure, or held their farms by lease for a certain number of years. The former, says Dr. Robertson (Hist. Ch. V. vol. i. p. 276, 8vo.), if we may judge from the genius and maxims of the age, seems to be most probable. These persons, however, were considered as free men in the most honourable sense of the word. They enjoyed all the privileges of that condition, and were even called to serve in war; an honour to which no slave was admitted. Nevertheless, though their condition was greatly superior to that of slaves, such was the spirit of tyranny which prevailed among the great proprietors of land, and so various their opportunities of oppressing those who were settled on their estates, and of rendering their condition intolerable, that many free men, in despair, renounced their liberty, and voluntarily surrendered themselves as slaves to their powerful masters, who might thus become more immediately interested to afford them protection, together with the means of subsisting themselves and their families.

ARIMANON, in *Ancient Geography*, a city of refuge beyond Jordan; probably the famous Ramoth in Gilcad. Josh. xxi. 38.

ARIMANON, in *Ornithology*, the name given by Buffon to that species of PSITTACUS, since called by Gmelin *taitanus*, and Otahaitan blue parakeet by Dr. Latham. See TAITIANUS.

ARIMANTIS, in *Ancient Geography*, a town of Africa, in the Pentapolis. Ptolemy.

ARIMARA, a town of Asia, in Syria, situate on the Euphrates. Ptolemy.

ARIMASPI, a people who inhabited the northern part of European Scythia, called Scythia Arimaspa, which lay eastward joining to Scythia, in Asia. They were so called, it is said, from the Scythian *Arima*, one, and *Spon*, eye; not because they had but one eye, as some of the ancients absurdly believed, but rather, as Bochart conjectures, because they were such excellent archers, at which exercise it is necessary to shut one eye; that the nick-name of *one-eyed* was given to them on that account. According to Diodorus, who places them in Asia, to the south of the Oxus, they were called *Evergetes*, because, in an expedition of Cyrus, when his army was so distressed with famine, that the soldiers were reduced to the necessity of eating their comrades, this people supplied them with 3000 carriages of provisions. Steph. Byz. ascribes the appellation to the kind treatment which they afforded to the Argonauts, when they travelled through their country.

ARIMATHÆA, or RAMATHA, a city of Palestine, VOL. II.

placed by Jerome between Lydda and Joppa; but M. D'Anville places it a little to the south-east of Lydda and Diopolis. Modern travellers speak of a city called Ramatha, between Jeppa and Jerusalem. The name Ramatha, whence Arimathæa is derived, signifies height; but this place, which lay west of Jerusalem, was very different from Ramathaim-Zophim, Samuel's country (1 Sam. i. 1.), which was north in the mountains of Ephraim, and was probably the same as Ramah, near Bethel, four leagues distant from Jerusalem. Arimathæa was the city of Joseph, the honourable counsellor, mentioned Luke, xxiii. 50. The ancient Arimathæa, says Volacy (Travels in Egypt and Syria, vol. ii. p. 333.), is now *Ramla*, which is one-third of a league to the southward of Lydda, or the present Loudd, and is in as ruinous a state as Loudd itself. Within its boundaries nothing was found but rubbish; and yet the aga of Gaza resides here in a serai, the floors and walls of which are tumbling down. He maintains about 100 horsemen, and as many Barbary soldiers, who are lodged in an old Christian church, the nave of which is used as a stable, and in an ancient kan, which is disputed with them by the scorpions. The adjacent country is planted with lofty olive trees, disposed in quincunxes, which are decaying. Amidst these plantations are every where found dry wells, mouldering cisterns, and large vaulted reservoirs, which prove that, in ancient times, this town must have been upwards of a league and a half in circumference: at present it scarcely contains 200 families. The manufacture of the place is soap, which is sent into Egypt, and the spinning of cotton, which is chiefly purchased by two French houses established there. The aga built here, in 1784, a windmill, completed after the plan and under the direction of a Venetian carpenter; and this is the only windmill observed by Volney in Syria or Egypt, though it is said to have been originally invented in these countries. The only remarkable antiquity at Ramla is the minaret of a ruined mosque, on the road to Yafa, which appears, by an Arabic inscription, to have been built by Saif-el-din, sultan of Egypt. In the adjacent plain between Ramla and Gaza, there is a number of villages, consisting of huts built of dried mud, which, like their inhabitants, exhibit every appearance of poverty and wretchedness. The only fuel is dung kneaded into cakes, and dried in the sun. The environs of these villages are sown, at the proper season, with grain and water melons; and the rest is a desert, abandoned to the Bedouin Arabs, who feed their flocks in it.

ARIMINUM, RIMINI, a town of Italy, in Umbria, on the coast of the Adriatic, at the mouth of a river of the same name, and south-east of a small river called Rubicon. Strabo (l. v.) ascribes its foundation to the Umbri, who inhabited the country before the Senones. The Romans, when they became masters of it, sent a colony thither A. U. 485., and a new colony was sent thither by Augustus. This is the first town of which Cæsar took possession, after passing the Rubicon. It is now in a state of great decay; but there are some monuments of antiquity that claim the attention of the curious traveller. In the market-place there is a kind of stone pedestal, with an inscription, declaring, that on it Cæsar had stood and harangued his army; but the authenticity of this is not ascertained to the satisfaction of antiquarians. The harbour is now choaked with sand; and the brick tower, which formerly served for a faro or light-house, is surrounded with gardens; but they still shew on the coast the spot where St. Anthony is said to have stood when he preached to the fishes. N. lat. 44° 8'. E. long. 13° 30'. Keyssler, vol. iii. p. 223. Moore's Travels, vol. i. p. 276. In the collection of Dr. Hunter there was a medal of bronze, which Dr. Coombe ascribed to this city.

ARINE, GIRAN, a town of Africa, in Mauritania Cæfariensis.

ARINGA, in *Ichthyology*, a name given by Paulus Jovius and others to the herring, *Clupea Harengus* of Linnæus.

ARINGIAN, in *Geography*, a town of the province of Tranfaxana, belonging to Sannarcand.

ARINTHOD, a town of France, in the department of Jura, and chief place of a canton in the diftrict of Lons-le-Saulnier, $2\frac{1}{2}$ leagues fouth of Orgelet. The place contains 1,315, and the canton 10,603 inhabitants: the territory includes 220 kilometres, and 47 communes.

ARINUS, in *Entomology*, a fpecies of *PAPILIO* (*Plib. urb.*), defcribed by Cramer and Fabricius. The wings are deftitute of tails, above and beneath black, with a fnowy white tranfverfe fpot on the firft pair; extremity of the abdomen fanguineous. Fabricius, Gmelin, &c.

ARIOGE, the name given by Cramer to the variety β , *Papilio Eubule* of Fabricius. See *EUBULE*.

ARIOLA, in *Geography*, a fmall town in the kingdom of Naples, in the Principato Ultra, with the title of a principality.

ARIOLATER, in *Entomology*, a fpecies of *LAMIA*, in the Fabrician Species Infectorum. It inhabits India. The thorax is fpinous, and lined; wing-cafes brown, with a femicircular white line. Fab. *Obf.* Gmelin, in his Syft. Nat. adopts this fpecific character; it belongs, in his arrangement, to the *Lamia* family, in the *Cerambyx* genus.

ARIOLATOR, is a fpecies of *ICHNEUMON* that inhabits South America. The thorax is armed with two fpines, and is of a rufous colour; the abdomen black, with four white ftrreaks. Fab. This is the *Ichneumon spinofus* of Degeer, and is thus characterized by Linnæus in the twelfth edit. Syft. Nat.: *Ichneumon* thorace ferrugineo bifpinofa, alis fafcis binis fufcis, abdomine fafcis quatuor albis. *Obf.* The two erect fpines on the pofterior part of the thorax are white; and the wings fafciated with brown.

ARIOLI, in *Antiquity*, a kind of prophets, or religious conjurers, who, by abominable prayers, and horrid facrifices at the altar of idols, procured answers to their queftions concerning future events. Ifid. Orig. l. viii. c. 9. Thefe are alfo called *barioli*, and their operation, *bariolation*. Sometimes they were denominated *arufpices*, or *harufpices*. The arioli were diftinguifhed by a flovenly drefs, diforderly and matted beards, hair, &c.

ARION, in *Biography*, a perfon of great celebrity both as a mufician and poet, was a native of Methymne in the ifle of Lesbos, and flourifhed about the year before Chrift 620. He is faid to have been the inventor of the dithyrambic meafure, and to have excelled in lyric poetry, which he fung to his lute. After having been treated with great refpect and kindnefs at the court of Periander, king of Corinth, he vifited Italy and Sicily, and acquired great wealth by the exercife of his profefion. Determining to return to Greece, he embarked, with all his effects, on board a Corinthian veffel; but the failors, allured by fuch a prize, confpired to throw him overboard. In the mean while, he requested permiffion to fung one funeral ftrain before his death; and having obtained leave, he flood upon the prow with his inftrument in his hand, chanted with a loud voice his fweeteft elegy, and then threw himfelf into the fea. A dolphin, as the fable fays, charmed with his mufic, fwam to him while floating on the waves, bore him on his back, and carried him fafely to Cape Tænarus, in Sparta, whence he returned to his patron Periander. The failors, imagining that he was dead, and confiding in their own fecurity, arrived at Corinth; and confounded by his appearance againft them, paid the penalty of their evil purpofe with their lives. Such is the ftory which antiquity has preferved; and the fable, whatever

might be its origin, fufficiently attests his reputation as a mufician. His life has been recorded by Herodotus, and alfo by Solinus, Plutarch, Aulus Gellius, and others. Nouv. Dict. Hiftor.

ARION, in *Entomology*, a fpecies of *PAPILIO* (*Plib. rur.*) that inhabits Europe. The wings are without tails; above brown, difk blue, with black fspots; beneath grey, with ocellated dots. Fabricius, Donov. &c. The male has a fingle black fspot on the anterior wings, and a row of marginal fspots on the pofterior ones; the female has about fix black fspots on the difk of the anterior pair.

ARJONA, in *Geography*, a fmall town of Spain, in Andaluſia, on the river Frio, between Jaen and Andujar.

ARIOSO, in *Mufic*, an adjective ufed adverbially, implies, according to Rouffeau, a kind of melody bordering on the majestic ftyle of a capital air.

ARIOSTI, ATTILIO, in *Biography*, a native of Bologna, was defigned for the priefthood, but devoted himfelf to the profefion of mufic, and became an eminent mufical compofer and performer. He exercifed this profefion at Bologna and Venice, and alfo in Germany, where in 1700 he compofed a Ballet, and an Opera called "Attis," for the electoral princefs of Brandenburg, to whom he was appointed "Maftro di capella." Having continued for fome years in Italy and Germany, and diftinguifhed himfelf by his compofition of operas and other pieces, and alfo by his performances on the violoncello, and viol d'amore, an inftrument either invented or much improved by himfelf; he came to England in 1716, and played on his new inftrument, the firft of the kind heard in this country. When the Royal Academy of Mufic was eftabliſhed in 1720, he was employed to compofe feveral operas; and he formed one of the celebrated mufical triumvirate of the time with Handel and Bononcini; but both Attilio and Bononcini were obliged to give way to the fuperior genius of Handel. The former, without much invention, is faid to have been a perfect harmonift, and to have treafured up much good mufic in his head. By way of relieving his neceffities, he published a book of cantatas by fubfcription, and left England; after which his hiftory is not known. Burney's Hift. Mufic, vol. iv.

ARIOSTO, LUDOVICO, a celebrated Italian poet, was born in 1474, at the caſtle of Reggio in Lombardy, and defcended of a family allied to the dukes of Ferrara. At an early age he manifefted his poetical genius by a drama on the fubject of Pyramus and Thisbe, which was acted by his brothers and fifters; and though his father for fome time endeavoured to prevail with him to ftudy the law, which he feems to have reluſtantly profecuted for fome years without making any great progrefs, he was at length allowed to indulge his own inclination. At his father's death, when he was 24 years of age, he found himfelf in embarrassed circumftances, and was almoft induced to abandon his favourite ftudies. But being invited to the court of Alphonfo duke of Ferrara, he became the particular favourite of the duke's brother, the cardinal Hippolito of Efte, and maintained his attachment to him, with fome occafional interruption, as long as he lived. Having recovered and much improved his early knowledge of the Latin language, Cardinal Bembo wifhed him to employ it in his compofitions rather than the Italian; but Ariofto declined it, alleging, "that he preferred being the firft of Italian writers, to being the fecond or third among the Latin ones;" and alfo adding, "that his genius was moft inclined to the former." After the death of Hippolito, he was patronized by his brother Alphonfo, who was much delighted with his converfation, and enabled by his bounty to build a

ffmall

small house at Ferrara, where he employed himself in those studies and compositions which made his name immortal. This retirement, in which he lived with the plainness and simplicity of a philosopher, and where he enjoyed ease and liberty, he preferred to any other situation which he might have obtained under the offered favour of Pope Leo X. and several distinguished princes and cardinals. When he was asked why he had not built his house in a more magnificent manner, and more suitable to the noble descriptions which he had given of sumptuous palaces, beautiful porticos, and pleasant fountains, in his *Orlando Furioso*, he replied, "that words were combined together with less expence than stones." Upon his door he inscribed the following verse:

"Parva, sed apta mihi, sed nulli obnoxia, sed non
Sordida, parva meo sed tamen ære domus."

Thus translated by Sir John Harrington in his "*Life of Ariosto*," p. 420:

"This house is small, but fit for me, but hurtful unto none,
But yet not sluttish, as you see, yet paid for with mine owne."

Ariosto was so attached to a plain and frugal mode of life, that he says of himself in one of his poems, "that he was a fit person to have lived in the world when acorns were the food of mankind." But, though he was fond of retirement, he enjoyed the friendship of the most eminent men of learning of his time, who highly esteemed him, and whom he mentions with great respect in the last canto of his "*Orlando Furioso*." However, he was chiefly attached by obligation and friendship to the house of Este; and the adulation he bestows upon it in several parts of his works would have subjected him to the charge of insincerity and fervility, if it had not been sanctioned by the general practice of his age and nation. For the glory of his country he was ardently solicitous; and he often laments the injury and disgrace which Italy suffered under the dominion of foreigners. In his general behaviour he was affable and condescending; and, on particular occasions, he manifested a becoming degree of spirit and resolution, even when he thought himself ill-treated by persons of the highest rank. His charity and integrity are said to have been exemplary: to his mother he was singularly dutiful and affectionate; and shewed her the greatest respect in her old age. The writers of his life record several instances of his attachment to the fair sex; and it is said, that he was privately married to his mistress *Alessandra*, by whom he had two illegitimate sons; but that he did not acknowledge her as his wife, for fear of losing some ecclesiastical benefices which were incompatible with a married state. His constitution was delicate and infirm; and, notwithstanding his temperance and general abstemiousness, his health was often interrupted. He bore his last sickness with uncommon resolution and serenity; affirming, "that he was willing to die on many accounts, and particularly because he found that the greatest divines were of opinion that we shall know one another in the other world;" and he observed to those who were with him, "that many of his friends were departed, whom he desired to visit, and that he thought every moment tedious till he gained that happiness." He died at Ferrara, on the 6th of July 1534, according to *Sanfovino*; and on the 8th of July 1533, according to Sir John Harrington; at the age of 59 years; and he was interred with singular tokens of respect in the church of the *Benedictine* monks, who, contrary to their custom, attended his funeral. An epitaph, written by himself, was inscribed upon his tomb. His death was regretted by all who knew him, and particularly by

the men of letters, who honoured his memory in Latin and Italian poems. Sir John Harrington closes his account of him in these words: "his learning, his good behaviour, his honesty, made him both beloved of all good men in his life, and bewailed of all honest men in his death; so as methinks, reading over his life, I could find in my heart to wish (saying for some very few things),

"Sic mihi contingat vivere, sicque mori."

The works of Ariosto, who, as Dryden says, with all his faults, must be acknowledged a great poet, are satires, comedies, sonnets, songs, small pieces of poetry, and his great heroic poem, called "*Orlando Furioso*," on the composition of which he bestowed his principal attention, and which manifests the distinguishing exertion of his poetical powers. The author began this poem when he was about 30 years of age; and whilst he was engaged in the composition of it, he rose sometimes at one or two o'clock in the morning, both at home and abroad, and continued to write as long as he found himself properly disposed. The poem itself was singularly popular at its first publication, even among the lowest class; and inspired a very extraordinary degree of enthusiasm. Such were the reputation and authority which Ariosto acquired by it, that he commanded respect among the most licentious and abandoned. To this purpose it is related, that when he was governor of a province in the Apennines, which was overrun with smugglers and banditti, his influence was sufficient to preserve for some time the tranquillity of the district over which he presided. Once, however, as he wandered in a fit of reverie to some distance from the fortrefs which he inhabited, he was surprised by a party of free-booters, to one of whom he was known as the author of "*Orlando*:" as soon as this information was communicated to the rest, they fell at his feet, conducted him to the castle; and, at parting, told him that they respected him as governor on account of his character as poet. To such a degree was Ariosto himself charmed with his own verse, and so much did he also excel in his manner of reading, that he was always disgusted if he heard his own writings repeated with an ill grace and accent. Accordingly, it is said, that, when he accidentally heard a potter singing a stanza of his "*Orlando*" in an incorrect and ungraceful manner, he was so incensed, that he rushed into his shop and broke several of the pots which were exposed to sale; when the potter expostulated with him for this unprovoked injury, Ariosto replied, "I indeed have broken half a dozen of your pots, which are not worth so many half-pence; and you have spoiled a stanza of mine, which is worth a considerable sum of gold." A similar tale has been told by *Plutarch* of *Philoxenus*, and applied also to *Camoëns*. The "*Orlando Furioso*," after ten years labour, was published at Ferrara in forty cantos, in 1516; and the author gave it complete, in forty-six cantos, in 1532. This poem has been very differently appreciated by different writers, from the time of its first publication to the present day. Whilst some have unduly extolled it, others have degraded it below its just rank. A French writer prefers it to the *Odyssey* of *Homer*, and Sir John Harrington compares it with the *Æneid* of *Virgil*; and in answer to the objection, that Ariosto wants art, and recedes from the example of *Homer* and the precepts of *Aristotle*, he observes, that what was proper in *Homer* at the time when he wrote, would now appear otherwise from the different circumstances of the age, and that with regard to the rules of *Aristotle*, he followed them very liberally. Some have preferred Ariosto to *Tasso*; whilst others have regarded the latter as much superior to the former, and have adopted the common saying, that "*Ariosto's*

ton b was in Tasso." The "Orlando Furioso," says a Biographer of approved judgment and taste (see Aikin's Gen. Biog.) "is a tissue of adventures in love and arms, slightly, and often not at all, connected by reference to the principal hero, and formed upon the fictitious manners of chivalry, with all its accompaniments of enchantments, transformations, and supernatural events of every kind, and not without a mixture of moral allegory: it has its tragic and comic scenes, its serious and burlesque; and the transitions from the one to the other are often immediate: thus, as a whole, nothing can be more wild, incongruous, and absurd; and it might be thought prostituting the dignity of epic poetry to bestow the name on his performance, or to put it in parallel with any of the great works of that class. Yet the inexhaustible invention, the boundless variety, the wonderful facility, and the profusion of real poetical beauties of the most different kind, have ever rendered it a most attractive piece; and as far as the ends of poetry are to excite admiration or pleasure, it certainly has attained them. Many even of the most cultivated critics are inclined to prefer its wild charms to the more regular and studied beauties of Tasso; and perhaps, in general opinion, it still stands as the first specimen of Italian heroic poetry. It is not free from the licentiousness of its age, and has some singular strokes of ridicule upon topics thought sacred. But by much the greater part can offend the delicacy of taste only, and not that of morals." Editions of this work have been numberless, and in various countries; and translations, and imitations, of part or the whole, in different languages, have been very frequent. Mr. Hoole's translation in English verse is much esteemed. Gen. Dict. Nouv. Dict. Histor.

ARIPO, in *Geography*, a fort in Asia, on the western side of the island of Ceylon, at the mouth of the river Ceyronda.

ARIS, a town of Polish Prussia, 74 miles south-fourth-east of Konigsberg.

ARIS, in *Ancient Geography*, a river of Greece, in Messenia, on the banks of which was built the city Thuria. Pausanias.

ARISABIUM, a town of India, on the other side of the Ganges. Ptolemy. Some have thought that this is the modern Ava.

ARISARUM, in *Botany*. See AMBROSINIA and ARUM.

ARISBA, in *Ancient Geography*, a town of Asia Minor, in the Troade, founded, says Steph. Byz., by the Mitylenians, but according to Photius, by the Milesians. It was a little south-east of Abydos; the Trojans took it before the ruin of their city, and preserved it as an ally. Alexander's army, after passing the Hellespont, encamped near this city, when he went to visit the ruins of Troy. This city struck imperial Greek medals in honour of Trajan.—Also, a town of the island of Lesbos, ruined by an earthquake, according to Pliny.—Also, a town of Greece in Bœotia.

ARISBUS, a river of Thrace which ran into the Hebrus. Strabo.

ARISCH, ABU, in *Geography*, a principality of Arabia, is properly a part of Tehama, and stretching along the Arabian gulf northward from Loheja, for the space of two degrees: like the rest of Tehama, it is every where dry and barren, except in parts that are watered by the rivers from the mountainous regions of Yemen. The remarkable places in this principality are the capital, known by the same name, which is encompassed with walls, and is the seat of the she-riff, twenty leagues north of Loheja, in N. lat. 16° 45'. and E. long. 42° 15'.; and the sea-port town of Gezan, a day's journey from Abu Arisch.

ARISE, LICENCE TO, in *Law*. See LICENCE.

ARISH, EL, in *Geography*, a town of Egypt, near a gulf of the Mediterranean to which it gives name, in the road from Catich to Gaza, 42 miles east-north-east of Catich, and 115 miles north-east of Suez. The town is situated three leagues from the sea, in a sandy country; and it is the last place where water, which can be drunk, is to be found, until you arrive at Salahua.

ARISH, a Persian long measure, containing 3197 English feet. Arbuth. Tab. 32.

The Persian *arish*, according to Mr. Greaves, is a long measure equal to 38 $\frac{3}{8}$ English inches.

ARISI, *rice*, an Indian word, which does not properly signify the plant which produces the rice, but the seed itself when cleansed from its husk, and rendered fit for use. The Indians call it arisi in that state; but in the husk, and upon the plant, they call it neilon.

ARISTA, in *Astronomy*, the same as SPICA VIRGINIS.

ARISTA, in *Botany*, a long needle-like beard, that grows out from the husk of corn, or grass; called also the *awn*.

ARISTA, in *Ichthyology*. See ATHERINA.

ARISTÆNETES, in *Biography*, a Greek pagan writer of the fourth century, was the friend of Libanius the rhetorician, and mentioned with respect by Ammianus Marcellinus. He perished in an earthquake that happened at Nicomedia in the year 358; and left two books of amatory epistles, written with terseness, elegance, and tenderness, and containing quotations from Plato, Lucian, Philostratus, and others. An edition of these epistles, with notes, was published by Mercer, at Paris, in 1595, 8vo. and reprinted in 1600 and 1610. Fabr. Bib. Græc. l. ii. § 10. t. 1. p. 432.

ARISTÆUM, in *Ancient Geography*, a town of Thrace, built on the summit of mount Hæmus, mentioned by Pliny, and Diodorus Siculus.

ARISTÆUS, in *Mythology*, the son of Apollo and the nymph Cyrene. He is said to have communicated to mankind the art of curdling milk, of managing bees and forming hives, and of cultivating olives. At Thebes, he married Autonoe the daughter of Cadmus, by whom he had a son, the unfortunate Aëtion, and a daughter named Macris. After the death of his son, he removed to the island of Cea, where he restrained the progress of a destructive plague, and erected an altar to Jupiter, and offered sacrifices both to him and to Canicula, or the dog-star; by whose favour, the Etesian winds were caused to blow, and to mitigate the heat that had been so fatal; and from this time, it is said, these winds have been regular every year for forty days. From Cea, he passed over to Sardinia, which he established, cultivated, and peopled; and thence he proceeded to Sicily, and imparted his secrets to the inhabitants of that island. One of his principal stations was Arcadia, whither, according to Pindar, he removed from the island of Cea; and in Arcadia he taught the inhabitants the method of stocking their hives with bees; and hence Virgil (*Georg.* l. iv. v. 283.), gives him the name of *Arcadius*. He afterwards went to Thrace, where Bacchus admitted him to the mysteries of the Orgies, and imparted to him a variety of important and useful discoveries. This fabled benefactor of mankind lived for some time near mount Hæmus, and then disappeared. His numerous services were recompensed both by Greeks and Barbarians, with divine honours; and the gods are said to have placed him among the stars, so that he became the Aquarius of the zodiac. He was sometimes called Agreus or Nominus. Huëtius has curiously discussed the resemblance of the fable of Aristæus, to the true history of Moses. Gen. Dict.

ARISTÆUS, in *Biography*, was also an eminent Geometrician, of Crotonia, who lived before Euclid, 330 B. C. Pappus (*Mathem. Collect. in præm. lib. vii.*) speaks of him as a writer on conics, respected by Euclid. This Aristæus was a disciple of Pythagoras, and succeeded him in the care of his school after his death, and continued to teach his doctrine for thirty-nine years. *Fabr. Bib. Græc. v. i. p. 496.*

ARISTANDER, a famous soothsayer, was a native of Telmessus, a city of Asia, whose inhabitants were said to be naturally endowed with the gift of divination. He was first employed in the court of Philip of Macedon, and when this monarch dreamed that the queen's womb was closed with a seal, on which was engraved the figure of a lion, he interpreted it as signifying, that the son of whom she was pregnant would have the heart of a lion. He accompanied Alexander in his Persian expedition, and in order to answer the purposes of policy or superstition, he performed several mysterious rites before the famous battle of Arbela. On this, and also on several other occasions, he predicted victory, and perhaps contributed to obtain it; it is said, that by the success of his art, he gained a very considerable degree of influence not only over the credulity of Alexander's soldiers, but over the mind of Alexander himself. *Q. Curtius, l. iv. c. 2, 6, 13, 15. l. v. c. 4. l. vii. c. 7. l. ix. c. 4. Plut. in Alex. Oper. t. i. p. 684. Arrian. l. i. c. 8. Gen. Dict.*

ARISTARCHUS, a celebrated Greek astronomer and philosopher, was born at Samos, and flourished about the middle of the third century before Christ. There has been a considerable difference of opinion about the precise time of Aristarchus; according to Blair's tables, he died at the age of eighty-one, in the first year of the 125th olympiad, or 280 years before Christ. Playfair, with Plutarch, who makes him contemporary with Cleanthes the successor of Zeno, refers him to the 129th olympiad, or 264 years before Christ. But the time in which he flourished may be more satisfactorily ascertained by the testimony of Ptolemy; who informs us, that he made an observation of the solstice in the fiftieth year of the first period of Calippus; and supposing with Blair, this period to commence in the year of Darius's death, or the 330th before Christ, the fiftieth year must have been the 280th before Christ. Aristarchus is well known to have maintained the modern opinion with regard to the motion of the earth round the sun, and its revolution about its own center or axis. To this purpose Archimedes says in his "Arenarius," (apud Opera, p. 449. ed. Rivalti.) that "Aristarchus the Samian laid down a certain hypothesis, from which it follows, that the world is much larger than we have stated; for he supposes that the fixed stars and the sun are immovable, and that the earth is carried round the sun in the circumference of a circle." The editor remarks, that in this passage Archimedes seems to intimate that Aristarchus was the first author of this opinion. Sextus Empiricus also (*Adv. Mathem. p. 410.*), in speaking of the hypothesis of the earth's motion, plainly insinuates that Aristarchus had been the first discoverer of it. Plutarch (*Quest. Plat. apud oper. t. ii. p. 1006.*) observes, that this opinion was taught hypothetically by Aristarchus, and dogmatically by Seleucus. There is also a passage of Plutarch (*De facie in orbe lunæ. Opera, t. ii. p. 933.*), which, with the correction proposed by Gassendus, and adopted by Menage, Fabricius, and Bayle, affords another decisive testimony to prove, that the opinion of the motion of the earth was held by Aristarchus. "Bring not an accusation against us, as Cleanthes thought the Greeks ought to have done against Aristarchus the Samian, as a disturber of the foundation of the world, because he endeavoured to explain the celestial appearances on the supposition

that the heavens stand still, and that the earth is carried in an oblique orbit, and at the same time revolves about its own axis." Aristarchus also taught, that the annual orbit of the earth is but merely as a point, compared with the distance of the fixed stars. His method of determining the distance of the sun from the earth, was by means of the dichotomy of the moon (see *DICHOTOMY*); and in this way he concluded, that it contained at least eighteen or twenty times that of the moon from the earth. He also found by methods, the detail of which would be too tedious, that the diameter of the moon bears a greater proportion to that of the earth than that of 43 to 108, but less than that of 19 to 60, so that the diameter of the moon, according to his statement, should be somewhat less than a third part of that of the earth. He also estimated the apparent diameter of the sun at the 720th part of the zodiac. Besides his astronomical discoveries, Aristarchus invented a peculiar kind of sun dial, mentioned by Vitruvius, *l. ix. c. 9.* The only work of this ancient astronomer now extant is a treatise "On the magnitudes and distances of the sun and moon;" first published by Vallus, at Venice, fol. in 1498; afterwards by Wallis, with his own notes, and Commandine's version, at Oxford, in 1683, 8vo.; and again in Wallis's works, vol. iii. A fragment of this work is introduced by Pappus in his "Coll. Mathem. l. vi. prop. 48. p. 135." Another work "On the mundane system," has been ascribed to him, but it is generally understood to be a spurious work, written by Roberval. *Gen. Dict. Montucla. Hist. Mathem. tom. i. p. 218. Fabr. Bib. Græc. l. iii. c. 5. § 14. t. 2. p. 89.*

ARISTARCHUS, a Greek grammarian, was a native of Samothrace, resided chiefly at Alexandria under Ptolemy Philometor, who intrusted him with the education of his son; and died in the first year of the 156th olympiad, or the 156th year before Christ. To Aristarchus the ancient commentators upon Homer attribute the division of the Iliad and Odyssey into books, according to the order and number of the Greek letters. He was a rigid critic, and exercised his talents in this way upon Homer, Pindar, Aratus, and other poets. Erasmus (*Adag.*) says, that it was his practice, in revising Homer, to mark those verses which he thought unworthy of him with an obelisk, and to condemn them as spurious, and to distinguish those which he thought particularly excellent with an asterisk. Cicero alludes to this practice in two familiar epistles, viz. *Ad. Fam. lib. iii. ep. 11. lib. ix. ep. 10. Oper. t. vii. p. 95. p. 290. ed. Olivet.* Cicero in his oration against Piso, (*Oper. t. vi. p. 213.*) uses the name of Aristarchus proverbially for a severe critic, when he tells Piso, that he is not an Aristarchus to affix a mark to a bad verse, but a Phalaris to assault the person of the poet. Thus also when he requests his friend Atticus to examine his orations with strictness, he calls him his Aristarchus, (*Ep. ad Att. l. i. ep. 14. t. viii. p. 61.*). Horace also suggests the same idea in his *Ars Poetica*, v. 445, &c.

"Vir bonus et prudens versus reprehendet inertes,
Culpabit duros, incomptis allinet atrum
Transverso calamo signum: ambitiosa recidet
Ornamenta; parum claris lucem dare coget:
Arguet ambiguum dictum? mutanda notabit:
Fiet Aristarchus: nec dicet, cur ego amicum
Offendam in nugis?"

"A friendly critic, when dull lines move slow
Or harshly rude, will his resentment show;
Will mark the blotted pages, and efface
What is not polish'd to its highest grace;
Will prune th' ambitious ornaments away,
And teach you on th' obscure to pour the day:

Will mark the doubtful phrase with hand severe,
Like Aristarchus, *rig'rous* and sincere:
Nor say, For trifles why should I displease
The man I love?"

Aristarchus was of a contentious temper, and had frequent disputes, at Pergamus, with Crates the grammarian. In the decline of life he was dropsical, and sought a remedy by starving himself to death, which happened in the isle of Cyprus. His school of grammarians and critics subsisted at Alexandria for several ages after his time, and produced no less than forty grammarians. Suidas says, that he wrote 800 books of commentaries; and therefore the apology which he is said to have made for not writing, was not very proper: "I cannot write what I would, and I will not write what I can." Suidas. Gen. Dict. The name of Aristarchus has given title to several books.

ARISTARCHUS, a disciple and companion of the apostle Paul, accompanied him to Ephesus, and here his life was in danger, and followed him in his subsequent travels. He was originally a Jew of Thessalonica. Acts xix. Col. iv. 10. Philem. 24.

ARISTEA, in *Botany*. Schreb. 1-12. Aiton, Kew. 3. p. 506. Clafs, *triandria monogynia*. Nat. Ord. *Enfatæ*—*Iridæ*, Juss. Gen. Car. Cal. spathe bivalve; Cor. petals six roundish, spreading nearly equal. Stam. filaments three, shorter than the petals, filiform; anthers oblong. Pist. germ inferior, triangular; style filiform, longer than the filaments, declinate; stigma funnel-form, gaping, fimbriated, somewhat triangular. Per. capsule oblong, three-cornered, three-ceiled, three-valved. Seeds very many.

Ess. Gen. Char. Pet. six; style declinate; stigma funnel-form, gaping; caps. inferior, with many seeds.

Species, 1. *A. cyanea*, grass-leaved Arillea. Curt. Bot. Mag. 458. *Isia africana*, Lin. Spec. Plant. p. 51. Miller, &c. *Morea africana*, Murr. Syst. Veg. This is a small fibrous rooted plant, rising to six or eight inches in height; leaves grass-shaped, two or three inches long, bent inwards, forming a tuft at the root; flowers blue, with a white eye. A native of the Cape of Good Hope, whence it was introduced into the Kew garden by Mr. Masson, in 1774.

ARISTEAS, in *Biography*, a pagan officer under Ptolemy Philadelphus, king of Egypt, about two hundred and fifty years before Christ. To this person is ascribed a Greek work, still extant, entitled "An history of the interpreters of scripture," or of that Greek translation of the Hebrew scripture which we call the Septuagint. The account which Aristeas gives is briefly as follows. Whilst Demetrius Phalereus, a noble Athenian, was employed by order of Ptolemy Philadelphus, in collecting books from all nations for the royal library at Alexandria, he was instructed to procure a copy of the sacred books of the Jews, and to engage proper persons from Jerusalem to translate them into Greek. As the king wished for information what was proper to be previously done towards facilitating the accomplishment of his object, Aristeas, (the pretended author of the history of the seventy-two interpreters.) Sosibeneus of Tarentum, and Andreas, three noblemen of the king's court, favourably inclined towards the Jews, recommended the release of the Jewish captives who were detained in Egypt, and whose whole number amounted to 198,000, before any message was dispatched to Jerusalem. Accordingly, a decree was issued for their release; and twenty drachmas each were paid out of the treasury for this purpose, so that the whole sum devoted to their redemption was not less than 660 talents. When this was done, Demetrius proposed that a letter should be written to Eleazar,

the high-priest at Jerusalem, requesting him to send from thence a true copy of the Hebrew original of the sacred books, and with it six persons out of each of the twelve tribes of Israel, to translate it into the Greek language. The bearers of this message were Aristeas and Andreas, who carried with them, as royal presents, several gifts for the temple, in money for sacrifices and other uses of the sanctuary, 100 talents; in utensils of silver, seventy talents; and in those of gold, fifty talents; and of precious stones, as ornaments to the utensils, five times the value of the gold. Upon their arrival at Jerusalem, they were received by the high-priest, and by the Jews, with great respect, and their request was immediately granted. Having received from the high-priest a true copy of the law of Moses, written in golden letters, and six elders out of every tribe, i. e. seventy-two in all, they returned to Alexandria. The seventy-two elders being introduced to the king, they were tried by seventy-two questions, proposed to them, to each one in their order; and as their answers were satisfactory, the king gave to each of them three talents, and sent them into the island of Pharos adjoining to Alexandria, in order to perform the work assigned them. In the course of seventy-two days they completed their business, and as they agreed in the version of each period by common conference together, Demetrius wrote it down; and when the whole had been read and approved in the king's presence, each of the translators received another present of three rich garments, two talents in gold, and a cup of gold of the weight of a talent; and they were all sent home into their own country. Such is the account of Aristeas, which he addressed in form of a letter to his brother Philocrates. A Latin version of this history by Pa'merius was prefixed to the Latin edition of the Bible, printed at Rome in 1471. It was also printed in Greek at Basil, in 1561, 8vo. and as an appendix to the edition of Josephus, at Cologne, in 1691, with notes by Fabricius; and another edition was published at Oxford, in 1692, 8vo. It is universally allowed even by those who dispute the genuineness of this history, that it is ancient; because it agrees with the accounts of the Septuagint, given by Josephus and Eusebius, which appear to have been borrowed from Arilleas; and some modern writers have concurred with these and other ancient writers in admitting the truth of the narrative. But those who have taken great pains in examining this subject, have produced a conviction that now pretty generally obtains, that the tradition relating to the appointment of seventy-two interpreters by Ptolemy Philadelphus, for the purpose of translating the Hebrew scriptures into Greek, is entitled to no credit; and that the story was invented by the Jews of Alexandria, in order to give importance and authority to the translation, which they had been under a necessity of making, after Greek had become their common language. The work ascribed to Aristeas, a pagan officer in the court of Ptolemy, was probably written by some Hellenist Jew at Alexandria, not less than 200 years after the reign of Ptolemy Philadelphus; in proof of which it is alleged, that Alexander Polyhistor, who wrote about that time, mentions a history of the Jews by Aristeas. Hody (Bibl. Text. Orig. Oxon. 1705. fol.), Van Dale (Dissert. supr. Arist. de Septuag. Amst. 1704, 4to.), F. Simon (Crit. Hist. Vet. Test. l. ii. c. 2.), Dnpin (Proleg. ad Bibl. l. i. c. 6. § 2, 3.), and Prideaux (Conn. p. ii. b. 1. vol. iii. p. 49.) Archbishop Usher (Syntagma de Septuag. Interpret. verf.), Morinus (Exercit. Biblicæ), Walton (Prolegomena to the Polyglot Bible, c. 9.), Vossius (de LXX. Interpret.), and many others, concur in rejecting the history of Aristeas, as a fiction; and they have urged a variety

of objections, that seem to be unanswerable, against its authenticity. Although there was in the reign of Ptolemy Philadelphus a Greek translation, the narrative of Aivleas was written at a time when the Jews were much given to religious romances; and whilst the author pretends to be a heathen Greek, he every where speaks as a Jew. He makes Ptolemy advance an incredible sum for redeeming captives and obtaining this version; a sum which Prideaux estimates at nearly two millions sterling, which may be reckoned above twenty times as much as the whole library was worth. Besides, the questions proposed to the seventy-two interpreters, and their extemporary answers, carry very much the air of a fiction. The representation of seventy-two elders being sent from Jerusalem to Alexandria, and six being chosen out of every tribe, has the appearance of a Jewish fiction, as it concerns the Jewish sanhedrim, and the twelve tribes, of which a heathen Greek must probably have been ignorant. Besides, this is said to have been transacted by Demetrius Phalereus, who was banished, or poisoned, or dead, at the time when this version was made. Nor is it probable that six elders of every tribe in Palestine could have been found so well skilled in both languages as to make an exact version from the Hebrew into the Greek. Moreover, why should seventy-two be sent, when seven would have been sufficient for the work, and such a number might have been more easily obtained. Gen. Dict. Fabr. Bibl. Græc. lib. iii. c. 12. § 2. t. ii. p. 317.

ARISTELLA, in *Botany*. See STIPA.

ARISTERA, in *Ancient Geography*, an island south-east of the peninsula of Argolis.

ARISTERIA, a town of Syria, in the Cyrrhestic territory. Ptolemy.

ARISTIDA, in *Botany*, an exotic grass (from *arista*, an awn or beard). Lin. g. 94. Schreb. 125. Class, *triandria digynia*. Nat. Order, *Gramineæ*. Gen. Char. *Cal.* glume one-flowered, bivalve; valves linear-subulate, membranaceous, unequal. *Cor.* glume bivalve, thicker than the calyx; outer valve linear, converging longitudinally, hirsute at the base, terminated by three awns subequal, patulous; inner valve lanceolate, sharp, very short, wrapped within the outer valve; nectary, two-leaved; leaflets, lanceolate, obtuse. *Stam.* filaments capillary; anthers oblong. *Pist.* germ turbinate; styles capillary; stigmas, villose. *Per.* none; glume converging, involving, gaping. *Seed*, one, filiform, the length of the corolla, naked.

Species, 1. *A. adscensionis*. Browne, jam. 135, 1. "Panicle branching, spike scattered, corollas one-valved;" culms in tufts, one or two feet high, decumbent, jointed, simple; branches of the panicle pressed close, subdivided, upright; florets on short pedicles, narrow, brown; awn three-parted at the base; anthers dark purple. This species, according to Linnæus, has the habit of the *festuca ovina*. It is a native of the isle of Ascension, and of Jamaica, where it is called the bearded grass. 2. *A. americana*. Swartz. obs. 41. t. 2. f. 2. Browne, jam. 135, f. 2. "Panicle simple, corollas two-valved, one with dorsal, the other with terminating awns;" culm half a foot high, jointed, subdivided; leaves linear, stiff, even; panicle with simple alternate spreading branches; florets mostly pointing one way, approximated; rachis compressed, somewhat flexuose. Dr. Browne calls this the smaller bearded grass, a native of Jamaica. 3. *A. plumosa*, "panicked, the middle awn longest and woolly, culms villose." The woolly horns give this species the appearance of *stipa pennata*, but the panicle is more compound, all the parts smaller, and the culm villose; the awn is also naked towards the base, where it has two bris-

les or little awns, which are opposite, short, spreading. We are informed by Linnæus, that this species was found in America, by Schreber. 4. *A. arundinacea*, "panicked, corollas two-valved, middle awn longer, smooth;" culms four feet high; leaves rolled inwards, narrow, even, striated; panicle oblong, hoary; outer valve of the corolla awned at the tip; awn length of the flower, naked, and at its base, a minute awn scarcely visible. Found in the East Indies, by Koenig. 5. *A. gigantea*, "panicle elongated, loose, one-ranked; calyces one-flowered; awns of the corolla subequal, straight;" culm lofty, branched, smooth; panicles about eight inches long, terminal; calyx very smooth, unequal, bluish; corolla smooth, with equal short awns, almost naked. Found on the island of Teneriffe, by Masson. 6. *A. hystrix*. Pluk. Alm. 191. f. 3. "Panicle divaricated, very spreading; flowers simple, smooth, awns straight, divaricated;" culm creeping, stoloniferous, smooth, very tough, leafy, short; leaves convoluted; panicle terminating, large; peduncles and pedicels binate; rachis angular; flowers filiform, oblong; calyx one-flowered; valves unequal; corolla longer than the calyx, convoluted, terminated by three equal straight spreading awns. Observed in Malabar by Koenig.

ARISTIDES, surnamed *the Just*, in *Biography*, the son of Lyfimachus, an illustrious Athenian, was distinguished for valour and ability, and peculiarly eminent for justice, magnanimous self-denial, and virtuous patriotism, disregarding his own private interest or power, where these might interfere with the welfare of his country. From his early youth he manifested a firm and steady temper, and a disdain of meanness and dissimulation. In the course of his diligent application to study, he betimes directed his attention to the subjects of government. Accustomed to admire the laws of Lycurgus, he preferred an oligarchy to the unbounded democracy that prevailed at Athens, to which his early and persevering antagonist Themistocles was ardently attached. Hence arose that competition between them, which displayed itself on various occasions, in the progress of their advancement to public offices. Aristides engaged in the service of his country from the purest principles of patriotism; and his character was held in such general estimation, that when the following verses of Æschylus, describing Amphiarus, were once recited in the theatre,—

"To be, and not to seem, is this man's maxim;
His mind reposes on its conscious worth,
And wants no other praise,"

the attention of the whole audience was directed to Aristides, as the person to whom this description might with the utmost propriety be applied. Aristides and Themistocles were so much the champions of opposite parties in the Athenian state, that their mutual competition led them to counteract one another even in measures that were just and useful. Aristides, however, could not pursue this line of conduct without self-reproach; and having, on a particular occasion, refused a proposal of Themistocles, which he thought right in itself and conducive to the public good, he exclaimed, as he came out of the assembly in which the measure had been debated, "The affairs of the Athenians will never prosper, till they throw both of us into the *barathrum*," that is, the dungeon for condemned criminals. In the office of public treasurer, he convicted Themistocles and others with whom he was connected, of peculation; and thus he excited a party against himself, which accused him of having misapplied the public money; and he was cleared only by the interposition of the court of Areopagus. When he was again invested with the same public trust, he allowed the persons who were concerned

cerned with him to act fraudulently without controul, but at the same time kept a secret account against them. His conduct was universally applauded, and it was the general wish that he might be continued in office. However, when they were proceeding to elect him, he gave them a severe rebuke, and told them, "that while he had served them faithfully, he was the object of their displeasure and calumny; but when he had violated his trust, he was applauded, as an excellent citizen." He then exposed the frauds, and all parties were ashamed of their conduct.

The first public display of his generous and patriotic character was when Darius sent the Persian host to invade Attica. The republican equality of the Athenian democracy extending to military institutions, their army was commanded by ten generals, each of whom had the supreme direction for one day in their respective turn. Aristides, one of the ten, perceived that a vicissitude of command must interrupt unity of design, and prevent a regular system and steady plan of military operations. The ablest of the generals he well knew to be Miltiades; and he was aware that it was expedient for the country, in time of pressing emergency, to be guided by its greatest ability. The day approaching when it belonged to him to assume the command, he generously yielded his authority to the approved valour and experience of Miltiades. The other generals followed this magnanimous example, sacrificing the dictates of private ambition to the interest and glory of their country; and the commander in chief thus enjoyed an opportunity of exerting, uncontrouled, the utmost vigour of his genius.

After the defeat of the Persians in the famous battle of Marathon, in the year before Christ 490, Aristides was entrusted with the care of the spoils, which he faithfully brought to the public account, without reserving any thing to himself. The following year he was archon or chief magistrate, and he continued to watch the welfare and interests of his country. Formed in such schools of moral and political knowledge as then flourished at Athens, he had learned to prefer glory to pleasure, the interest of his country to his own personal renown, and the dictates of justice and humanity even to the interests of his country. His ambition was rather to deserve, than to acquire, the admiration of his fellow-citizens; and while he enjoyed the inward satisfaction of conscious rectitude, he was little anxious about the external rewards of splendid actions. Earnest to promote beneficence, he did not court popularity, but his conduct, without seeking the favour of the multitude, commanded their esteem and respect. His opinion gave law to the courts of justice, or rather such was the effect of his equity and discernment, that he alone became sovereign umpire in Athens. In all important differences he was chosen arbitrator; and the ordinary judges were deprived of the dignity and advantages formerly resulting from their office. The Athenian magistrates were extremely displeas'd with an authority which had in a great degree superseded their jurisdiction. But the most formidable foe of Aristides was Themistocles; pre-eminent in genius that exerted itself in every department of public conduct, and excelling in arms, in policy, in eloquence, he secured a certain path to popularity. The affability of his manners, the magnificence of his entertainments, and profusion of his gifts, confirmed among the populace the impression of his talents and qualifications. Themistocles beheld with jealousy the influence acquired by the stern integrity of Aristides, and being himself so much better calculated for winning the affections of the multitude, succeeded in rendering the upright patriot obnoxious to the people. Aristides trusting to the innocence

and integrity of his own heart, disdained to employ any unworthy means, either for gaining the favour, or for averting the resentment, of the multitude. The contest, therefore, ended in his banishment for ten years, by the ostracism, by which the majority of the Athenian assembly might expel any citizen, however inoffensive or meritorious had been his past conduct, who, by his present power and greatness, seemed capable of disturbing the equality of republican government. Among those who voted against him on this occasion, one person was a rustic citizen, who, unable to write his name on the shell by which his concurrence in the sentence was signified, accidentally met with Aristides, and requested him to inscribe his name. The patriot asked him, "Did Aristides ever injure you?" the voter replied, "I do not so much as know him; but I am disgusted with everywhere hearing him called 'the Just.'" Aristides took the shell, wrote his own name upon it, and returned it to the voter. Upon his leaving Athens, he lifted his hands towards heaven, and prayed that the Athenians might never be compelled to remember Aristides.

While Aristides was in exile, Xerxes had brought to a conclusion his immense preparations for the invasion of Greece. But when the Persian armament endangered his country, he sacrificed all resentment to patriotism, joined his countrymen, who lamented his absence and wished his return, and at Salamis performed important services. Some time after the victory at Salamis, in the year before Christ 480, to which his concurrence with Themistocles greatly contributed, this commander informed the Athenians that he had conceived a project of great advantage to the state, but which he could not safely communicate to the public. The people directed him to disclose it to Aristides. The object of this scheme was the destruction of the whole confederate fleet of Greece, their own ships excepted, which would render Athens sole mistress of the sea. Aristides reported his opinion, that the project of Themistocles was eminently advantageous, but that nothing could be more unjust; and this determined them against acquiescing in it.

Mardonius having attempted to induce the Athenians to submission, Aristides, now chief annual magistrate, inspired and invigorated his gallant countrymen to persevere in resistance, and in the following summer commanded the Athenian troops in the battle of Platæa, which entirely defeated the armament of Xerxes. When Athens was rebuilt, Aristides was active in promoting a popular decree, which gave to all the citizens a share in the government, and enjoined that the archons should be chosen out of the whole body. The virtues of Aristides were now celebrated throughout Greece; and the finances of the confederates were committed to his management. This important office he executed with such skill and fidelity, as very greatly improved the public resources. The placability of his disposition was eminently displayed in his conduct towards his inveterate antagonist, Themistocles; for when he had incurred the displeasure of the ruling party, Aristides declined concurrence in the capital prosecution of him; and when Themistocles was banished, he was so far from triumphing on occasion of his fall, that he ever afterwards spoke of him with a greater degree of respect. After having contributed so momentously to the good of Athens and of Greece, Aristides died of old age, about 467 years before Christ, either in Pontus, or at Athens, universally regretted by the affectionate admiration of his country. He, who had long managed the common treasury of Greece, left not a sufficient sum to defray the expence of his funeral. His son Lyimachus received a present of three hundred pounds from

the public, to enable him to pursue and finish his education. His daughters were maintained and portioned at the expence of the treasury. Plut. in vit. Arist. Oper. t. 1. p. 315, &c. Anc. Un. Hist. vol. v. p. 214—246. Travels of Anacharsis, vol. 1.

ARISTIDES, *Zelius*, a celebrated sophist, was born at Adriani or Adrianothera, a city of Mysia, in Bithynia, and flourished about the year 176, under the reigns of Antoninus Pius, Aurelius, and Commodus. He was a disciple of Polemon the rhetorician of Smyrna, of Herodes at Athens, and of Aristocles at Pergamus, acquired great reputation as an orator, and has left several orations, which appear to have been composed with peculiar attention, and abound with many excellent moral sentiments. The subjects were laudatory, in praise of the heathen divinities, of illustrious men, of great cities and states, &c.; gratulatory, on the restoration of Smyrna after an earthquake; suasive, to persuade the Athenians to aid the Spartans and Thebans, to induce the inhabitants of Smyrna to abolish licentious comedies, to recommend mutual harmony to the states of Asia, &c.; apologetic, in defence of Pericles, Miltiades, Cimon, and Themistocles, and also in vindication of himself from the charge of vanity, &c. From several of these orations it appears, that Aristides was credulous and superstitious, and rigidly devoted to the worship of the gods, particularly Esculapius, to whom he conceived himself much indebted for hints, communicated in his dreams, and conducive to his health. In one of his orations he expresses his displeasure against some sophists, whom he compares with christians, as Dr. Lardner supposes; and whom he calls the wicked or atheistical people of Palestine, because they did not worship the established deities of the Greeks and Romans. On another occasion he undesignedly pays a tribute of respect to the liberal disposition of the christians; for in an oration or epistle, written A. D. 178, congratulating the people of Smyrna upon their restoration after the destructive earthquake of 177, he celebrates not only the liberality of the emperors, but likewise the generous compassion of many others in the cities of Asia, among whom M. Tillemont reasonably imagines there were several christians. The people of Smyrna, in gratitude for the interest which he took in their calamity, and re-establishment of their city, for his pathetic representation of their circumstances which moved the compassion of the emperor Antoninus, and induced him to issue an order for restoring the city, honoured Aristides as the founder of their new city, and erected in their forum a brass statue to his memory. An instance of the vanity of this orator is mentioned by Philostratus (de vit. Sophist. l. 2. c. 9.); for, when Marcus Aurelius came to Smyrna, Aristides neglected, for three days, to pay his respects to the emperor. When at length he visited him, the emperor asked him, "How it had happened that he had so long delayed his visit?" "I was employed (he replied) in a work on which my mind was so intensely occupied, that I could not divert my attention from it." The emperor, pleased with his ingenuousness and his application, requested Aristides to appoint a time when he might hear him declaim. "Let it be to-morrow, if you please," said the orator; "but I must desire my friends to be present, and that they may be permitted to applaud, and clap their hands with all their might." The emperor smiling, told him, "that would depend upon himself." In the orations of Aristides there are many passages, which not only shew that he was a fine writer and good speaker, but an advocate for what he imagined to be truth and virtue. If he says, he had rather be a fine speaker than be Darius the son of Hytaspes, he joins with it a softer and virtuous life. And again, in another place, where

he expresses his superior value for learning and eloquence above all things, he says; "nor can he be so stupid as to despise glory if it comes to his share, and so far as it may flow from fine speaking, and a life of virtue suited to his discourses; for he did not desire to obtain it by other means." "A character of such eminence," says Lardner, "must have been an ornament to the popular religion and its rights; and the charms of eloquence in his hymns to the gods, and in his other orations, cannot but have had powerful attractions."

Among the works of Aristides, are found an epistle "On the Causes of the Increase of the Nile," in which he sets aside the common explanations of this phenomenon, and ascribes it wholly to the immediate power and providence of God; and an excellent treatise "On popular and simple Diction," exemplified from Demolthenes and Xenophon; which latter piece was published by Aldus, among the Greek rhetoricians, at Venice, in 1508. The oration of Aristides in praise of Athens, intitled "Panathenaica," written in imitation of Isocrates, is annexed to H. Stephens's edition of Isocrates, published in 1593. The entire works of this orator were published in Greek, at Florence, in 1517, folio; or in Greek and Latin, in three vols. 12mo., by P. Stephens, in 1604; at Upsal by Norman, in 1677; and by Jeb, in two volumes 4to., at Oxford, in 1722. Philostrat. de vit. Sophist. Suidas. Lardner's Works, vol. viii. p. 81—88. Fabr. Bib. Græc. l. iv. c. 30. § 4, 5. t. iv. p. 373, &c.

ARISTIDES, a painter of Thebes, was cotemporary with Apelles, about the year 334 before Christ, and distinguished for force and felicity of expression. He is said to have been the first who painted *mind*, and expressed the affections and passions. One of his subjects was the representation of the destruction of a town, and described by Pliny. Among other scenes of horror, a child was painted clinging to the breast of its wounded mother, who feared that after she was dead the child should suck blood instead of milk. This piece was carried by Alexander to Pella in Macedon. The Bacchus and Ariadne of this master was part of the plunder of Corinth; and after it had been bought by Attalus, king of Pergamus, at a very high price, it was reserved by Mummius for the temple of Ceres at Rome. For another piece Attalus is said to have given one hundred talents. Aristides's old man with a lyre teaching a boy to play, was fixed in the Capitol. His Sick Man was much admired. Pliny, H. Nat. l. xxxv.

ARISTIDES, an eloquent Athenian philosopher, and a convert to Christianity, flourished about the year 126; and retaining the habit of his former profession, presented to the emperor Adrian an apology for the Christians, which was extant in Jerom's time, and which he represents as a monument with the learned of his ingenuity. This apology was imitated by Justin in the book which he presented to Antoninus Pius, his sons, and the Roman senate. It is to be regretted that no fragment of this eminent Christian apologist's composition now remains. Euseb. H. E. l. iv. c. 3. Hieron. ad. Magn. ep. 84. Lardner's Works, vol. ii. p. 290.

ARISTIDES *Quintilianus*, author of the most ample and, in many instances, satisfactory treatise among the seven Greek writers on music published by Meibomius. He flourished after Cicero, and before Ptolemy; which is all the information that can be obtained concerning the period of his existence. With many wild and fanciful notions about musical effects, his doctrines often breathe taste and feeling, but the taste and feeling of an enthusiast. His moral distinctions of melopœia are as curious and fanciful as those which the Arabs assign to the strings of their lute. (See

ARABIAN *Musical*.) He allows of three modes, τριτοί, or styles of melopœia; the *dithyrambic*, or bacchanalian; the *ionic* consecrated to Apollo; and the *tragic*: acquainting us that the first of these modes employed the strings or sounds in the middle of the great system; the second, those at the top; and the third, those at the bottom.

“These modes had other subaltern modes that were dependent on them; such as the *erotic* or amorous, the *conic*, and the *encomiastic* used in panegyrics. All these being thought proper to excite or calm certain passions, were by our author imagined to have had great influence upon the manners, ἤθη; and with respect to this influence, melopœia was divided into three kinds: first, the *syllabic*, or that which inspired the soft and tender passions, as well as the plaintive, or, as the term implies, such as affect and penetrate the heart; secondly, the *diastolic*, or that which was capable of exhilarating, by kindling joy, or inspiring courage, magnanimity, and sublime sentiments; thirdly, the *hepsychallic*, which holds the mean between the other two, that is, which could restore the mind to a state of tranquillity and moderation.

“These imaginations are evidently drawn from the dreams of Pythagoras. Iamblicus, in his life of that philosopher, tells us, that he had invented certain musical airs, with which, by a happy mixture of genera, he could at his pleasure govern the passions of his scholars, and awaken terror, anger, melancholy, compassion, emulation, fear, and desires of all kinds, as well as stimulate appetite, pride, caprice, and vehemence; guiding such affections according to virtue, with suitable melodies, as with so many salutary and healing medicines.

“Aristides Quintilianus, however, defines the three genera in a manner more consonant to modern ideas and feelings than any of the other Greek writers.

“The *Diatonic* is the most natural, because all who have ears, though uninstructed with music, are capable of singing it.

“The *Chromatic* is more artificial, for it can only be sung by such as are adepts in music.

“The *Enharmonic* is the most refined and difficult of all, and has been received and practised only by the greatest artists.” Burney’s Hist. of Mus. vol. i.

ARISTIPPUS, founder of the Cyrenaic sect, was a native of Cyrene in Africa, and flourished about the first year of the 97th olympiad, or the 392d year before Christ. During his attendance at the Olympic games, he heard of the fame of Socrates, and immediately went to reside at Athens, that he might become his disciple. After his introduction to the school of this great master of wisdom, he was for some time esteemed, on account of his genius and improvement, one of its chief ornaments; but his fondness for effeminate and luxurious indulgence gave great offence to Socrates and his friends. Of this propensity on the part of Aristippus, and his master’s desire to correct it, we have a beautiful illustration in a dialogue preserved by Xenophon, Mem. l. ii. Involved in expences which his patrimony could not defray, he set up a school of Rhetoric, and he is remarked to have been the first disciple of the Socratic school who took money for teaching. With a view, probably, of diverting or of silencing the reproofs of Socrates, he sent him a present of 20 minæ, or about 64*l.*; but Socrates refused the present, alleging that his demon forbade him to receive it. At length the freedom of his manners alienated him from Socrates, and obliged him to leave Athens.

Devoted to a life of pleasure, Aristippus visited the island of Ægina, and there met with the celebrated Lais,

whom he accompanied to Corinth. In this voyage, he was terrified by a storm, and one of the crew observing that he was somewhat disconcerted, asked him, “Why are you philosophers afraid, when we illiterate seamen fear nothing?” “Because,” replied Aristippus, “we have more to lose.” In his way from Corinth to Asia, he was shipwrecked on the island of Rhodes; and accidentally perceiving a geometrical anagram on the sand, he exclaimed to his companions, “take courage, I see the footsteps of men.” When they arrived at the principal town in the island, he procured by his address accommodation for himself and his fellow-travellers, thus confirming one of his own aphorisms, “If you ask what advantage a man of learning hath above one that is illiterate, send them together among strangers, and you will see.” After some interval, Aristippus repaired to the court of Dionysius, tyrant of Sicily. When he first came to Syracuse, he was asked by Dionysius, “Why he visited his court?” To which he replied, “to give what I have, and to receive what I have not.” By the versatility of his disposition, and suppleness of the system which he had adopted, as well as by the politeness of his manners, he accommodated himself to every situation, verifying the maxim of the poet:

“Omnis Aristippus decuit color, et status, et res—”

“Yet Aristippus every dress became,
In all offices, in every state the fame.”

Hor. ep. i. 17. 23.

Whilst he ridiculed the singularities which were affected by other philosophers, particularly the stately gravity of Plato, and the rigid abstinence of Diogenes, he complied with the requisition of Dionysius, which enjoined all the guests at a public festival to appear in purple robes; whilst Plato refused, he adorned himself with a rich and splendid dress, and conversed and danced with the ease and grace of a courtier. By these flexible and captivating manners, he conciliated the regard of the Sicilian tyrant, and gained a command of the royal favours. Thus distinguished, he became the object of envy to his brethren; and this circumstance will account for many of those tales that have been circulated to the disadvantage of this philosopher both by ancient and modern writers. However it is impossible wholly to exculpate him from the charge of libertinism. The reason of Aristippus’s leaving Syracuse is not known, nor is it certain whither he removed. Æschines, who remained in Sicily till after the exile of Dionysius, on his return to Athens, found Aristippus teaching in the city, probably about the year 366 before Christ; and it is pretty certain that he and the rest of the philosophers left Syracuse before the expulsion of the tyrant. But whether he ever returned to his own country, and also when and how he died, are circumstances concerning which we have no certain information.

Aristippus was, without doubt, the man of pleasure in practice, as well as the preceptor of pleasure by profession. And yet, though he deviated from the strictness of Socratic morals both in his principles and his conduct, he must be allowed the credit of elegant manners, a thirst after knowledge, ready wit, and an ingenuous temper. The manner in which he became re-united to his friend Æschines, who had offended him, affords an amiable illustration of the latter quality. In the midst of a dispute which was becoming violent, “Let us give over,” said he, “and be friends, before we make ourselves the talk of servants; we have quarrelled, it is true, but I, as your senior, have a right to claim the precedency in the reconciliation.” Æschines acquiesced, and acknowledged his superior merit. The following repartees, selected from a great number attributed to Aristippus, deserve to be recorded. Polyxenus, a friend of
Aristippus,

Aristippus, happened to call upon him when preparations were making for a sumptuous entertainment, and began a tedious discourse against luxury: Aristippus, tired of the harangue, invited Polyxenus to stay and sup with him, and he accepted the invitation. "I perceive then," says Aristippus, "it is not the luxury of my table that offends you, but the expence." When he was asked, "what he had gained by philosophy?" he replied, "a capacity of conversing, without embarrassment, with all classes of men." A wealthy citizen complaining that Aristippus, in requiring 500 drachmas for the instruction of his son, had demanded as much as would purchase a slave: "purchase then one with the money," said the philosopher, "and you will be master of two." To one who boasted of his skill and activity in swimming, he said, "Are you not ashamed to value yourself on that which every dolphin can do better?" The following maxims are not unworthy of the Socratic school: "Philosophers," said Aristippus, "excel other men in this, that if no laws existed, they would live honestly." "It is better to be poor than illiterate; for the poor man only wants money, the illiterate want the distinguishing characters of human nature." "The houses of the wealthy are frequented by philosophers, for the same reason that induces physicians to frequent those of the sick." "The truly learned are not those who read much, but they who read what is useful." "Young people should be taught those things which will be useful to them when they become men." For the distinguishing sentiments of the Cyrenaic sect, founded by Aristippus, see CYRENAICI. Diogenes Laertius, lib. ii. § 62—So. Brucker's Hist. Philos. by Enfield, vol. i. p. 182—186. Travels of Anacharsis, vol. iii.

ARISTO of *Chios*, a Greek philosopher of the Stoic sect, was the son of Miltiades, and the intimate associate of Perseus; and as they both attended the lectures of Zeno at the same time, he must have flourished about 260 years before Christ. He was called, on account of his persuasive powers of eloquence, the Siren. His loquacity and love of pleasure displeased his master, from whom he removed to the school of Polemon; and afterwards he made unsuccessful attempts to establish a school of his own. He opposed the doctrine of uncertainty maintained by the Academic philosophers, and particularly by Arcesilaus; and made several innovations on the Stoic philosophy. He excluded from the course of his studies both physics and logic; the former as incomprehensible, and the latter as unuseful to the purposes of human life. He taught, with the Stoics, that virtue alone is the supreme good; but also that in other things there is no difference which can render one more desirable than another. This doctrine of indifference he applied to moral actions, representing all actions as alike; so that to a wise man it was the same thing whether he performed the part of an Agamemnon or a Thersites, provided he did it well. Seneca charges him with rejecting and condemning the preceptive part of philosophy in its relation to the particular duties of life. Whilst he discouraged all speculations in opinions, he maintained that the divine nature is incomprehensible, and he doubted whether the gods have perception or animal life, thus in effect denying the existence of deity. "Philosophers," says Aristo, "injure, instead of benefiting their disciples, if what is well meant be ill interpreted; and thus it is that the pupils of Aristippus became dissolute, and those of Zeno morose." He should have added, says Bayle, that every teacher should avoid ambiguous maxims, and prevent false glosses being put upon them; nor should we infer, that the doctrines of these philosophers had not a tendency, even

if rightly understood, to produce hurtful effects. While he inveighed against Arcesilaus, he himself became addicted to pleasure in his old age. His death is said to have been occasioned by his bald head being scorched with the heat of the sun. Cic. de Fin. l. iv. c. 27. Nat. Deor. l. i. c. 14. Seneca's Ep. 89. 94. Diogenes Laertius. Gen. Dict. Brucker by Enf. vol. ii. p. 352.

ARISTO of *Coos*, a Peripatetic philosopher, filled the Aristotelian chair about 230 years before Christ, being the fourth in succession from the celebrated founder of that school, and died about the year before Christ 183. He is represented by Cicero (de Fin. l. v. c. 5.) as a neat and elegant orator, but deficient with regard to the dignity and authority of a philosopher. Athenæus (l. x. p. 419. and l. xii. p. 456.) cites a work ascribed to him, and intitled "Amatory Similes."

ARISTO, *Titus*, a Roman lawyer, very much distinguished by his talents and character, lived in the time of Trajan, about the year 110. The younger Pliny, in his Epistles, (l. i. ep. 22. l. viii. ep. 14.) highly extols both his learning and his character; but if it be true that in an illness, which he is said to have borne with great patience, he summoned his friends, and intreated them to ask his physician, what was likely to be the issue of his disorder? so that if they pronounced it incurable, he might put an end to his own life; we must admit the high panegyric of Pliny with considerable abatement. Aulus Gellius (l. xi. c. 11.) speaks of him as the author of many books. Gen. Dict.

ARISTOBRAITHRA, in *Ancient Geography*, a town of India, on this side of the Ganges. Ptolemy.

ARISTOBULUS, in *Biography*, an Alexandrian Jew, was preceptor of Ptolemy Euergetes, eldest son of Ptolemy Philometor, king of Egypt, and flourished about 145 years before Christ. He was an admirer of the Greek philosophy, and united the study of the Aristotelian system with that of the Mosaic law. Eusebius represents him as a favourite of Ptolemy, and cites from his "Commentaries on the books of Moses," inscribed to that prince, several verses of Orpheus, in which mention is made of Moses and Abraham. These verses are also found in the works of Justin Martyr; but so much altered as to afford reason for suspecting their authenticity. In the Commentary the author also asserts, that part of the law had been translated into Greek in the time of Alexander; and that the whole was translated, under the care of Demetrius Phalereus, in the reign of Ptolemy Philadelphus. But the commentary was not written till 120 years after the reign of that king; and as Demetrius Phalereus was in exile during the reign of Ptolemy Philadelphus, he could not have superintended the Septuagint translation. It is therefore probable, that Aristobulus either invented the story of the Septuagint interpreters, or borrowed it from Aristæas, in order to support the credit of this translation with his brethren in Palestine. See ARISTEAS. Aristobulus seems to have been desirous of ascribing the Grecian philosophy to a Hebrew origin, as we learn from Clement of Alexandria (Strom. lib. i.); and of establishing an opinion that Pythagoras, Plato, and other Greek philosophers, were acquainted with the Jewish law. It is not unlikely that he forged the above-mentioned verses of Orpheus, and also the tales respecting the Greek versions of the Hebrew scriptures. Upon the whole, Aristobulus may be ranked with those who have been suspected of practising pious frauds. Euseb. Præp. Ev. l. xii. c. 13. l. viii. c. 8. Brucker by Enf. vol. ii. p. 167.

ARISTOCRACY, in *Politics*, a form of government, where the supreme power is lodged in the hands of the optimates, i. e. of a council or senate composed of the principal persons

persons of a state, either in respect of nobility, capacity, or probity. The word is derived from *αριστος*, *optimus*, and *κρατω*, *impero*, *I govern*.

In an aristocracy, the legislative and executive authority is vested in a select assembly, the members of which either fill up by election the vacancies in their own body, or succeed to their places in it by inheritance, property, tenure of certain lands, or in respect of some personal right or qualification. The separate advantage of an aristocracy consists in the wisdom which may be expected from experience and education; for a permanent council naturally possesses experience; and the members who succeed to their places in it by inheritance, will probably be trained and educated with a view to the stations which they were destined by their birth to occupy. In an aristocracy, however, there is less honesty than in a republic, and less strength than in a monarchy. Its mischiefs are dissensions in the ruling orders of the state, which, from the want of a common superior, are liable to proceed to the most desperate extremities; and oppression of the lower orders by the privileges of the higher, and by laws partial to the separate interests of the law makers. It would be a very happy thing, says Montefquieu, if by some indirect method or other, the people could be emancipated from their state of annihilation; and, consequently, the best aristocracy is that in which the part of the people who have no share in the legislature is so small and inconsiderable, that the governing party may have no interest in oppressing them. Thus when Antipater made a law at Athens, that any person who was not worth 2000 drachmas should be excluded from the right of suffrage, he formed by this means the best possible aristocracy; because the sum was so small, that few of any rank or consideration in the city were excluded. The more an aristocracy borders on democracy, the nearer it approaches to perfection; and it is the more imperfect in proportion as it draws towards monarchy. In an aristocracy, the laws should tend, as much as possible, to infuse a spirit of moderation, which would supply the place of the spirit of equality in a popular state; and as modesty and simplicity of manners constitute the strength of an aristocratic nobility, the nobles should not be invested with personal and particular prerogatives, distinct from those of their body. There are two principal sources of disorder, which should be avoided; these are excessive inequality between the governors and the governed, and the same inequality between the different members of the body that governs.

Aristocracies, says archdeacon Paley, are of two kinds; first, where the power of the nobility belongs to them in their collective capacity alone; that is, where although the government reside in an assembly of the order, yet the members of that assembly separately and individually possess no authority or privilege beyond the rest of the community; such is the case in the constitution of Venice. Secondly, where the nobles are severally invested with great personal power and immunities, and where the power of the senate is little more than the aggregated power of the individuals who compose it; such was the case in the constitution of Poland. Of these two forms of government, the first is more tolerable than the last; for although many, or even all the members of a senate should be so profligate as to abuse the authority of their stations in the prosecution of private designs, yet, whilst all were not under a temptation to the same injustice, not having the same end to gain, it would be still difficult to obtain the consent of a majority to any specific act of oppression, which the iniquity of an individual might prompt him to propose: or if the will were the same, the power is more confined: one tyrant, whether the tyranny reside in a

single person, or a senate, cannot exercise oppression in so many places at the same time, as may be carried on by the dominion of a numerous nobility over their respective vassals and dependents. Of all species of domination, this is the most odious; the freedom and satisfaction of private life are more restrained and harassed by it, than by the most vexatious laws, or even by the lawless will of an arbitrary monarch, from whose knowledge, and from whose injustice, the greatest part of his subjects are removed by their distance, or concealed by their obscurity. An aristocracy of this kind has been productive, in several instances, of disastrous revolutions; and the people have concurred with the reigning prince in exchanging their condition for the miseries of despotism. This was the case in Denmark about the middle of the seventeenth century, and more lately in Sweden. In England, also, the people beheld the depression of the barons, under the house of Tudor, with satisfaction, although they saw the crown acquiring thereby a power which no limitations, provided at that time by the constitution, were likely to confine. From such events this lesson may be drawn; "that a mixed government, which admits a patrician order into the constitution, ought to circumscribe the personal privileges of the nobility, especially claims of hereditary jurisdiction and local authority, with a jealousy equal to the solicitude with which it provides for its own preservation." Mont. Sp. of Laws, vol. i. p. 18. 72—77. Paley's Princ. of Philos. vol. ii. p. 180—182. See OLIGARCHY.

ARISTOGITON, in *Biography*, an Athenian who, with Harmodius, attempted to restore the liberty of their country by the overthrow of the two tyrants Hippias and Hipparchus.

Harmodius and Aristogiton, connected not only as citizens of Athens, but as friends, resolved to revenge an affront offered to the daughter of the former by Hipparchus, who had obliged her to retire from a public procession, at which she was entitled to have assisted, carrying a basket of flowers. Nothing less would satisfy the resentment of these two men, than the deposition of the tyrants. Having concerted the proper measures for their enterprise, they secretly imparted their plan to a small number of the citizens, and fixed the day of execution to be the feast of Panathenæa, when all the citizens wore arms. They accordingly attacked and slew Hipparchus, in the year 514 before Christ, but were themselves instantly apprehended, and Harmodius was put to death. Aristogiton was put to the torture, in order to force him to declare his accomplices. The most intimate friends of Hippias were named, and immediately put to death. When Aristogiton was asked by the tyrant, if there were any more? "There now remains," said he with a smile, "only yourself worthy of death." Leæna, the mistress of Harmodius, is said to have behaved with similar intrepidity; for fearing lest the pains of torture might extort from her a confession, she bit off her tongue, and spit it out. Though these champions of liberty perished themselves, yet the spirit which they excited continued to operate until it effected the emancipation of the Athenians, and drove Hippias into exile three years after this event, or about the year 510 before Christ. Having reinstated freedom, the Athenians erected in the forum statues, made by Praxiteles, to the memory of Harmodius and Aristogiton, who had begun this revolution, and set them up to public view, that the sight of them might inspire the citizens with a more violent hatred of tyranny. They sung hymns to their praise at the Panathenæa, decreed that no slaves should bear their names, and very extensive privileges were granted in perpetuity to their descendants.

How-

However, neither the characters nor the motives of these conspirators, whatever benefit might result from their conspiracy, seem to have deserved such testimonies of respect. Thucyd. l. vi. c. 56. Plat. in Hipp. t. ii. p. 220. Philostr. in Vit. Apollon. l. vii. c. 4. p. 283. Aulus Gellius, l. ix. c. 2. Travels of Anacharsis, vol. i. p. 171.

ARISTOLOCHIA, in *Botany*, birthwort (*αριστολος*, and *λοχια*, or *λοχινα*, from its supposed use in disorders attending parturition). Linn. g. 1022. Schreb. 1383. Juss. 73. Gærtn. 14. Class, *gynandria hexandria*. Nat. Order, *Sarmentacea*. *Aristolochia*, Juss. Gen. Char. *Cal.* none. *Cor.* monopetalous, tubular, irregular; base swelling, subglobular, tortulose; tube oblong, hexagon-cylindric; limb dilated, extended below into a long tongue. *Stam.* filaments none; anthers six, fastened at bottom to the stigmas, four-celled. *Pist.* germ oblong, inferior, angular; style scarcely any; stigma subglobular, six-parted, concave. *Per.* capsule large, six angled, six-celled. *Seeds* several, depressed, incumbent.

Ess. Gen. Char. Stigmas six. *Cal.* none. *Cor.* monopetalous, tongue-shaped, entire. *Capf.* six-celled, inferior.

Species 1. *A. bilobata*, two-lobed birthwort. *A. longa* scandens, foliis ferri equini effigie Plum. Ray. "Leaves two-lobed, stems twining;" stem filiform, subdivided, leaves cordate; lobes oblong, nerved, entire; petioles crooked smooth; peduncles one-flowered, longer than the leaves; corolla ligulate; tube globose, many-keeled, curved, hexagonal, bluish, funnel-shaped, at the throat marked with longitudinal brown lines; limb elongated, spatulate. Native of Dominica and Hispaniola, covering trees and shrubs, and flowering from November till January 2. *A. trilobata*, three-lobed birthwort. Jacq. obs. 8. t. 3. Browne, 329. 3. Swartz. obs. 341. "Leaves three-lobed, stem twining; flowers very large, bagged at the base, tongue linear, very long." This is a climbing plant like the former; the stem is aromatic, and the flowers large and ventricose. It is a native of the West Indies, and South America; introduced here about the year 1775; and flowers in June and July. 3. *A. pentandra*, five-flamed birthwort. Jacq. Amer. 232. t. 147. pict. 115. t. 224. "Leaves cordate, hastate-subtrilobate, stem twining, bracte cordate, embracing." The flowers of this are smaller, and have only five stamens. It is a native of America. 4. *A. peltata*, peltated birthwort. Jacq. Amer. pict. 114. 222. "Leaves kidney-shaped, subpeltate, stem twining;" stem filiform, striated; leaves small, nerved, entire, smooth, standing on footstalks which embrace the stem; corolla spotted, brown; tube globose at the base, crooked, reflex, an inch long, brown, dotted with green; throat funnel-shaped, pubescent at bottom; border having a lip an inch in length, tongue-shaped, retuse at the tip, slightly emarginate, set with convex, acute, dark purple dots, green below the tip to the throat. A native of St. Domingo and South America, where it flowers in February and March. 5. *A. maxima*, greatest birthwort. Jacq. Amer. 223. t. 146. pict. 114. 223. "Leaves oblong, acuminate, stem twining, peduncles many-flowered." This has strong climbing stems by which it mounts up to the top of the tallest trees; leaves four inches long, two broad, oval, obtuse, thick; flowers curved in loose clusters at the ends of the shoots; fruit like a purse, very large. It was sent to England by Mr. R. Miller, from New Spain, and since found by professor Jacquin, to whose elegant figure of it we have above referred. 6. *A. bilabiata*, two-lipped birthwort. Swartz. obs. 342. Plum. spec. 5 ic. 32. f. 1. "Leaves cordate-tongue-shaped, obtuse, stem twining, corolla two-lipped;" stems filiform; branchlets alternate, loose, three or four leaved; leaves entire, stiffish, smooth, petioles shorter than the peduncles; corolla middle-

sized, brown purple, striated; tube globose at the base; border elongated, oblong, blunt, reflex; funnel of the tube, split, so as to make the corolla bilabiate. A native of South America. 7. *A. creta*, upright birthwort. "Leaves lanceolate, sessile, subhirsute; stem erect, peduncles solitary, one-flowered, flowers very long; stalk three feet high, leaves long, narrow, hairy, with very short footstalks; flowers solitary, axillary, four inches long, of a dark purple colour; seeds flat, heart-shaped. Discovered at Vera Cruz by Dr. Houftoun, who sent the seeds to Europe about the year 1733, where it was cultivated by Mr. Miller. 8. *A. arborescens*, tree birthwort. Pluk. alm. 50. t. 78. f. 1. "Leaves cordate-lanceolate; stem erect, shrubby;" about two feet high; branches strong enough to support themselves; flowers solitary, axillary. A native of North America. 9. *A. caudata*, tailed birthwort, Jacq. Amer. 233. t. 145. pict. 114. t. 221. "Leaves cordate, obtuse, emarginate at the tip, lobes incumbent, lip tailed;" the lobes of the leaves lap over each other at the base; the lip of the corolla ends in a bristle-shaped tail. A native of America. 10. *A. odoratissima*, sweet-scented birthwort. Browne, 329, 1. Sloane, v. 1. 162. t. 104. f. 1. "Leaves cordate; stem twining, shrubby; peduncles solitary; lip of the corolla very large;" root long geniculated; stem climbing, six or eight feet high; branches numerous; leaves cordate or triangular, four inches long, longitudinally ribbed; corolla yellowish. The whole plant has a strong grateful smell. A native of Jamaica, where it is called *contrayerava*; cultivated by Miller in 1752. 11. *A. sphyro*, broad-leaved birthwort. L'Heritier, stirp. nov. 1. p. 13. t. 7. "Leaves cordate; petioled; flowers solitary; border trifid, equal; bracte ovate; stem twining, shrubby." This is a tall twining shrub with few branches, of a camphoraceous smell, leaves spreading, remote, roundish, sinuate-cordate, veined; peduncles lateral, one-flowered; bracte decurrent, embracing the peduncle; corolla of a purplish brown, an inch and a half long; tube shaped like a syphon, with a trifid flat border. A native of North America, and introduced here by Mr. Bartram about the year 1763. It flowers in June. 12. *A. anguicida*, snake killing birthwort. Jacq. Amer. 232. t. 144. pict. 114. t. 220. Morris. hist. 3. f. 12. t. 17. f. 7. "Leaves cordate, acuminate; stem twining, shrubby; peduncles solitary; stipules cordate;" root thick; stems slender, long, jointed, purple; corollas purple, straight, truncated as it were with a lanceolate lip. If the juice of the root mixed with the saliva be put into the mouth of a serpent, it may be handled with safety; but will recover in two hours. A native of Mexico and the West Indies. 13. *A. maurorum*, Moorish birthwort. Mor. hist. 3. f. 12. t. 17. f. 11. "Leaves hastate, quite entire; stem weak, simple; flowers solitary, recurved." It has several filiform stems producing seven or eight leaves on each side of the upper part of the stem, these are ash-coloured, opposite, resembling those of *osmunda regalis*. The flowers are larger than those of common birthwort, brown, and appear among the lower leaves. Discovered by Rauwolf in olive grounds about Aleppo. 14. *A. Indica*, Indian birthwort. Gærtn. Pract. i. 45. Carel. vegen. Rheed. Mal. 8. 48. t. 25. "Leaves cordate, rather acute; stem twining; peduncles many-flowered;" stems shrubby, striated, slender; leaves entire, smooth, frequently retuse or emarginate; peduncles axillary, with alternate acute bractes, within which stands a single flower on its proper pedicel; corolla a dusky purple. A native of the East Indies and Cochinchina. 15. *A. boetica*, Spanish birthwort. Mor. t. 17. f. 6. "Leaves cordate, rather acute; stem twining; peduncles about three, longer than the petioles;" the stems are slender, striated, spreading over hedges and bushes; leaves acuminate, on long petioles;

flowers.

flowers crooked, oblong, very dark purple; stipules ovate-rhomboid, and mucronate. Found by Clusius in Andaulia. An evergreen, and odorous plant, flowering in January and February, cultivated by Gerard, in 1507. This was formerly called climbing birthwort. 16. *A. sempervirens*, evergreen birthwort, *psilolochia cretica*. Bauh. pin. Mor. Hist. 12. t. 17. f. 16. "Leaves cordate-oblong, acuminate, waved; stem weak, flowers solitary;" the stems are many, trailing, more than a foot long, striated, angular; leaves nerved, dark coloured, evergreen, on long petioles; flowers axillary, crooked, longer than the leaves, of a dark purple externally, internally yellow. A native of the island of Crete or Candia, flowering in May and June. Cultivated in the Chelsea garden in 1739. 17. *A. serpentaria*, Virginia birthwort or snake-root. Woodv. Med. Bot. 291. t. 126. Mat. Med. "Leaves cordate-oblong, flat; stems weak, flexuose, round; flowers solitary;" root a congeries of small fibres, yellowish; stem jointed, firm, from six inches to a foot in height; leaves lanceolate cordate, nerved; flowers blue or purplish, on long footstalks, proceeding from the lower joints of the stem; tube compressed at the throat, ventricose and round at the base, spreading at the border. It flowers in May, and perfects its seeds in August. A native of Virginia and Carolina. Cultivated by Tradescant at Lambeth, in 1632. 18. *A. psilolochia*. Lin. sp. 1364. "Leaves cordate-crenulate, retted underneath, petioled; flowers solitary;" the stems are angular, branching, seldom rising to a foot in height, and scarcely strong enough to support themselves; bractes heart-shaped at the base of the peduncle; flowers small, lip bent inwards, tube and beginning of the petal yellow, broader and blood-coloured. A native of the south of France, Spain, and Switzerland. Cultivated by Gerard in 1596. 19. *A. rotunda*, round-rooted birthwort; "leaves cordate, subfessile, obtuse; stem weak, flowers solitary;" the roots are roundish, about the size of a small turnip; they send out three or four weak trailing branches, to the extent of two feet; leaves rounded at the end; flowers stand singly, close to the petioles, they are of a purplish black colour, and curved inwards at the lip. A native of the south of Europe, flowering from June till the end of August. 20. *A. longa*, long-rooted birthwort. Woodv. Med. Bot. p. 294. f. 107. "Leaves cordate, petioled, obtuse; stem weak; flowers solitary, fruit ovate;" the root is very long, somewhat fusiform; stems weak, angulated; branches trailing; peduncles at the axils of the leaves; flowers of a pale purple colour, angulated, tube gradually widening to the mouth, which is ovate and terminating in a pointed apex. A native of the south of Europe. It flowers at the same time as the *A. rotunda*, which it very much resembles. They were both cultivated by Gerard in 1596. 21. *A. lirifuta*, rough birthwort. Tournef. itin. i. t. 147. "Leaves cordate, rather obtuse, shaggy; flowers solitary, pendulous, recurved, subtruncate." This species has some resemblance to the preceding, but the leaves are hairy, and not so deeply cored at the bottom, the flowers are also much larger; stem striated, hairy, leaves obtuse, dagger-pointed; corolla incurved, and recurved, without an elongated lip. Tournefort says the root is nearly two feet in length, and two inches in thickness; stems two feet high, knotted, at each knot arises a single leaf three inches long; flowers axillary, of the shape of an S, and of a pale green, mixed with a purple colour. It is a native of the island of Scio or Chios. 22. *A. clematitis*, common birthwort. Hudf. 394. With. 1003. Woodv. Med. Bot. supp. f. 238. Eng. Bot. 398. "Leaves cordate, stem erect, flowers axillary, crowded;" stems two feet high, simple striated, smooth, a little zigzag; leaves alternate, on footstalks without stipules,

heart-shaped, entire, smooth, broad, veined, nerved; flowers five or six in a cluster, axillary, of a pale yellow, appearing from July till September, consisting of one petal, globose at the base, with six furrows, these funnel shaped, and terminating in a tongue-like figure; style simple, with six stigmas. Smith. Found in England about the ruins of nunneries, abbeys, &c. The following five are new species. 23. *A. scandens*, Mill. Dict. n. 10. "Leaves cordate, on very long footstalks; stems climbing; flowers terminal, on very long peduncles." This climbs to a very considerable height; leaves broad, longitudinally veined; flowers in loose clusters at the extremities of the branches, and on long peduncles. It grows about Tolu in New Spain, from whence Mr. R. Millar sent the seeds to England. 24. *A. conferti*. Mill. Dict. 11. "Leaves cordate, petioled; stem climbing; flowers in axillary clusters." This climbs to the height of three or four feet; leaves short, somewhat like those of *A. rotunda*; flowers dark purple. It was discovered by Mr. R. Millar at Campeachy. 25. *A. bracteata*, Retz. obs. 5. 29. n. 80. "Leaves cordate, obtuse; stem weak; flowers solitary; bractes cordate, petioled." Stem flexuose, striated; flowers peduncled, shorter than the leaf, with a long curved lip. Found by Koenig about Madras. 26. *A. obtusata*, Swartz. prod. 126. Plum. ic. 27. t. 53. "Leaves cordate, rounded at the tip, three-nerved, nerved, and tomentose beneath; stem twining; peduncles solitary." A native of the Caribbee islands. 27. *A. grandiflora*, Swartz. prod. 126. Browne, jam. 327. n. 2. "Leaves broad, cordate; stem twining, subherbaceous; peduncles solitary; tip of the corolla very large, with a long tail." Flowers large, five or six inches round the margin; throat closed longitudinally for a considerable time; lip terminating at the lower extremity in a long slender appendix. A native of Jamaica (about St. Ann's).

Medicinal Properties. The *A. rotunda*, *longa*, and *clematitis*, formerly were admitted into the materia medica of the British pharmacopoeias; and the last is still retained by the Edinburgh college. The virtues which the ancients ascribed to their roots were very considerable, and they were consequently employed in various diseases, particularly those thought to proceed from obstructions more especially of the uterine system; and we are informed by Dr. Cullen, that in some cases of this description, he found the *aristolochia* an useful remedy. Though many species of this genus have been recommended for their medicinal powers, it is only that of *Serpentaria* which has continued to maintain its character as a medicine of importance. The root of *Serpentaria*, as well as that of some of its congeners before mentioned, was first recommended as a medicine of extraordinary power in counteracting the poisonous effects of the bites of serpents; since that time it has been principally employed in fevers, especially those of the malignant kind; a practice founded on a supposition that the morbid matter of these fevers was to be subdued by the same means as that of the poison of serpents: hence the *Serpentaria* has been deemed the most powerful of those medicines termed alexipharmics. But since this theory has been exploded, its good effects are now ascribed to its tonic and antiseptic properties. It is certainly a powerful stimulant and diaphoretic, and has been found very useful in fevers, where these effects have been required, as appears from the writings of Huxham, Hillary, Pringle, &c. See Woodville's Med. Bot. p. 293.

Propagation and Culture. Those species that are natives of hot climates, as 1, 7, 9, 10, 12, 14, 23—27, require a stove to preserve them. The seeds, by which they are to be propagated, should be brought over in their pods, and immediately on their arrival here, should be sown in small pots filled with
light

light earth, and should this happen in autumn or winter, the pots should be plunged into the tan of the bark stove, and under the shade of large plants. After remaining till March, they should be plunged into a hot-bed under frames, where the plants ought to appear in May. But if the seeds arrive in spring or summer, they must be sown in small pots, and plunged into a moderate hot-bed, observing to shade them constantly during the heat of the day; but the seeds sown at this season of the year seldom grow the same year, and in that case the pots should be plunged in the tan-bed of the stove in autumn, and in the spring following treated as before directed. When they are strong enough, they should be transplanted into separate small pots, and treated as other tender plants of the same countries. 8. The tree birthwort will live in the open ground, but requires shelter in winter. 11. is hardy and may be propagated by seeds, suckers, or by parting the roots. 13, 15, 16, 18, are propagated by parting the roots; they should be screened from severe frost. 17, 19, 20, 21. are propagated by seeds, in pots placed under a frame to defend them against frost, but the glasses to be taken off when the weather is mild; and they would be greatly improved by removing them to a gentle hot-bed in March. As the season advances, they should be gradually enured to bear the open air; when the pots are taken out of the bed, they may be exposed to the morning sun, but screened during the heat of the day. They are to be refreshed with water moderately during dry weather only. In winter, the pots must be sheltered as before; and, in March, before the roots begin to shoot, they should be transplanted into separate small pots, and placed under the frame till spring, when they may be removed into the open air, and treated in the same manner as in the former year. The next spring they may be turned out of the pots, and planted in a warm border, where they will only require to be kept clean from weeds, and the roots defended from the frost, by covering the border, in autumn, with old tanner's bark. By this management the plants will become much healthier and stronger than if kept in pots, and when they are three years old, will flower, and produce plenty of seeds. The 22d species spreads so rapidly by its creeping roots, that it will be found troublesome, unless planted where it cannot injure other plants. All the species are perennial, and their stems generally require supporting. See Martyn's Mill. Dict.

ARISTOMENES, in *Biography*, a famous general of the Messenians, distinguished by his love of liberty and his valour, and also by the vicissitudes of his fortune, was the son of Nicomedes, and a descendant of the royal family of Messene. The oppression of the Spartans roused his indignation, and he took up arms, in connection with the Argives and Arcadians, for the rescue of his country; and thus commenced the second Messenian war, in the year before Christ 684, which terminated in the year 668 before the same æra. The first battle was fought in a village of Messenia, and the victory was long doubtful; but Aristomenes by his valour determined the fate of the day; and the army unanimously saluted him as king. This honour, however, he declined, and chose to retain that of general. His next object was to intimidate the Spartans by a single act of courage; and with this view he repaired to Lacedæmon, and having secretly entered the temple of Minerva, he affixed to the walls a buckler, with this inscription, "Aristomenes has consecrated this to the goddess, from the spoils of the Lacedæmonians." In a second engagement the Lacedæmonians were again defeated, and one of their towns was taken and pillaged; but in this action Aristomenes received a wound in the thigh, which however did not prevent his marching

to invest Sparta, whence he was under a necessity of retreating. In the third year of the war, the Messenians were betrayed by the treachery of Aristocrates, king of Arcadia, and suffered a defeat, attended with the loss of the greatest part of their army. Thus weakened and distressed, the resolution of Aristomenes was invincible; and with a small band of select men, he contrived to harass the Spartans, and to penetrate into Laconia. At length the valiant general was taken prisoner, and confined in a deep cavern amidst the other wounded and dying prisoners. In this noisome recess he continued three days; when perceiving at a small distance from him a fox preying upon a dead body, he seized its leg and permitted it to conduct him to a small hole through which he could discern the light. Having enlarged the aperture with his hands and nails, he obtained a passage through which he made his escape, undiscovered, to his countrymen at their post on mount Ira. He soon renewed his ravages among the enemy, and compelled them to a truce; but he was perfidiously seized by some Cretan soldiers in the service of Sparta, and carried away captive. These Cretans, who were seven in number, stopped at the house of a widow with one daughter; and whilst they were intoxicated with wine, the woman cut the thongs by which he was bound, and set him at liberty. Thus released, he slew all his guards, and accompanied by the mother and daughter, hastened to Ira, where the latter was married to his son. Ira was treacherously surrendered to the Spartans; but Aristomenes forming a small band of his followers into a column, marched directly to the enemy's line, which opening to the right and left, as he advanced, afforded him an unmolested passage. He then joined the Arcadians, by whom he was kindly received; and proposed to them a bolder exploit than any which he had yet achieved. "I have still left," said he, "five hundred brave soldiers who will follow me where I please; if you assist me, whilst the Spartans are occupied in the pillage of Ira, I will march immediately to Lacedæmon and surprise it." The proposal was received with great applause; but, before it could be executed, the Arcadian king contrived to delay it till he had forewarned the Spartans of their danger. His treachery was discovered, and the enraged people stoned him to death. Thus disappointed, he sent the Messenians, under the conduct of his son, to the island of Sicily, where they founded the city of Messina, about the year 668 before Christ, according to Pausanias; and he remained in Greece, watching a favourable opportunity for accomplishing the designs against the Spartans which he was still meditating. Such was his reputation, that when a person of the first rank at Rhodes consulted the oracle at Delos whom he should marry, he was directed to espouse the daughter of the most worthy of the Greeks, meaning Aristomenes. On a visit to his son-in-law, Aristomenes died, and a magnificent tomb was erected for him at Rhodes. The independence of his country, however, expired with him. Pausanias, l. iv. c. 21, 22, 23. Anc. Un. Hist. vol. v. p. 413—423. Travels of Anacharsis, vol. iv. p. 38—53.

ARISTONAUTÆ, in *Ancient Geography*, a town of Achaia, near the frontiers of Sicyonia, north of Pallene, and at the bottom of a small gulf.

ARISTONIS URBS, a city of Egypt in the road from Coptos to Berenice, 25 miles from Diospolis.

ARISTONUS, in *Biography*, an eminent Grecian sculptor. The exact time when he lived is not known. He erected a statue of Jupiter at Olympia, the face of which was placed towards the rising of the sun. The god held the eagle with one hand, and in the other the thunder. His head was crowned with the flowers of spring.

The eagle is necessarily attached to Jupiter in order to distinguish the god, but with respect to the other attributes, we may fairly infer that they were introduced in order to point out the union of justice and mercy in the divine nature. The thunder, an emblem of his power to execute judgment, is placed in his hand, but the blossoms of spring are as a crown upon his head, to shew that it is his delight and his glory rather to bless mankind. The face of this statue being turned towards sun-rise, seems to strengthen this idea, and might be intended to exhibit the care and government of the Divine Being in the conduct of his providence.

ARISTOPHANES, a celebrated comic poet, flourished about the middle of the fifth century before Christ, and was contemporary with Sophocles, Socrates, Euripides, and several others of the greatest men in Greece. The place of his birth is not known; but it is generally supposed that he was not a native of Athens, though he was much esteemed in this city, where he seems to have resided and been admitted to the honour of a denizen. Having been accused by Cleon of assuming the title of a citizen without possessing a legal right to it, in his defence he parodied two verses which Homer has put into the mouth of Telemachus, of which this is the sense: "I am, as my mother tells me, the son of Philip; for my part I know little of the matter; for what child knows his own father?" This stroke of pleasantry, it is said, having induced his judges to confirm him in his privileges as a citizen, he breathed nothing but vengeance against Cleon, and composed a piece against him abounding with the bitterest sarcasms. As he advanced in life he employed those talents for poetry which distinguished his early age, in that species of dramatic writing, called "The Old Comedy," which flourished during the Peloponnesian war, and a little before it, and which introduced on the stage real persons by name, in order to make them the objects of invective or ridicule. Having reduced this kind of comedy from its rude and unconnected state into a better and more useful form, he made it the vehicle of very unallowable and licentious severity and abuse. This was particularly the case in his first comedies; but he is said to have become more moderate in his later performances, and to approach in his manner to what was called "Middle Comedy," in which real persons were not introduced, but the characters were in some measure disguised by fictitious names; see COMEDY. His first efforts were directed to the reformation of abuses in the state; and he lashed, without discrimination, the usurpation and misconduct of the great, and the follies and vices of the people in general. Whilst he exposed the sinister designs of the magistrates and generals of the Athenians by his wit and satire upon the theatre, he at the same time took care to defend the commonwealth against its foreign enemies; inasmuch that Lacedæmon and other cities which were jealous of the grandeur of Athens, frequently experienced that Aristophanes alone was worth an army to that city, and that it was impossible to succeed while they followed the advice of this poet, who had made the stage a kind of school for the art of war, and all other virtues which can render a city formidable to its enemies. We are told that the freedom with which he reprehended the errors and faults of the philosophers, poets, generals, and ministers of state, and those of the mass of citizens, was so well received by the Athenians, that they cast handfuls of flowers upon his head, and carried him in triumph through the city with the greatest respect and loudest acclamations. As a recompence for the zeal which he manifested on behalf of the commonwealth, they passed a public decree, that he should be honoured with a crown of the sacred olive in the citadel, which was the highest token of respect that

could be paid to any citizen. Two excellent actors, Callistratus and Philonides, performed in the comedies of Aristophanes. When the first appeared, it was understood that the comedy was directed only against the vices of individuals; and when the second acted, that it attacked the leaders of the administration. But the licentious attacks of Aristophanes, though often applauded by the multitude, were disapproved and condemned by the most intelligent part of the public. Accordingly, by one decree, the acting of comedy was prohibited; by a second, it was forbidden to mention any person by name; and by a third, to attack the magistrates. But these decrees were soon forgotten or repealed; nor would the multitude consent to relinquish a species of entertainment in which all the abusive and obscene expressions their language afforded, were lavished on the objects of their jealousy or resentment. Towards the end of the Peloponnesian war, the licentiousness of the poets was restrained, and Aristophanes himself submitted to this reformation in his latter pieces. But no reformation which he might effect in the state, much less any gratification which he might afford to the spleetic humour of individuals, can atone for or excuse his malignant attack on the reputation and life of Socrates. His comedy of "The Clouds," was written with a view to expose to ridicule this admirable philosopher. To this purpose he represents him suspended in a basket, resembling his thoughts to the subtle and light air which he respire, and invoking the clouds, the tutelary deities of the fop-hills, whose voice he imagines that he hears in the midst of the fogs and darkness by which he is surrounded. To inflame the more against him the prejudices of the people, he accuses him of teaching the youth of Athens to contemn the gods, and to deceive men. This piece, which was received at its first and second recital with applause, though it did not obtain the crown, is thought to have contributed towards preparing the Athenians for that unjust decree, which bereaved that age of its brightest ornament. Aristophanes, notwithstanding the malignity of his satire, the occasional obscenity of his humour, and the licentiousness of his morals, was universally admired among the ancients on account of the Attic elegance of his style, and the peculiar poignancy of his wit. The purity and elegance of his diction was so much admired even by Plato, the disciple of Socrates, that in an epigram he represents the graces searching for a desirable mansion, and at length fixing it in the mind of Aristophanes; and St. Chrysostom, the most eloquent of the Greek fathers of the church, is said to have laid him always under his pillow when he went to bed. Nevertheless, many of the ancients felt and censured the faults of Aristophanes. The character which Plutarch (in Compar. Aristoph. & Menand., Oper. t. ii. p. 853 and 854.) gives of him, is as follows: "he outrages nature, and addresses himself more to the populace than to a genteel audience; his style is constantly mixed and unequal, elevated to bombast, familiar even to vulgarity, and buffoonish even to childifness. In him the father is not to be distinguished from the son, the citizen from the peasant, the warrior from the tradesman, nor a god from a menial servant. His impudence can only be endured by low people; his wit is bitter, sharp, and cutting; his pleasantry consists chiefly in a play upon words, gross equivocations, and far-fetched and licentious allusions. In him, subtlety of expression becomes malignant, and simplicity appears stupid; we are more inclined to hiss than to laugh at his rallery, and his gaiety is effrontery; in short, he writes not to please rational and worthy people, but to gratify envy, spite, and debauchery." Upon the whole, we may observe, that such wit as his would not be admired in any modern

modern composition. Frischlin has written an express vindication of Aristophanes, in answer to the objections of Plutarch. Cicero likewise, in his first book "De legibus," styles him the most witty poet of the "Old Comedy," and highly commends him for endeavouring to expel the new deities out of the city, and to prevent the admission of scandalous forms of religion. Brumoy thinks that Plutarch's remarks are too severe; and Mr. Cumberland has defended the author of the "Clouds," with true classical zeal, somewhat, perhaps, at the expence of Socrates and Euripides. Athenæus (Deipn. l. x. c. 9.) informs us, that he wrote his comedies when he was drunk, as Alcæus likewise did his poems. Julius Cæsar Scaliger compares Horace to this poet; but Frischlin is of opinion, that Plautus has a greater affinity to him in his manner of writing, and has actually imitated him in many parts of his plays. By others, his writings have been represented as containing within them the germ of true comedy, and the models of the best comic style; and they maintain that the author well understood that species of raillery, which, in his age, was pleasing to the Athenians, and which must please in every age.

Aristophanes is said to have invented a peculiar kind of verse, which was called by his name, and is mentioned by Cicero in his "Brutus." Suidas tells us, that he likewise invented the "tetrameter" and "octameter" verse. Eleven of the fifty-four comedies said to have been written by this poet, still remain, and these belong entirely to the first æra, known by the name of "the Old Comedy." Of this kind of drama Eupolis, Cratinus, and Aristophanes, were the three most celebrated authors. Of "the Middle Comedy," he gave a specimen in his "Cocalus," that is now lost, in which he did not introduce real persons, as in his "Equites," "Clouds," and "Frogs," but fictitious ones. Madame Dacier observes, that there are but two of them, "Plutus," and the "Clouds," which, with a regard to decency, will admit of a translation into the modern languages. The design of the latter has been already mentioned. The former, written after the magistrates had given orders that no person should be exposed by name on the stage, was intended to reproach the Athenians with their avarice, which had been the occasion of their committing many errors in concerns of the greatest importance. This is the most esteemed of any of the comedies now extant. Euripides, to whom this poet had a particular aversion, is satirized in several of his plays, particularly in his "Frogs," his "Acharnenses," and his "Theſmophoriuzasæ." The best editions of Aristophanes are those of Kufter, Bergler, and Brunck. Gen. Dict. Travels of Anacharsis, vol. iv. p. 48, 53, &c. Nouv. Dict. Histor.

ARISTOPHANEUM, in *Ancient Physic*, a name given to a kind of emollient platter, prepared of pitch, wax, opopanax, apocyma, and vinegar.

ARISTOPHILI, in *Ancient Geography*, a people of Asia, in the Paropamisus. Ptolemy.

ARISTOTELIA, in *Antiquity*, annual feasts, celebrated by the citizens of Stagira, in honour of Aristotle, who was born there; in gratitude for his having procured from Alexander, the rebuilding and re-peopling of that city, which had been demolished by king Philip. It is said, that after his death at Chalcis in the island of Eubœa, they fetched away his bones, built an altar upon his tomb, called the place by his name, and held their assemblies there afterwards. Mandeville, in his fabulous account of his voyages, says, that this was still in being in his time; that is, in the fourteenth century. Ammon. in Vit. Aristot. Stanley's Hist. of Philos. p. iv. c. 8.

ARISTOTELIA (from Aristotle), in *Botany*, a small shrub, a native of Chili. Schreb. n. 816. L'Heritier stirp. VOL. II.

nov. 31. t. 16. Juss. 433. Class, *dodecandria monogynia*. Gen. Char. *Cal.* perianth one-leaved, five-parted; divisions lanceolate, concave, acute, upright. *Cor.* petals five, wedge-shaped, concave, erect, lying over each other at the sides, scarcely longer than the calyx. *Stam.* filaments fifteen, very short; anthers linear, shorter than the germ. *Pistl.* germ superior, roundish, rather three-cornered; style filiform, longer than the corolla; stigmas three, recurved. *Per.* berry subglobular, obtusely three-cornered, three-celled. *Seeds* two, or solitary in each cell, angular.

Ess. Gen. Char. *Cal.* five-leaved. *Cor.* five-petalled, berry three-celled. *Seeds* two in each cell.

Species, 1. *A. macqui*, shining-leaved Aristotelia; root woody; stem brachiate, round, grey, tubercled; branches spreading, beset with wart-like glands; leaves opposite, oblong-ovate, acuminate, ferrate; the younger leaves of a shining bright green, somewhat viscid, on foot-stalks; stipules in pairs, minute, like glands; peduncles racemed, axillary, nodding; flowers pedicelled, drooping, globose, herbaceous; calyx villose; style often trifid; berry the size of a pea, of a dark purple, becoming black. This small shrub is a native of Chili, whence it was first sent to Europe by Dombey, and known by the name of *macqui*. The inhabitants of Chili make a wine of the berries, which they give in malignant fevers. It is hardy enough to bear the open air in general. But in severe winters it ought to have the protection of a green-house. It flowers in April and May, and was introduced here about 1773, by Messrs. Kennedy and Lee. Loureiro has given the name of *Aristotelia* to a genus of the class *gynandria*, found in China.

ARISTOTELIAN, something that relates to the philosopher Aristotle.—Thus we say, an Aristotelian dogma, the Aristotelian school, &c. See ARISTOTLE.

ARISTOTELIAN *philosophy*, the philosophy taught by Aristotle, and maintained by his followers.

The Aristotelian is otherwise called the *Peripatetic philosophy*; the rise, progress, vicissitudes, and fate of which, see under ARISTOTLE, and PERIPATETICS.

ARISTOTELIANS, a sect of philosophers, otherwise called Peripatetics.

ARISTOTELICA *rota*. See ROTA.

ARISTOTLE, in *Biography*, was born at Stagira, on the coast of Thrace, in the beginning of the ninety-ninth olympiad, eighty-five years after the birth of Socrates, and 384 before the birth of Christ. Stagira, as well as the neighbouring Greek cities, enjoyed the precarious dignity of independent government: it was the ally of Athens in the Peloponnesian war, and, like other nominal allies, experienced the stern dominion of that tyrannical republic. The city of Stagira indeed owes its celebrity wholly to Aristotle and his family; and, if its name is still familiar to modern ears, this proceeds merely from having communicated to our philosopher the appellation of Stagirite. His father, Nicomachus, who was the physician and friend of Amyntas, king of Macedon, derived his descent through a long line of medical ancestors from Æsculapius the companion of the Argonauts, whose skill in the healing art had raised him to a seat among the gods. Nicomachus improved a branch of knowledge which was the inheritance of his family, by writing six books on natural philosophy and medicine. The mother of Aristotle was Pheltis. He lost his parents in early youth, but inherited from them a large fortune. He was left to the guardianship of Proxenus, a citizen of Atarna in Mysia, who received the young Stagirite into his family, and skilfully directed his education. At the age of seventeen, Aristotle was attracted by the

love of learning to Athens, and particularly by the desire of hearing Plato in the academy, the best school of science as well as morals then existing in the world, and where the most studious student might find competitors fit for exciting his emulation and sharpening his diligence. Plato early observed of him, that he required the rein rather than the spur. His industry in perusing and copying manuscripts was unexampled, and almost incredible; he was named, by way of excellence, the student or reader. Plato often called him the "soul of his school;" and, when Aristotle happened to be absent from his lectures, often complained, "Intellect is not here," and that he spoke to a deaf audience. As the student advanced in years, his acuteness was as extraordinary in canvassing opinions, as his industry had been unrivalled in collecting facts: his capacious mind embraced the whole circle of science; and, notwithstanding his pertinacity in rejecting every principle or tenet which he could not on reflection approve, his very singular merit failed not to recommend him to the discerning admiration of Plato, with whom he continued to reside twenty years, even to his master's death; alike careless of the honours of a court, to which the rank and connections of his family might have opened to him the road in Macedonia; and indifferent to the glory of a name, which his great abilities might have attained by establishing a separate school, and founding a new sect in philosophy. While Aristotle thus attended to the improvement of his mind, he did not neglect whatever might adorn his person. His figure was not advantageous; he was of a short stature, his eyes were remarkably small, his nose was high, his limbs were disproportionably slender, and he lisped or stammered in his speech. For his ungracious person Aristotle is said to have been anxious to compensate by the finery and elegance of his dress: his mantle was splendid; he wore rings of great value; and he shaved both his head and his face, while the other scholars of Plato kept their long hair and beards. This fondness for dress, however, neither altered his character, nor interrupted his ardent passion for knowledge. When he was about six and thirty years of age, he lost his master Plato. Of that sage he always spoke with a degree of respect approaching to veneration. Soon after Plato's decease, Aristotle wrote verses in his praise, and erected altars to his honour. The epitaph inscribed by Aristotle on the monument of his master, is preserved in a Latin version of an ancient life of Aristotle, written in Greek, and ascribed by some to Ammonius, and by others to Philoponus, and it is as follows:

"Gratus Aristoteles fruit hoc altare Platoni,
Quem turbæ injustæ vel celebrare nefas."

"To Plato's sacred name this tomb is rear'd,
A name by Aristotle long rever'd!

Far hence, ye vulgar herd! nor dare to slain
With impious praise this ever-hallow'd fame."

These extraordinary tokens of respect on the part of Aristotle, afford a presumption amounting almost to certainty, that there is no truth in the relation of which Aristoxenus is said to have been the original author, and which has been transmitted by Ælian, Diogenes Laertius, and others, that Aristotle gave great offence to Plato by the effeminate elegance of his dress, and by his pertness and loquacity; and that in resentment of the preference manifested by his master in favour of Xenocrates and Speusippus, he intruded into the school, perplexed Plato at the age of eighty, when his faculties were failing, with subtle questions, drove him from the academy, and took possession of the chair, till it was reclaimed for Plato by his disciple Xenocrates. In the Latin translation of the life of Aristotle above mentioned, this

columny is charged on Aristoxenus, who, as Suidas observes, entertained a personal enmity against Aristotle, for preferring Theophrastus to him in the succession of his school. For the assertion that Aristotle instituted a new school before Plato's death, we have, therefore, no sufficient authority. It has been also related by Ælian, (Var. Hist. l. v. c. 9.) whose testimony, indeed, does not deserve implicit credit, and also by Athenæus (Deipnosoph. l. viii. p. 354.) that Aristotle, in his youth, was so much addicted to pleasure as to spend his patrimony; that he afterwards entered into the army; and abandoning a military life, professed medicine, and practised pharmacy; till at length he was led by accident to turn his attention to philosophy. But the age at which he was admitted into the academy, and other circumstances, very much invalidate the credibility of this account. The connections which Aristotle had formed, at the time of his master's death, with some of the most illustrious, as well as the most extraordinary, personages of his own or any age, might naturally inspire him with the design of leaving Athens, after he had lost the philosopher and friend whose fame had first drawn him thither, and whose instructive society had so long retained him in that celebrated city. Aristotle might probably have directed his views to the succession in his deceased master's chair at the academy; and upon the election of Speusippus, disappointment and disgust might have furnished additional motives to his leaving Athens. Whatever might have been the case in this respect, Aristotle, while a boy at Atarna, had contracted an intimacy with Hermias, who, originally in a state of servitude, had been enabled by the bounty of a patron to prosecute the study of philosophy; and having become a fellow-student with Aristotle at Athens, soon united with him in the bands of affectionate esteem, which finally cemented into firm and unalterable friendship. Aristotle through life pursued the calm and secure paths of science, but Hermias ventured to climb the dangerous heights of ambition. His enterprising spirit, seconded by good fortune, raised him to the sovereignty of Assus and Atarna, Greek cities of Mysia. Thither, at the invitation of his royal friend, Aristotle repaired. At Atarna he found the wish of Plato realized; and in his friend Hermias, philosophy seated on a throne. In that city he resided near three years, enjoying the inexpressible happiness of seeing his enlightened political maxims illustrated in the virtuous reign of his fellow-student and sovereign. But Hermias being afterwards deposed, Aristotle was obliged to fly. When Hermias was put to death by Artaxerxes, king of Persia, Aristotle erected a statue of his friend in the temple of Delphos, and wrote in praise of him an epitaph, and a hymn to virtue; of which we have an elegant translation, with ingenious remarks, in bishop Hurd's Notes on Horace's Art of Poetry, v. 219. Aristotle, on this occasion, escaped to Mitylene in the isle of Lesbos, in company with Pythias, the kinswoman and adopted daughter of the king of Assus and Atarna, but now miserably fallen from the lofty expectations in which her youth had been educated. But this sad reverse of fortune only endeared her the more to Aristotle, who married the fair companion of his flight in his thirty-seventh year; which is precisely that age pointed out by himself as the fittest, on the male side, for entering into wedlock. Pythias died shortly afterwards, leaving an infant daughter, whom Aristotle named after a wife tenderly beloved, and who repaid his affection with the most amiable sensibility. Aristotle was now distinguished throughout Greece, and Philip of Macedon, acquainted with his fame, and apprized of his merits, early designed to request his acceptance of the tuition of his son Alexander, and at length prevailed on him to undertake the charge,

charge, in the fourth year of the 105th Olympiad, or the 341st before Christ, when Alexander was fourteen years of age. See ALEXANDER.

In the education of Alexander, the Stagirite spent near eight years, or five (Justin: Hist. l. xii. c. 16.), during which long period, in an office of much delicacy, he enjoyed the rare advantage of giving the highest satisfaction to his employers, while he excited the warmest gratitude in his pupil. But the ambition of Alexander had early taken root; and the peculiarities of his character had displayed themselves in a very public and very important transaction, which happened long before the Stagirite arrived at the court of Pella. This was his intercourse with the Persian ambassadors, which has been mentioned under the article ALEXANDER. In training such a youth, says Dr. Gillies, the Stagirite had a rich field to cultivate; but he could only hope to give a new direction to passions, which it was too late to moderate or controul. In his treatise on politics, he has carefully delineated the plan of education best adapted to persons of the highest rank in society; and, in performing the task assigned to him by Philip, this plan was to be skilfully modified, by adjusting it to the peculiar circumstances and extraordinary character of his pupil. Alexander's loftiness could not be conquered, but it might be made to combat on the side of virtue; if he was angry, it was proved to him that anger was the effect of insult, and the mark of inferiority. His love for military glory, which, while it is the idol of the multitude, will always be the passion of the great, could neither be restrained nor moderated; but, to rival this tyrant of his breast, still more exalted affections were inspired, which rendered Alexander as much superior to conquerors, as conquerors deem themselves superior to the lowest of the vulgar. Agreeably to a maxim enunciated in that book of Aristotle's politics which relates to education, the two years immediately following puberty constitute that important period of life, which is peculiarly adapted for improving and strengthening the bodily frame, and for acquiring that corporeal vigour which is one main spring of mental energy. During this interesting period of youth, with the proper management of which the future happiness of the whole life is so intimately connected, Aristotle observes that the intellectual powers ought indeed to be kept in play, but not too strenuously exercised, since powerful exertions of the mind and body cannot be made at once, nor the habits of making them be simultaneously acquired. In conformity with this principle, Alexander was encouraged to proceed with alacrity in his exercises, till he acquired in them unrivalled proficiency; after which, the whole bent of his mind was directed to the most profound principles of science. Aristotle having directed the studies of his pupil to such subjects as expanded and invigorated the understanding, proceeded to those which regulate private and public conduct. He carefully instructed his pupil in ethics and politics. He wrote to him, long afterwards, a treatise on government; and exhorted him to adjust the measure of his authority to the various characters of his subjects, agreeably to a doctrine which he frequently maintains in his political works, that different nations require different modes of government, respectively adapted to their various turns of mind, and different habits of thinking.

The influence which Aristotle acquired with his royal pupil he employed to beneficent purposes. One distinguished instance is his conduct to his native country. See ALEXANDER, ARISTOTELIA, and STAGIRA.

After the most intimate communication during the space of eight or nine years, the pupil and the preceptor separated for ever, to pursue, in a career of almost equal length, the most

opposite paths to the same immortal renown; the one by arms, the other by philosophy; the one by gratifying the most immoderate lust of power, the other by teaching to despise this and all similar gratifications. During his eastern triumphs, terminated in the course of ten years by his premature death, Alexander gave many illustrious proofs of gratitude to the virtuous director of his youth. Although the tutor declined accompanying his pupil in this expedition, their mutual regard was maintained by a friendly correspondence; and the conqueror furnished the philosopher with materials for his Natural History, by sending him, at a great expence, from different countries, a large collection of animals. See Plin. H. N. l. viii. c. 16. Athen. l. ix. However, in a subsequent period, Alexander's resentment against Callisthenes was transferred to Aristotle, and a mutual alienation took place between the philosopher and the prince.

Having taken leave of the Macedonian capital, Aristotle returned to his beloved Athens, where he spent thirteen years, almost the whole remainder of his life, instructing his disciples, and improving the various branches of his philosophy. Finding the academic chair occupied by Xenocrates, the successor of Speusippus, he obtained permission to apply to the purposes of public instruction a large building in the suburbs of the city, called the Lyceum, which had been used for military exercise. Accordingly, about the second year of the 111th olympiad, or the 335th year before Christ, he opened his school, and founded a new sect of philosophers, denominated, from the circumstance of his walking when he delivered his lectures, PERIPATETICS. Here he delivered his acroatic, acroamatic, or esoteric and exoteric philosophy; the former, consisting of physics and logic, and delivered to a select audience; the latter, composed of rhetoric, ethics, and politics, and delivered to the public at large. See ACROATICS. The talents and virtues of Aristotle exposed him to envy and calumny, and the found wisdom of his philosophy excited the hatred of the many pretenders that naturally abounded in such a reservoir of literature as Athens. He regarded with equal contempt, vain pretenders to real science; or real professors of sciences which he deemed unproductive of any beneficial purpose. "He fought," (says his modern biographer and interpreter), "only for truth, and was careless of the obstacles which stood in his way to attaining it, whether they were found in the errors of philosophers, or in the prejudices of the vulgar. Such a man, in such a city as Athens, where, since the days of Socrates, the learned taught publicly, and conversed freely with all descriptions of persons, could not fail to have many rivals and many enemies. Sophists and sciolists, footsayers and satirists, and that worst of bana satirical historians, heaped obloquy on a character, the ornament of his own age, and destined to be the instructor of posterity." In pretended piety, the enemies of Aristotle found the means of accusing a sage whose incomparable wisdom corroded their envy. After having taught thirteen years in the Lyceum with the highest reputation, he was charged with irreligion before the Arcopagus by the microphant Eurymedon, abetted by Demophilus, a person of weight in the republic, and both of them infligated to this cruel prosecution by our philosopher's declared enemies. The heads of the accusation were, "that Aristotle had commemorated the virtues both of his wife Pythias and of his friend Hermias, with such ceremonies and honours as the piety of Athens justly reserved for the majesty of the gods." Though these accusations were extremely frivolous, yet Aristotle was condemned, but escaped punishment by leaving the country. After making a rhetorical defence of himself, and accompanying it with a proverbial line:

“ Ὀχμι πρὸ ἄχμι γρησσει, σικκὸν δὲ πρὸ σικκου.”

“ Pears upon pears, and figs on figs grow here :”

importing that Athenians would always be Athenians, he withdrew from Athens, assigning this reason for his conduct, according to Ehan, (l. iii. c. 36). “ I am not willing to give the Athenians an occasion of being guilty of injustice a second time against philosophy ;” referring probably to the case of Socrates, and which he considered as similar to his own. In the second year of the 114th Olympiad, or the 324th year before Christ, Aristotle, accompanied by a few friends, retired to Chalcis in Eubœa, and there, in the sixty-third year of his age, and the third year of the 114th Olympiad, or 323 years before Christ, he died.

The cause and manner of his death have been variously represented. Suidas says, that he drank hemlock, because he had been called to account for the hymn written by him in honour of Hermias. Others, for it is needless to advert to the tales of monkish writers, report, that the occasion of his death was too intense an application to abstruse inquiries, and particularly so on the question concerning the tides of the Euripus, which ebbed and flowed seven times in a day. He was twice married; first to Pythias, and afterwards to Herpilis a native of Stagira, by whom he had a son named Nicomachus, to whom he addressed one of his treatises on morals. His constitution was infirm; but his health was preserved, and his life prolonged, notwithstanding close and sedulous application, by his temperance.

Aristotle exhibited a character as a man, worthy of his pre-eminence as a philosopher; inhabiting courts without meanness and without selfishness; living in schools without pride and without austerity; cultivating with ardent affection every domestic and every social virtue; manifesting on all occasions that regard to truth, which is emphatically expressed in the adage said to be his, “ Amicus Plato, Amicus Socrates, magis tamen amica veritas ;” while with indefatigable industry he reared that wonderful edifice of science, the plan of which we are still enabled to discover from his imperfect and mutilated writings.

Of Aristotle's writings the fate was as extraordinary as unmerited; few of them were published in his life-time; the greater part of them nearly perished through neglect. The manuscripts and library were bequeathed to Theophrastus, the most illustrious of his pupils. Theophrastus again bequeathed them to his own scholar, Neleus, who, carrying them to Sceplis, a city of the ancient Troas, left them to his heirs in the undistinguished mass of his property. The heirs of Neleus, men ignorant of literature and careless of books, totally neglected the intellectual treasure that had most unworthily devolved to them, until they heard that the king of Pergamus, under whose dominion they lived, was employing much attention and much research in collecting a large library. Afraid that the despotic power of the prince might seize so valuable an accession, they hid their books under ground; and the writings of Aristotle, as well as the vast collection of materials from which they had been composed, thus remained in a subterraneous mansion for several generations, a prey to dampness and to worms. At length they were relieved from their prison, or rather raised from the grave, and sold for a large sum, together with the works of Theophrastus, to Apellicon of Athens, a lover of books rather than a scholar (see APPELLICON), through whose labour and expence the work of restoring Aristotle's manuscripts, though performed in the same city in which they had been originally written, was very imperfectly executed. To this, not only the ignorance of the editors, but both the condition and the nature of the writings themselves, did not a little

contribute. (See Dr. Gillies's Life of Aristotle, vol. i. p. 35.) History has not informed us what became of Aristotle's original manuscript; but the copy made for Apellicon was, together with his whole library, seized by Sylla, the Roman conqueror of Athens, and by him transmitted to Rome. Tyrannion, a native of Pontus, who had been taken prisoner by Lucullus, procured the manuscript from Sylla's librarian. He communicated the use of it to Andronicus of Rhodes, who then flourished as a philosopher at Rome. See ANDRONICUS. The Rhodian having undertaken the task of arranging those long injured writings, finally performed the duty of a skilful editor. From the æra of Andronicus's publication to that of the invention of printing, a succession of respectable writers, on civil and sacred subjects (not excepting the venerable fathers of the Christian church) confirm by their citations and criticisms the authenticity of most of the treatises still bearing Aristotle's name. According to the most credible account, he composed above 300 different treatises, of which only 48 have been transmitted to the present age. But many of these last consist of several books; and the whole of his remains together still form a golden chain of Greek erudition, exceeding four times the collective bulk of the Iliad and Odyssey.

The works of Aristotle are referred to three heads, God, Nature, and Man. Whatever reasonings relate to theology, though scattered in different treatises, may be referred to his metaphysics; a name unknown, indeed, to Aristotle, but given to his theological works by his editors, and importing, that the fourteen books which bear it, should immediately follow his numerous treatises on the subjects of physics or natural philosophy; that we may not rest satisfied with the knowledge of bare effects, but proceed to the investigation of causes, and of the deity himself, the primary cause of all. In connection with his “ fourteen books under the title of metaphysics,” we may mention his treatise “ of the universe and its cause,” and “ a refutation of Xenocrates, Zeno, and Gorgias.” Aristotle's doctrines concerning Being considered abstractedly, concerning deity, and concerning the soul, are comprehended under the term “ metaphysics ;” because they *pass beyond* sensible bodies to objects that are perceived only by the understanding; and this branch of science is called by him “ the first philosophy.” The doctrine of Being, or ontology, is nothing more than the definition and arrangement of general terms; and from a series of definitions Aristotle deduces such corollaries as necessarily follow from them. The first principle or axiom, as he states it, of this doctrine is, that it is impossible that the same thing should be, and should not be, in the same subject, at the same time, and in the same respect. To this universal principle, which is itself incapable of demonstration, because it is a primary truth, all demonstration may be reduced. Being exists either by itself, or by accident; on the first all properties or accidents depend; but of the latter no certain knowledge can be obtained. Being may be either in power, or act; and power is either active or passive. The former is the principle of motion or change, and the latter consists in the subject upon which active power is exercised. Power remains when it is not exerted in action; and action takes place when a thing is otherwise than when it was in power. Again, Being is either notional, as it is conceived in the mind, or real, as it exists in nature. To unity, which is one of the properties of Being considered with respect to numbers, are nearly related, identity, equality, and similarity. Being also admits of genus and species. The doctrine of Aristotle concerning the First Mover, is more important. From the circular motion

motion of the heavens, which he conceives to be eternal, he deduces his notion of the First Mover; itself unmoved and eternal, which eternally communicates motion to other substances. This substance, the cause of eternal motion, is itself simple, pure energy, immaterial, eternal, and immutable; and its act, by which it is the first cause of all motion, consists in the simple energy of pure intelligence. This influence operates, independently and immediately, upon inferior intelligences of the same nature with itself; and by their agency the motions of the primary and subordinate spheres are produced. The First Mover is in its essence incorporeal; indivisible, because unity is perfect; immutable, because nothing can change itself; and eternal, because motion is eternal. This incorporeal intelligence, happy in the contemplation of himself and the first cause of all motion, is, according to the system of Aristotle, the Being of Beings, or God. Perplexed with difficulties in his conception of the mode by which motion was communicated, he resorted to analogy, and supposed that the First Mover acts upon the first celestial sphere to give it motion, in a manner similar to that by which the mind of man acts upon the human body. From the well-known fact, that the motion of the body follows the conceptions and volition of the mind, he assumed a certain intellectual influence, exercised by the First Mover, as the principle of local motion, and thus imagined that he had solved the great problem that had hitherto been found inexplicable, in what manner mind acts upon body.

Hence has arisen an inquiry, whether Aristotle is to be ranked in the class of Theists or of Atheists. From the preceding cursory view of his system, it appears that it does not exclude the idea of deity; for he speaks of the First Mover as a being distinct from the world, separate from matter, and possessing intellect, desire, and a power of communicating motion; upon whom the universe is dependent, not as upon an animating principle, but an external moving power. This being he represents as superior to all other intelligent natures, and calls him God. At the same time, Aristotle's notion of a deity cannot be reconciled with just conceptions of the divine nature and attributes. Although he makes God the cause of all motion, yet, by supposing the universe to have existed from all eternity, he divests him of the glory of creation, and connects him with a world already formed by a chain of necessity, for no other purpose than to make him the first spring of a vast machine. God indeed, in the system of Aristotle, is immutable; so is likewise the celestial sphere, in which he is supposed to reside. In producing motion he acts necessarily; and eternally employed in the contemplation of his own nature, he observes nothing, and cares for nothing beyond himself. Possessing neither immensity nor omnipresence, and far removed from the inferior parts of the universe, he is not even a spectator of its inhabitants and their concerns, and cannot therefore be a proper object of reverence and worship. As to those intelligent natures which he conceived to be inferior to the First Mover, Aristotle taught, that they are simple immaterial substances, presiding over the lower celestial spheres; but he has no where clearly determined, whether they were proper objects of religious worship. It is probable, that he ranked every thing of this kind among the popular superstitions, and that this was the cause of the complaints which were brought against him by the Athenians.

On the subject of Mind, Aristotle asserted with Plato, that there are in man different faculties, which have respectively a different organ; but he expresses himself in such obscure terms, that it is not easy to perceive his true meaning. The soul, which is the first principle of action

in an organized body, possesses life potentially, but does not move itself. It is not a rare body, composed of elements; for it differs from these in having perception. It has three faculties, the nutritive, the sensitive, and the rational. The first is that by which life is produced and maintained. The second is that by which we perceive and feel, without perceiving itself or its organs, but some external object by the intervention of its organs, which are adapted to produce the sensations of sight, hearing, smell, taste, and touch. The external senses, by means of sensible species or forms that are immaterial, perceive objects as wax receives the impression of a seal without receiving any part of its substance; but the difference of these objects is perceived by the common or internal sense. Perception differs from intellect; the former being common to all animals, the latter belonging to a few. Fancy is the perception produced by the immediate action of the senses. Memory is derived from fancy, and has its seat in the same power of the soul; being the effect of some image impressed upon the soul by means of the senses. Reminiscence is that mental faculty, by which we search for any thing which we wish to recollect, through a series of things nearly related to it, till at last we call to mind what we had forgotten. The intellect is that part of the soul by which it understands; and it is passive and active: the former being the seat of the species or forms of things, and the latter the efficient cause of all knowledge. The principle of local motion is the desire or aversion which arises from the practical exercise of the understanding; and it produces either rational volition or sensitive appetite. The production of animal life arises from the union of the nutritive soul with animal heat. Life is the continuance of this union, death its dissolution.

As to the Soul or first principle of animal life, and of all perception, intelligence, or action, Aristotle was at a loss in explaining its specific nature. He could only define the mind to be that principle by which we live, perceive, and understand. When he attempted to form an abstract conception of this principle, he was perplexed; and he was so unacquainted with the nature of this substance, or so undecided in his opinion, or perhaps so anxious to conceal it, that he recurs to the use of a term, which merely expresses the confused idea which he had formed to himself from observing its operations, and called *Εντελεχεια*, or "perfect energy," denoting some unknown source of sensitive and rational life in certain organized bodies. It does not certainly appear from the writings of Aristotle, whether he thought the soul of man mortal or immortal; but the former appears most probable, from his notion of the nature and origin of the human soul, which he conceived to be an intellectual power, externally transmitted into the human body from an eternal intelligence, the common source of rationality to human beings. We have no evidence that he supposed the union of this principle with any individual to continue after death.

Aristotle's histories of the heavens and of the earth; of animals, plants, and minerals; and even of man, considered merely as a material and sentient being, may, conformably with modern language, be arranged under the head of Nature; though, in Aristotle's own acceptation, that term has a more limited sense; and is confined to terrestrial objects, and those existing between this earth and the lunar sphere.

The physical writings of Aristotle are the following: "Of Physics, or the Doctrine of Nature;" explaining the principles and properties of natural bodies: "Of Heaven;" treating of the universe, the celestial spheres, and simple bodies or elements: "Of Generation and Corruption;" "Of Meteorology;" "Of the History of Animals;"

"Of

A R I S T O T L E.

• Of the parts of Animals and their Causes;” “ Of the Production of Animals;” “ Of the Progression of Animals;” “ Of the Soul, or Vital Principle;” “ Of the Senses;” “ Of Memory;” “ Of Sleep;” “ Of Dreams;” “ Of Animal Motion;” “ Of the Length of Life;” “ Of Youth and Old Age;” “ Of Respiration;” “ Of Plants;” “ Of Breath;” “ Of Marvellous Facts;” “ Of Physiology.” “ Of Sounds;” “ Of Colours;” and “ Problems.”

In Aristotle's system of *Physics*, the principles of nature are neither the “similar part” of Anaxagoras, nor the “atoms” of Leucippus and Democritus, nor the “sensible elements” of Empedocles, nor the “unity” of Parmenides, nor the “numbers” of Pythagoras, nor the “Idea” of Plato; but they were the three following, viz. “form, privation, and matter;” the two former being contrary to each other, and the latter the common subject of both. Matter, according to Aristotle, is a primary substance without quantity or quality, form or figure, or any of the properties of body. This incorporeal matter, though really borrowed from the Pythagoreans, Aristotle claimed as his own invention, and he boasted of his having been the first who had discovered the true principle of bodies. Form is the peculiar nature or essence of any thing, or that which makes it to be what it is. Privation is the absence of form, so that matter and form are the constituent principles of things, and privation is accidentally associated with them. In order to unite matter and form, Aristotle for this purpose conceived in his mind a vague notion, which he has very obscurely and unsatisfactorily explained, of some internal cause of motion and arrangement, to which he applied the term “nature.” Causes are distinguished by this philosopher into four kinds; material, of which things are made; formal, by which a thing is that which it is, and nothing else; efficient, by the agency of which any thing is produced; and final, or the end for which it is produced. Substances he divides into eternal, as the heavens which revolve round the earth with a circular motion peculiar to the celestial spheres; and perishable, as animal or terrestrial bodies. The heavenly sphere has neither levity nor gravity, is liable to no change, and is eternal. Its natural motion is circular, but there are other spheres which move in a contrary direction to this, in order to produce the vicissitudes of terrestrial things. The motion of the first sphere, or “primum mobile,” is equable and uniform; and this the first mover being eternal and immutable. The stars are of the same nature with the spheres that support them, but more dense; and they communicate light and heat to the air, and thence to the inferior world, by means of friction; and they are moved in consequence of the motion of the spheres, in which they are placed. The earth is spherical, and immoveably fixed in the center of the motion of all the spheres. The first sphere revolves with the greatest velocity from west to east, and the inferior spheres in a contrary direction. The velocities of the spheres of the seven planets are inversely as their distances from the first sphere. The world, according to this philosopher, is finite and eternal; and there is only one world. Bodies, according to his system, are either simple elements produced by the union of the first matter and form, or compound terrestrial bodies produced from the combination of elementary bodies. The elements are four, namely, fire, air, water, and earth. The two principles of motion are gravity and levity; by the former, bodies descend towards the center of the world, and by the latter, they rise towards the heavens. The element of earth has simple gravity; that of fire, simple levity; air and water partake of both. Compound bodies suffer a perpetual succession of dissolution and production; and this change is effected by the action of the

circular motion of the heavens, by means of which the sun and stars, which are the immediate agents in production and dissolution, approach towards or recede from the earth. An action and a passion that are reciprocal arise from the mutual contact of different bodies. In sensible bodies there are certain primary qualities, some active and others passive, which constitute their specific difference. Of this kind are heat and cold, moisture and dryness, heaviness and lightness, hardness and softness, roughness and smoothness, and the like. From the union of the two first of these pairs of primary qualities, the elements are formed, as fire, from heat and dryness; air, from heat and moisture; water, from cold and moisture; and earth, from the union of cold and dryness. All the elements may be transmuted; and all mixed bodies are formed by the combination of all of them. From the general principles of production and dissolution, and from the mutual action and passion of the simple qualities, Aristotle endeavours to assign the causes of natural appearances, and to explain the nature of mixed bodies, both perfect and imperfect. In his speculative physics, Aristotle displays an extensive practical knowledge of nature. His writings in natural history are a continued chain of physical and anatomical facts, which appear to have been the result of accurate observation. He collected by diligence, and by the assistance of others, and particularly of Alexander his pupil, a great number of natural bodies which he accurately examined; and he appears to have himself dissected, or to have been present at the dissection of, many animals, especially of fishes.

Upon the philosophy of man, as our author calls it, that is, of man considered as a social and rational being, endowed with sentiment, affection, and intellect, Aristotle's writings are as clear and copious as they are solid and satisfactory. His treatises on logic, ethics, and politics, as well as his books on rhetoric and poetry, may all be referred to this one head, and viewed as connected parts of one great system of knowledge. In the most important, “ethics,” contained in ten books to Nicomachus, seven to Eudemus, two entitled “the greater morals,” and a small part comprehending definitions of “virtues and vices,” he considered, in the first place, their object, to wit, happiness; and afterwards the faculties of the mind, their exertions and determinations which tend to produce happiness. The excellencies of our species, he observes, all refer either to the understanding or the will; the first possesses reason essentially in itself, the second is capable of being combined and assimilated with this divine principle. From the two powers of the understanding and the will, are respectively derived two classes of virtues, the intellectual and the moral. Sagacity, penetration, intelligence, wisdom, are virtues of the understanding; gentleness, temperance, fortitude, justice, are virtues of the heart. The former class consists in the proper disposition and habit of the intellectual part of the soul; the latter in the proper disposition and habit of the desires and affections, which being formed subordinate to reason, and capable of listening to its dictates, then only perform their duty, when, like obedient subjects, they cheerfully observe the commands of their sovereign. The intellectual virtues depend chiefly on education and exercise; the moral proceed entirely from habit, from which they derive their name. It is by practising justice, that we become just; by practising temperance, that we become temperate; by practising courage, that we become courageous. Hence the wonderful power of legislation and early institution, by which the Cretans, the Spartans, and some other nations were honourably distinguished among the rest of mankind. Virtue is a practical art, and like all practical arts, can be preserved by practice only. It is neither

ether natural, nor contrary to nature. We are born capable of attaining it, but the invaluable attainment must be made and perfected by habit. The virtues depend on the propriety of the affections from which they arise; and lye in a mean betwixt the extremes of too much and too little. Thus, to fear every thing is cowardly; to fear nothing is audacious; courage requires that we should fear only such objects as are truly formidable, and only in that degree in which they ought to be feared. In the same manner, he who is too much affected by objects of pleasure, and seizes every opportunity to enjoy them, is called intemperate; he who is too little affected by such objects, and refuses every opportunity to enjoy them, may be called insensible. Temperance teaches us to pursue only such pleasures as we ought, at proper times, in proper places, and on proper occasions. According to the same view of things, generosity lies in the middle between avarice and profusion; modesty, between pride and diffidence; mildness, between irascibility and softness; magnificence, between ostentation and parsimony; popularity, between forbidding disdain and officious adulation; in a word, every virtue consists in a mean equally remote from two vicious extremes. Considered as the quality of an action, virtue consists in the propriety of that affection from which the action proceeds, when the affection is neither too strong, nor too weak, but has precisely that degree of strength which right reason teaches us to approve. As the quality of an action, virtue consists therefore in mediocrity; but as the quality of a person, it consists in the habit of this mediocrity, since in judging persons and characters, we regard not particular acts and feelings, but such acts and feelings as are frequent and habitual. There are many, and those the most important virtues, the exercise of which is not in the first instance attended with pleasure. To support labour, to endure pain, to encounter difficulties and dangers, which wisdom and fortitude on many occasions require, are not obviously recommended by any natural desire; nor is the practice of such duties immediately agreeable. It is still less agreeable, at first, to curb and restrain our natural appetites for pleasure, which is the proper office of temperance; nor can that vigilant circumspection, and ever-watchful attention to the most remote consequences of our actions, which is essential to the virtue of prudence, be acquired without trouble and care, without many painful efforts and difficult struggles. Yet it is the nature of all those virtues, as well as of the hardest lessons of justice, patriotism, and friendship, to become through habit agreeable; and the only sure test that we have acquired them is, that they are practised with pleasure. The moral virtues cannot, according to Aristotle, subsist without some mixture of the intellectual; but the latter may subsist alone and independent; and according to both Aristotle and Plato, the purest and most permanent felicity of which man is susceptible, results from the exercise of his rational powers upon subjects of abstract speculation. The labours of the statesman or general, the exertions of the legislator or patriot, all refer to some end or purpose, the attainment of which may be prevented by fortune, or frustrated by the weakness or wickedness of man. The practice of justice, generosity, temperance, and fortitude requires many conditions, and supposes a variety of situations, which it is not always in our power to command. The just or generous man must have objects to whom he may distribute his justice or generosity; he must possess the means by which to exercise those virtues which all participate of frail mortality; since, though directed by prudence, they are impelled by passion, and result from the exigencies of our present corporal state. But the energies

of contemplative wisdom are pure and simple, like the intellectual source from which they spring. Not subservient to remote purposes or contingent ends, they are immediately agreeable on their own account, and on every side round and complete in themselves. Such are the principal doctrines to be found in Aristotle's "*Ethics*."

His treatise on "*Politics*," comprehending eight books, in the very first paragraph, in a few plain words, states the only legitimate purpose of political establishments. "Every political society forms, it is plain, a sort of community or partnership instituted for the benefit of the partners. Utility is the end and aim of every such institution; and the greatest and most extensive utility is the aim of that great association comprehending all the real, and known by the name of the commonwealth."

Having stated and explained the grand purposes of society, he considers the best systems of means for attaining those purposes, and traces the distinction of ranks which arises from the inequalities of individual talents, virtue, and fortune. Political institutions are best fitted for promoting human happiness, when they are most suitable to the opinions and sentiments of the people, and the circumstances of the times and country. No one political system will equally suit all situations, and scarcely any two. Government being an arrangement, the best government must be the best arrangement, and the best arrangement is that in which the materials to be arranged are the best fitted both to receive and to preserve. The materials of the statesman or legislator are the number and character of his people, and the extent and quality of his country. The excellence of a commonwealth, however, is not to be estimated by its populousness or extent, but by its fitness for performing its proper functions; the same energies and habits constitute the happiness both of individuals and of nations. Men make governments, not governments them; nor by any system of political arrangements can a happy commonwealth be constituted from fools or cowards, profligates or knaves. The bricks must be first prepared, before the edifice can be reared. The human character is a compound of good and evil; the former arises from the balance of the affections, under the controul and guidance of reason, the latter results from passion operating without restraint. That government is the best, which most powerfully stimulates the energies of the people to beneficial purposes, and restrains them from hurtful pursuits. That must be a system of freedom in the first place tempered by order, and moderation in the second. Mixed governments, wisely formed and balanced, best correspond to the state of mankind. Democracy, though apparently most agreeable to the rights of man, is not the best adapted to his wants; the general will unrestrained is apt to run into excess, and precipitate in deliberation, to be tardy in execution. While simple democracy is inexpedient for the people themselves, simple aristocracy and simple monarchy are equally inexpedient; and being the subjection of the many to a few or to one, are moreover unjust. For these reasons Aristotle recommends a constitution that combines and balances the three orders as the most generally likely to promote the good of society. To his treatise on politics, Aristotle has added two books on "*Oeconomics*," in which he has treated in a similar way, on the management of domestic concerns.

In "*Logic*," or the art of reasoning, in which Aristotle has the merit of being an inventor, his writings are, "The Categories," or ten general heads of arrangement; "of Interpretation," explaining the philosophical principles of Grammar; "Analytics," including the whole doctrine of syllogisms and demonstration; "Topics," or common-places of arguments; and "Sophistic Refutations,"

tions," teaching the art of replying to an opponent. These pieces collected in one volume, are called the "Organon of Aristotle." The arrangement of the ten CATEGORIES (which see) was borrowed from the Pythagorean school, and is said to have been first invented by ARCHYTAS of Tarentum, and communicated to Aristotle by Plato, who conversed with this Pythagorean in Italy. The art of syllogistical reasoning (see SYLLOGISM), was perhaps altogether the invention of Aristotle; and, whatever may be thought of its utility, it must be allowed to have been a wonderful effort and display of ingenuity. On the invention and application of syllogisms, Aristotle treats with a degree of minuteness and subtlety, which produces obscurity. His logical dissertations would have been clearer, as well as more concise, if he had carefully distinguished between words and ideas, and confined his attention chiefly to the latter. The reader will find a distinct account of the logic of Aristotle, by Dr. Reid, in the second volume of lord Kaimes's Sketches of the History of Man. Edinb. 4to. 1774, p. 165. See also the articles DEMONSTRATION, DIALECTICS, LOGIC, PROPOSITION, SYLLOGISM, &c. in this work.

The "*Rhetoric*" of Aristotle is comprised in three books, in which the principles of eloquence are investigated, and the whole art of oratory taught with so much depth of invelligation, and accuracy of arrangement, that the work has been the basis of all that has been since delivered upon the subject by Cicero, Quintilian, and later writers. See ORATORY. Another treatise, addressed to Alexander, is added, in which are distinctly considered the several species of discourse belonging to the general heads of deliberative, demonstrative, and judicial pleading.

On the subject of "*Poetry*," the "Poetic" of Aristotle affords a correct analysis of the constituent parts of the drama and the epic; and contains general principles and particular observations, which could only have been written by a master in criticism.

The pieces on "*Mathematics*" which Aristotle has left, are, an obscure, and probably imperfect treatise on "Incommensurable Lines," and a book of "Questions in Mechanics."

Although among the works of Aristotle, nothing written expressly on Music has come down to us, if we except his tract *περὶ ἁρμονίας*, and the nineteenth section of his Problems; yet we find from these, and from his works in general, that he had thought much and deeply on the subject. Indeed among the titles of two hundred and fifty of his lost books, which have been collected by Fabricius, a work on Music appears, *Περὶ Μουσικῆς*, written expressly on the subject. We shall therefore do the art and science of Music the honour to rank this great, this first of men, among its benefactors.

For a further account of the reception, progress, and decline of the Aristotelian philosophy in the middle and in later ages; see PERIPATETICS. See also LOGIC, METAPHYSICS, PHILOSOPHY, PHYSICS, &c.

Having given a copious account of the life and writings of Aristotle, to which his distinguished talents, his rank as an author, his personal merit, and his reputation, and influence in the various departments and seminaries of literature for many ages, gave him a just claim, and without which a work of this nature must have been essentially imperfect; it may not be improper to collect a few particulars that may serve to aid us in appreciating his literary character as well as the importance and utility of his writings. Whilst we disregard the fictions of calumny and panegyric, we shall not unduly extol his talents and virtues, nor degrade them below their just standard. On the one hand, no credit can be attached to the abuse of Timæus the Tauromenite, who represents him as a pretender to learning, a vile parasite, and an habitual glut-

ton and drunkard; nor to the cavils that were raised against his reputation, in consequence of the honour he paid to the memory of his friend Hippias, and that of his wife Pythias; and, on the other hand, there is no foundation for ascribing his extraordinary wisdom to divine revelation; nor are we sufficiently authorized to say with the Jews, that he gained his philosophy in Judæa, and borrowed his moral doctrine from Solomon; much less that he was of the seed of Israel and the tribe of Benjamin; or with the Chrillians, that he was a special messenger, supernaturally ordained to prepare the way for divine revelation, and that we are indebted to the aid of his philosophy for the extent and accuracy of our acquaintance with the sublime mysteries of religion. Although we cannot believe that just before his death, he discoursed to his friends concerning "the contempt of death, and the immortality of the soul;" that in his last moments he dictated a book in order to shew, that wise men need not lament their exit from their tenement of clay, of which book, an Hebrew version of the Arabic translation from the supposed original was rendered into Latin, about the year 1200, by Maufred, son of the emperor Frederic I.; yet we cannot allow that either his doctrine or his life warranted his being condemned as an advocate for immorality or impiety, much less that he was the most infamous of human beings. On a fair and impartial estimate, it will perhaps be found, that neither were his virtues of that exalted kind which command admiration, nor his faults so criminal as not to admit of some apology. He may, perhaps, be justly censured for having taught his pupil Alexander principles of morals and policy, which were accommodated to the manners of a court, and which might be easily rendered subservient to his ambitious views. And it cannot be doubted, that his philosophical doctrines concerning nature were not favourable to the public forms of religion. Few will now be found such extravagant admirers of Aristotle as to join with Snidas in extolling him as "the secretary of nature," and as "having dipped his pen in intellect;" and yet all must admit, that he possessed a profound and penetrating genius, and a wonderful talent for classing ideas, defining terms, and analyzing the faculties and operations of the human mind. He had also, without doubt, an extensive acquaintance with natural objects, and he was a diligent observer of physical and moral phenomena. If he had bestowed that attention on the discrimination and arrangement of natural bodies which he devoted to words, he might have been a Linnæus; or if he had, according to the modern mode of philosophizing, deduced general principles from facts and experiments, he might have been a Bacon, a Boyle, or a Newton. Instead of doing this, his ambition to stand distinguished among philosophers as the founder of a new sect induced him to try his strength in abstruse disquisitions, and to indulge a too daring spirit of contradiction and innovation. His object was to erect his own edifice upon the ruin of every other structure. As lord Bacon has finely remarked (*De Augm. Scient. l. iii. c. 4.*), "like a Turkish despot, he thought he could not reign secure, unless all his brethren were slain. Innovating rather in words than in reality, and determining to oppose his new philosophy to ancient tenets, of which many were founded on truth and experience, he sometimes misrepresents the opinions of former philosophers; sometimes selects those which were most trifling, or most easily refuted; and sometimes has recourse to uncertain principles and vague terms, in hopes that obscurity might be mistaken for novelty. Having acquired the habits and manners of high life at the court of Amyntas to which his father introduced him, and having occasion, as preceptor to Alexander, to accommodate

his philosophy to the ambition of the young prince with whose education he was entrusted, he deserted the fanciful republic of Plato, and finding the morals of Socrates too confined for his purpose, framed a system of ethics for himself, which would allow full scope for the aspiring views of Alexander and his friends. Even the Syllogistic art, which was peculiarly his own, is very materially defective, tends to mislead by multiplying hypothetical propositions, or by teaching the practice or detection of sophistry, and affords little or no assistance in the investigation and discovery of truth. The conclusion in every syllogism is, in fact, contained in the premises; if the premises have not been previously proved by other means than syllogistic reasoning, the conclusion is not established; if they have, the syllogism is unnecessary; so that, as Dr. Reid observes in his account of Aristotle's logic (*ubi supra*), other kind of reasoning, independently of observation and experiment, only carries a man round, like a horse in a mill, without any real progress. Upon the whole, it has been observed by competent and candid judges, that the philosophy of Aristotle is rather the philosophy of words than of things, and that the study of his writings tends more to perplex the understanding with subtle distinctions than to enlighten it with real knowledge. The veneration that was paid to him in the Arabian, Jewish, and Christian schools, was rather the means of obstructing than of aiding and promoting the progress of useful science. It was not, as an excellent biographer remarks, till mankind were emancipated from their vassalage to Aristotle, that the human mind asserted its native freedom and dignity, and that genuine science began to enlighten the world. The principal writings of Aristotle have been often separately printed; and of his entire works, the chief editions are, Gr. 6 vols. fol. ap. Ald. Venet. 1498. 6 vols. 12mo. Ald. 1552. 10 vols. 4to. Sylburgii, Franc. 1587. Gr. and Lat. fol. Casauboni, Lugd. 1590. 1646, fol. Gener. 1605. 8vo. Lugd. 1597. 2 vols. fol. Du Val, Paris, 1629, 1654. Vid. Diog. Laert. t. i. p. 263. Dion. Halicarn. t. ii. p. 193. Suidas. Fabr. Bibl. Græc. l. iii. c. 6. t. ii. p. 107, &c. Brucker's Hist. Phil. by Enf. vol. i. p. 255—288. Gen. Dict

ARISTOTUS, in *Ichthyology*, a name given by Albertus and some other old writers to the fish which we call the *skad*; *CLUPEA Alofa*. Linn.

ARISTOXENUS, in *Biography*, is the most ancient Greek writer on the subject of music that has come down to us. He was the son of a musician, whom some call Mnesias, others Spintharus. He had his first education at Mantinea, a city of Arcadia, under his father, and Lampus of Erythra; he next studied under Xenophilus, the Pythagorean, and lastly under Aristotle, in company with Theophrastus. Suidas, from whom these particulars are transcribed, adds, that Aristoxenus, enraged at Aristotle having bequeathed his school to Theophrastus, traduced him ever after. But Aristotle the Peripatetic, in Eusebius, exculpates Aristoxenus in this particular, and assures us that he always spoke with great respect of his master Aristotle.

From the preceding account it appears that Aristoxenus lived under Alexander the Great, and his first successors.

His *Harmonics* in three books, all that are come down to us, together with Ptolemy's *Harmonics*, were first published by Gogavinius, but not very correctly, at Venice, 1562, in 4to. with a Latin version. John Meursius next translated the three books of Aristoxenus into Latin, from the MS. of Joseph Scaliger, but, according to Meibomius, very negligently. With these he printed at Leyden, 1616, 4to. Nicomachus and Alypius, two other Greek writers on music. After this Meibomius collected these musical writ-

ers together, to which he added Euclid, Bacchius senior, Aristides Quintilianus; and published the whole with a Latin version and notes, from the elegant press of Elzevir, Amst. 1652. The learned editor dedicates these ancient musical treatises to Christina, queen of Sweden.

Aristoxenus is said by Suidas to have written four hundred and fifty-two different works, among which those on music were the most esteemed; yet his writings upon other subjects are very frequently quoted by ancient authors, notwithstanding Cicero, and some others, say that he was a bad philosopher, and had nothing in his head but music. The titles of several of the lost works of Aristoxenus, quoted by Athenæus and others, have been collected by Meursius in his notes upon this author; by Tenison and Menage; all which Fabricius has digested in alphabetical order. We shall here only mention such as concern music, which are upon subjects so interesting to inquirers into the merits of ancient music, that their loss is much to be lamented. 1. "Of Performers on the Flute, and concerning Flutes and other musical instruments." 2. "Of the Manner of boring or piercing Flutes." 3. "Of Music in general." In this work, which was different from his *Harmonics*, he treated not only of the rhythmical, metrical, organical, poetical, and hypercritical parts of music, but of the history of music and musicians. 4. "Of the Tragic Dance." With respect to the tracts of Aristoxenus that are come down to us, they are cited by Euclid, Cicero, Vitruvius, Plutarch, Diogenes Laertius, Athenæus, Arist. Quintilianus, Ptolemy, and Boethius. And as a musical writer, he is so much celebrated by the ancients, and so frequently mentioned by the moderns, that his treatises which are extant, seem to deserve a particular attention. They are given by all his editors as divisions of one and the same work; but the two first books are evidently independent fragments. The second book is not a second, but another first part. It is surprising that Meibomius should regard it as a continuation, and wonder in his notes, that Porphyry should quote the second book as the first. The second book is plainly the opening of another work, as appears by its beginning with an explanation of the subject, and a sketch of the order in which the author proposed to treat it, all which is done in the first book. It is likewise full of repetitions. There appears, however, through the cloud of bad readings, and all kinds of corruptions in the text, to be an accuracy, and an Aristotelian precision in these old books, which are not to be found in later writers, who seem to have all the negligence and inaccuracy of compilers.

As Pythagoras and Aristoxenus were heads of the two most numerous and celebrated musical sects in antiquity, we shall endeavour to make such of our readers as are curious in these matters, acquainted with their different tenets.

The Pythagoreans, by their rigid adherence to calculation, and the accurate divisions of the monochord, may be said to have trusted more to the judgment of the eye, concerning the perfection of consonance, than to that of the ear. Intervals, according to them, were consonant or dissonant, in proportion as the ratios of the vibrations were simple or complex. Thus the octave was more perfect than the 5th, because the ratio of 1 to 2 is more simple, and more easily perceived, than that of 2 to 3; and the 5th, for the same reason, was more perfect than the 4th, $\frac{3}{4}$. It was upon this principle that they allowed of no deviation from the strict ratios of sounds. They left nothing to the uncertain judgment of the ear, which they thought no more able to determine a perfect consonance without a

monochord, than the eye to form a perfect circle without compasses.

Aristoxenus, on the contrary, referred every thing to the ear. He thought the senses sufficiently accurate for musical, though not for mathematical purposes; and that it was absurd to aim at an artificial accuracy in gratifying the ear, beyond its own power of distinction. The philosophy of the Pythagoreans, their velocities, vibrations, and proportions, he rejected with contempt, as being foreign to the subject; substituting abstract causes in the room of experience, and making music less the object of sense than of intellect.

According to these principles, his doctrine maintained, that concords were to be taken by the judgment of the ear only, and other intervals at which the ear was less able to determine the perfection, by the difference, or sum of concords. Thus the tone was the difference between the 4ths and 5ths: the ditone was taken by alternate 4ths and 5ths: as Ea, ad, DG, GC. Had he stopped here, nothing could reasonably have been alleged against him. But, taking the tone as a well-known interval, of which the ear, from the comparison of 4th and 5th, could judge with sufficient exactness, he made it the measure of all other intervals; of the greater by addition, and of the less by division. Thus the 4th contained, according to him, two tones and a half; the 5th, 3 and $\frac{1}{2}$; the octave, consequently, 5 tones and 2 semi-tones, or 6 tones. And, further, the tone he divided into 2, 3, and 4 equal parts. By this process, as it is justly objected to him by Ptolemy, he acted inconsistently with his own principles, pretending to trust solely to the ear, and to exclude reason and calculation, at the same time that he was making a parade of both, in a way either totally useless and nugatory, or more complicated and difficult than that which he had rejected. If the ear is unable to determine the exact ratio of a concord, still less is it able accurately to bisect a tone; and that a tone cannot be numerically divided into two, or more equal parts, has long been demonstrated. It can only be done by geometrical and lineal methods, more operose than the calculations of Pythagoras, and which, if accomplished, would give only false, incommensurable, and tempered intervals. Aristoxenus seems to have been led into this inconsistency by his desire of distinguishing himself from the mere practical musicians of his time, of whose inaccuracy and want of science he frequently speaks with great contempt.

The Pythagoreans, on the other side, were not without their errors. The principles were right, but they carried them too far, and forgot that they could not otherwise be known to be right, than as they were confirmed by the pleasure of the ear. How, for instance, did they know that the ratio from 2 to 3 was that of a perfect fifth but by the ear, which, upon repeated trial, found that interval most harmonious when produced by strings in that proportion? But it was the peculiar character of the Pythagorean philosophy, to erect abstract numbers and proportions into physical causes. Not content with pursuing their principle of the simplicity of ratios, as far as experience warranted, and the ear approved, they set it up as an *à priori* principle, and rejected intervals which the ear pronounced to be concords, merely because they did not fall within the proportions which they chose to admit. The compound interval, for instance, of the 8th and 4th, though undoubtedly concord, they would not admit as such, because its ratio, 3:8, is neither multiple nor superparticular, the only proportions they admitted as consonant, on account of their simplicity.

They are, besides, charged both by Ptolemy and Aristoxenus, with sometimes assigning such ratios to intervals as the ear did not approve; but no instance is given. It would be injustice, however, to quit these famous musical theorists, without acknowledging that their physical doctrines concerning the production of sound, and the causes of gravity and acuteness, have been confirmed by modern philosophy, and their metaphysical speculations concerning the causes of consonance, adopted by modern writers of no inconsiderable reputation. Gen. Hist. Mus.

ARITHMANCY. See ARITHMOMANCY.

ARITHMETIC, formed from *αριθμος*, *number*, the art of numbering; or, that part of mathematics, which considers the powers and properties of numbers, and teaches how to compute or calculate truly, and with expedition and ease. By some authors it is also defined to be the science of discrete quantity. It consists chiefly in the four great rules or operations of addition, subtraction, multiplication, and division: to which may also be added involution and evolution.

Besides these, for the purpose of facilitating and expediting computations, mercantile, astronomical, &c. several other useful rules have been contrived; as, the rules of proportion, progression, alligation, false position, fellowship, interest, barter, rebate, equation of payments, reduction, tare and tret, &c.—But these are only applications of the first four rules. See these rules under their several heads, ADDITION, &c.

Concerning the origin and invention of arithmetic, we have very little information; history fixes neither the author nor the time. Some knowledge, however, of numbers must have existed in the earliest ages of mankind. This knowledge would be suggested to them, whenever they opened their eyes, by their own fingers, and by their flocks and herds, and by the variety of objects that surrounded them. At first, indeed, their powers of numeration would be of very limited extent; and before the art of writing was invented, it must have depended on memory, or on such artificial helps, as might most easily be obtained. To their ten fingers they would, without doubt, have recourse in the first instance; and hence they would be naturally led to distribute numbers into periods, each of which consisted of ten units. This practice was common among all nations, the ancient Chinese, and an obscure people mentioned by Aristotle, excepted. But though some kind of computation must have commenced at a very early period, the introduction of arithmetic as a science, and the improvements it underwent, must, in a great degree, have depended upon the introduction and establishment of commerce: and as commerce was gradually extended and improved, and other sciences were discovered and cultivated, arithmetic would be improved likewise. It is therefore probable, that if it was not of Tyrian invention, it must have been much indebted to the Phœnicians or Tyrians. Proclus, indeed, in his Commentary on the first book of Euclid, says, that the Phœnicians, by reason of their traffic and commerce, were the first inventors of arithmetic; and Strabo also informs us, that in his time it was attributed to the Phœnicians. Others, however, have traced the origin of this art to Egypt; and it has been a general opinion, sanctioned by the authorities of Socrates and Plato, that Theut or Thot was the inventor of numbers; that from hence the Greeks adopted the idea of ascribing to their Mercury, corresponding to the Egyptian Theut or Hermes, the superintendance of commerce and arithmetic. With the Egyptians we ought also to associate the Chaldæans, whose astronomical disquisitions and discoveries,

series,

veries, in which they took the lead, required a considerable acquaintance with arithmetic.

From Asia it passed into Egypt, as Josephus says, by means of Abraham. Here it was greatly cultivated and improved; inso much that a large part of the Egyptian philosophy and theology seems to have turned altogether upon numbers. Hence those wonders related by them about unity, trinity; the numbers seven, ten, four, &c. In effect, Kircher (in his *Oedip. Ægypt. tom. ii. p. 2.*) shews, that the Egyptians explained every thing by numbers; Pythagoras himself affirming, that the nature of numbers pervades the whole universe, and that the knowledge of numbers is the knowledge of the Deity. From Egypt arithmetic was transmitted to the Greeks by Pythagoras and his followers; and among them it was the subject of particular attention, as we perceive in the writings of Euclid, Archimedes, and others; with the improvements derived from them, it passed to the Romans, and from them it came to us.

The ancient arithmetic was very different from that of the moderns in various respects, and particularly in the method of notation. M. Gouget (*Origin of laws, arts, &c. vol. i. p. 218.*) suggests, that the ancient Greeks first used pebbles in their calculations; and in proof of this he adduces the word *χρῆσις*, (derived from *χρῆσις*, a *little stone* or *pebble*;) which signifies to calculate: and he also supposes that the word calculation is derived from the term *calculi*, *little stones*, used by the Romans in their first arithmetical computations. To this purpose it has been also alleged, that the Indians are at this time very expert in computing by means of their fingers, without the use of pen and ink; and that the natives of Peru, by the different arrangements of their grains of maize, surpass the European, aided by all his rules, with regard both to accuracy and dispatch. The Hebrews and Greeks, however, at a very early period, and after them also the Romans, had recourse to the letters of their alphabet for the representation of numbers. The Greeks in particular had two different methods: the first resembled that of the Romans, which is sufficiently known, as it is still used for distinguishing the chapters and sections of books, dates, &c. See CHARACTERS. They afterwards had a better method, in which the first nine letters of the alphabet represented the first numbers from 1 to 9, and the next nine letters represented any number of tens, from 1 to 9, that is, 10, 20, &c. to 90. Any number of hundreds they expressed by other letters, supplying what they wanted by some other marks or characters: and in this order they proceeded, using the same letters again, with different marks to express thousands, tens of thousands, hundreds of thousands, &c.; thus approaching very near to the more perfect decuple scale of progression used by the Arabians, who acknowledge, as some have said, that they received it from the Indians. Archimedes also in his "Arenarius," used a particular scale and notation of his own. In the second century of the Christian Æra, Ptolemy is supposed to have invented the sexagesimal numeration and notation, and this method is still used by astronomers and others for the subdivision of the degrees of circles. These several modes of notation above recited, were so operose and inconvenient, that they so limited the extent, and restrained the progress, of arithmetic, that it was applicable with great difficulty and embarrassment to the other sciences, which required its assistance. The Greeks (if we except Euclid, who in his *Elements* furnished many plain and useful properties of numbers, and Archimedes in his *Arenarius*) contributed little to the advancement of this science towards perfection; its practical operations derived little benefit from their theory, abstract properties, and tedious distinctions

and divisions of numbers; and the imperfection of the art sufficiently appears from a treatise of Nichomachus, supposed to be written in the third century of Rome, and published at Paris in 1538; from the two first books of the *Mathematical Collections* of Pappus, of which only a small fragment remains; and also from that of Boethius, written at Rome in the sixth century after Christ, and still extant. From Boethius we learn, that some Pythagoreans had invented and employed, in their calculations, nine particular characters, whilst others used the ordinary signs, namely, the letters of the alphabet. These characters he calls *quæres*; and they are said greatly to resemble the ancient Arabic characters, which circumstance suggests a suspicion of their authenticity. Indeed, the MSS. of Boethius, in which these characters, resembling those of the Arabian arithmetic, are found, not being more ancient than three or four centuries, confirm the opinion that they are the works of a copyist. Upon the whole, this treatise of Boethius does not warrant our rejecting the commonly received system with regard to the origin of our arithmetic; but if we suppose that the Arabians derived their knowledge of it from the Indians, it is more probable that it was one of the inventions which Pythagoras spread among the Indians, than that those persons should have obtained it from the Greeks. See FIGURES.

A compendium of the ancient arithmetic, written in Greek, by Pfellus, in the ninth century, was published in Latin by Xylander, in the year 1556; a similar treatise was written soon after in Greek, by Jordocus Willichius; and a more ample work of the same kind was written by Jordanus in the year 1200, and published with a comment, by Faber Stapulensis, in 1480. The same author also wrote upon the new art of computation by the Arabic figures, and called this book "Algorismus demonstratus." This book in MS. is still extant, according to Dr. Wallis, in the Savilian library at Oxford, but has never yet been printed. A treatise on arithmetic was also written by Johannes de Sacro Bosco, who died about the year 1256. The introduction of the Arabian or Indian notation into Europe, about the tenth century, made a material alteration in the state of arithmetic; and this, indeed, was one of the greatest improvements which this science had received since the first discovery of it. This method of notation, now universally used, was probably derived originally from the Indians by the Arabians, and not, as some have supposed, from the Greeks; and it was brought from the Arabians into Spain, by the Moors or Saracens, in the tenth century. Gerbert, who was afterwards pope under the name of Silvester II. and who died in the year 1003, brought this notation from the Moors of Spain into France, long before the time of his death, or, as some think, about the year 960; and it was known among us in Britain, as Dr. Wallis has shewn, in the beginning of the eleventh century, if not somewhat sooner. See FIGURES. As literature and science advanced in Europe, the knowledge of numbers was also extended, and the writers in this art were very much multiplied. The next considerable improvement in this branch of science, after the introduction of the numeral figures of the Arabians or Indians, was that of decimal parts, for which we are indebted to Regiomontanus; who about the year 1464, in his book of "Triangular Canons," set aside the sexagesimal subdivisions, and divided the radius into 60,000,000 parts; but afterwards he altogether waved the ancient division into 60, and divided the radius into 10,000,000 parts; so that if the radius be denoted by 1, the sines will be expressed by so many places of decimal fractions as the cyphers following 1. This seems to have been the first introduction of

ARITHMETIC.

decimal parts. But this method was more expressly delivered in the extraction of the square and cube roots, by Peter Ramus in his Arithmetic, written about the year 1567, and published with other treatises, by Lazarus Schonerus, in 1586. Dr. Wallis has shewn (*Algebr.* p. 32.) that our countrymen William Buelley and Robert Record had used a similar method for extracting the square root in fractions, about the year 1550: but the first person who professedly treated on this subject, and introduced the name of "disme" or "decimals," was Simon Stevinus, in a treatise entitled "Disme," subjoined to his arithmetic, published in French, and printed at Leyden in 1585; since which the method of decimals has been practised by many others, and is now become universal. See DECIMAL.

To Dr. Wallis we are principally indebted for our knowledge of circulating decimals, and also for the arithmetic of infinites. The last, and perhaps with regard to its extensive application and use the greatest, improvement which the art of computation ever received, was that of logarithms, which we owe to baron Neper or Napier, and Mr. Henry Briggs. See LOGARITHMS. See also the subsequent articles.

Arithmetic, in its present state, is variously divided into different kinds; *theoretical, practical, instrumental, logarithmical, numerical, specious, decimal, dynamical, tetraëtical, duodecimal, sexagesimal, &c.*

ARITHMETIC, *theoretical*, is the science of the properties, relations, &c. of numbers, considered abstractedly; with the reasons and demonstrations of the several rules. Euclid furnishes a theoretical arithmetic, in the seventh, eighth, and ninth books of his Elements.—Barlaam Monachus has also given a theory for demonstrating the common operations, both in integers and broken numbers, in his *Logistica*, published in Latin by J. Chambers, an Englishman, in 1600.—To which may be added, Lucas de Burgo, who, in an Italian treatise intitled "Summa Arithmetica & Geometrica," published in 1494 at Venice, gives the several divisions of numbers from Nicomachus, and their properties from Euclid; with the algorithm, in integers, fractions, extractions of roots, &c. Malcolm has also treated the subject very fully, in all its branches, in his "New System of Arithmetic, theoretical and practical," printed at London in 1730.

ARITHMETIC, *practical*, is the art of numbering or computing; that is, from certain numbers given, of finding certain others, whose relation to the former is known. As if two numbers, 6 and 8, are given, and we are to find their sum, which is 14, their difference 2, their product 48, their quotient $1\frac{1}{2}$, or a third proportional $\frac{6^2}{8} = \frac{36}{8} = 4\frac{1}{2}$. Lucas de Burgo has given the practice of Arithmetic as it subsisted in his time, as well as the theory. Tonitall's practical treatise of Arithmetic was published in 1526; and Stifelius in 1544 wrote on the practical and other parts of arithmetic. An entire body of practical arithmetic was given by Nic. Tartaglia, a Venetian, in 1556, consisting of two books; the former, the application of arithmetic to civil uses; the latter, the grounds of algebra. The principal writers on this art, theoretical and practical, have been Barlaam, Lucas de Burgo, Tonitall, Aventinus, Purbach, Cardan, Scheubelius, Tartaglia, Faber, Stifelius, Record, Ramus, Maurolycus, Hemischius, Peletarius, Stevinus, Xylander, Kersey, Snellius, Tacquet, Clavius, Metius, Gemma Frisius, Buteo, Ursinus, Romanus, Napier, Ceulen, Wingate, Kepler, Briggs, Ulacq, Oughtred, Cruger, Van Schooten, Wallis, Dec, Newton, Morland, Moore, Jeake, Ward, Leybourn, Hatton, Malcolm, &c. &c., whose discoveries and inventions, as far as they have made any, will be noticed in their proper places.

ARITHMETIC, *binary*, or *dyadic*. See BINARY Arithmetic.

ARITHMETIC, *common* or *vulgar*, is that which relates to integers and vulgar fractions.

ARITHMETIC, *decimal*, or *decadal*, is that which is performed by a series of ten characters or figures, in a ten-fold progression, as from 1 to 10, from 10 to 100, &c. including both integers and decimal fractions in the common scale of numbers. See DECIMAL.

The characters now used are the ten Arabic or Indian figures, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9; for the history of which see FIGURES, and ARITHMETIC, *supra*.

ARITHMETIC, *duodecimal*, is that which proceeds from 12 to 12, or by a continual subdivision according to 12, and is much used by most artificers in calculating the value of their work; as bricklayers, carpenters, painters, tylers, &c.

ARITHMETIC, *fractional*, or of *fractions*, is that which treats of fractions both vulgar and decimal. See FRACTION.

ARITHMETIC, *harmonical*, is that part of the doctrine of numbers, which relates to the comparison, reduction, &c. of musical intervals.

ARITHMETIC of *infinites*, is a method of summing up a series of quantities, consisting of an infinite number of terms, or of finding their ratios. This method was first invented by Dr. Wallis, as appears from his treatise on the subject in the "Opera Mathematica," vol. i. p. 365, &c., where he shews its use in geometry, in finding the areas of superficies, and the contents of solids, and their proportions. This is also called the method of "Indivisibles," because magnitudes are here supposed to be resolved into their indivisible parts, or at least as far as there is any occasion to consider them as such. See INDIVISIBLES. But the method of FLUXIONS, which is an universal arithmetic of infinites, performs all this much more easily, and many other things, which the former will not reach.

ARITHMETIC, *instrumental*, is that in which the common rules are performed by means of instruments contrived for ease and dispatch; such are several sorts of scales, and sliding-rules; Napier's bones or rods, described under their proper article; the arithmetical machine of Pascal and others; sir Sam. Morland's instrument, the description whereof was published by himself, in 1672: that of M. Leibnitz, described in the Miscellan. Berolin.; that of Polenus, published in the Venetian Miscellany, 1709: and that of Dr. Saunderson, described in the introduction to his algebra. Such is also the ABACUS, or SHWAN-PAN of the Chinese.

ARITHMETIC, *integral*, or of *integers*, is that which relates to integers, or whole numbers.

ARITHMETIC, *literal*, or *algebraic*, is that which is performed by letters, that represent any numbers indefinitely. See ALGEBRA.

ARITHMETIC, *logarithmical*, is that which concerns logarithms, and is performed by tables of LOGARITHMS; which see.

ARITHMETIC, *logistical*. See LOGISTICAL.

ARITHMETIC, *mechanical*, is that which is performed by means of a lever or balance. See BALANCE.

ARITHMETIC, *numerous*, or *numeral*, is that which gives the calculus of numbers, or indeterminate quantities; and is performed by the common numeral or Arabic characters.

ARITHMETIC, *palpable*, is that which is performed by the sense of feeling, and practised by blind persons. Dr. Saunderson, Lucasian professor of mathematics in the university of Cambridge, had contrived, for his own use, a commodious notation for any large numbers, which he could express

express on his abacus, or calculating table, and with which he could very readily perform any arithmetical operations. His calculating table was a smooth thin board, somewhat larger than a foot square, raised upon a small frame, so as to be hollow; and this board was divided by a great number of equidistant parallel lines, and by others as many at right angles to the former. The edges of the table were distinguished by notches, at the distance of about half an inch from one another, and to each notch belonged five of the afore-mentioned parallels; so that every square inch was divided into an hundred little squares. At every point of intersection the board was perforated by small holes, capable of receiving a pin: for it was by the help of pins, stuck up to the head through these holes, that he expressed his numbers. Of these pins he used two sorts, some larger, and others smaller; or, at least their heads were different, so that they might be easily distinguished by the touch. A large quantity of these pins, with the points cut off, was kept in two boxes, which were always near him when he calculated. In order to understand his mode of calculation, it is necessary to premise, that to every numeral figure a little square was appropriated on the table, consisting of four of the little squares above described, and allowing a small interval between one figure and another; and this numeral figure was different according to the different magnitude or situation of the one or two pins which always composed it; for which purpose the ingenious professor had settled in his mind and strictly observed the following analogy or notation. A great pin in the centre of the square, its appropriate and invariable place, was a cypher, or 0, by which name we shall call it. Its chief office was to preserve order and distance among the figures and lines. This cypher was always present, except in the case of an unit, for expressing which, the great pin in the center was changed into a little one. When 2 was to be expressed, the cypher was restored to its place, and the little pin was put just over it. To express 3, the cypher remained in its place, and the little pin was advanced into the upper angle, on the right hand. To express 4, the little pin descended, and immediately followed the cypher. The express 5, the little pin descended to the lower angle, on the right hand. For 6, the little pin retreated, till it was just under the cypher. For 7, this pin retreated into the lower angle, on the left hand. For 8, it ascended, till it was just before the cypher. For 9, the little pin ascended into the upper angle, on the left hand. In this manner all the digits were expressed by an easy and uniform notation, which might readily enough be apprehended and distinguished by the feeling. These digits or figures are represented in *Plate I. Algebra, fig. 1.* Dr. Saunderson was able, by this contrivance, to mark, or write down, as we may say, any proposed number upon his table, and by lightly running his fingers over it, he could at any time easily read it, and know what it signified. The great pins or cyphers which were always placed at the center of the little squares, and most frequently at equal distances from one another, were a sure guide to direct him in keeping the line, in ascertaining the limits of every figure, and in preventing any ambiguity that might otherwise occur. As three of the erect parallels were sufficient for a single figure, so three of the transverse parallels would suffice for a line of figures, and the next three for another line, and so on, without any danger of interfering. Thus we may conceive, without much difficulty, how he might have any number of lines of figures upon his table at the same time, in a descending order, or how he might deduce one number from another, or how he might make any computation required. It is said that he could place and displace his pins with incredible quickness

and facility, to the surprize and amusement of spectators. He could even break off in the middle of a calculation, resume it when he pleased, and instantly know the state of it, by only drawing his fingers gently over the table. The table might also be previously prepared by himself or some other person, by filling every third hole of every third parallel line with large pins or cyphers; and then, when he intended to calculate, he would only need to complete every figure by adding a small pin in its proper place, except when he wished to express an unit, in which case he must have changed the large pin into a small one. He had composed and preserved for his own use certain arithmetical tables, which seemed to have some relation to the tables of natural sines, tangents, and secants. These were four pieces of solid wood, in the form of rectangular parallel-pipeds, each about 11 inches long, $5\frac{1}{2}$ broad, and somewhat above half an inch thick. The two opposite faces of every one were divided into little squares after the manner of the abacus above described; but they were perforated only in the necessary places, where the pins were stuck fast up to the head. Each face exhibited nine small arithmetical tables, of ten numbers each; and every number, generally speaking, consisted of five places or figures. One of these tables is represented in *Plate I. Algebra, fig. 2.*

Besides this arithmetical use of his table, for which it was primarily and chiefly designed, he could describe upon it very neat and perfect geometrical figures, consisting of right lines, intersecting one another in a variety of ways. This he did by two methods; either by pins set in rows, which exhibited the appearance of pricked lines, or by pins placed only at the intersections. Then by winding a piece of fine thread or silk about their heads, he could very well exhibit any continued straight lines at pleasure, or any system of such lines. Whether he had palpable letters also, somewhat like printing types, to distinguish the several angular points, and to assist in demonstrating the properties of these figures, does not now appear. It is not very difficult to conceive, how the same table might possibly be applied to the representation of all kinds of algebraical equations, and to the several reductions of such equations, especially by the use of the forementioned types, or some similar contrivance. Dr. Saunderson also might have had types, in the form of pins, for the common algebraic signs, and to serve the purpose of various operations; and thus his table would have had a near resemblance to a printer's form, which he might have read by the touch, if he had thought proper to use it. It is said that he could spell very well, that he knew the shapes of the letters, both small and capital, and would sometimes amuse himself, when opportunity offered, by reading the inscriptions upon tomb-stones with his fingers; and he is known to have often regretted, that he did not apply himself to learn to write in his younger years, which he thought he could easily have accomplished. Saunderson's Alg. vol. i. Introd.

The description of an apparatus for the improvement of this numerical board of Dr. Saunderson, was presented to the Society of Arts, &c. in 1786, by a blind person of the name of Thomas Grenville. The board is perforated with holes, in exact lines, horizontally and perpendicularly. The horizontal lines denote units, tens, hundreds, thousands, &c. reckoning from right to left, as usual; and the perpendicular lines allow the figures to be placed below each other, as is usual in every account. These holes are fitted with pegs, on the heads of which are painted the figures (or numbers) they respectively represent; which figures are distinguished by the blind person by means of certain pins placed in the heads of these pegs. Between the rows of holes for these

these pegs are rows of smaller holes, adapted to receive the but ends of brass wires, which perform the part of lines, placed either horizontally or perpendicularly, as is necessary for any arithmetical operation. The box is formed into proper divisions for holding the pegs and wires; and it is, without doubt, a very useful apparatus for blind persons, who, with a little attention, may perform by means of it every arithmetical operation which they could perform if they had the use of sight.

ARITHMETIC, political, is the application of arithmetic to political subjects, such as the strength and revenues of kingdoms, the number of inhabitants, births, burials, &c. See *POLITICAL Arithmetic*. To this head may be also referred the doctrine of CHANCES, GAMING, &c.

ARITHMETIC of Ration. See *RATIO*.

ARITHMETIC, sexagesimal, or sexagenary, is that which proceeds by sixties; or the doctrine of sexagesimal fractions; supposed to have been invented by Ptolemy, in the second century. In this notation the integral numbers from 1 to 59 were expressed in the common way; then sixty was called a *sexagena prima*, and marked I'; twice sixty, or 120, II'; and so on to 59 times 60, or 3540, which is LIX'. Sixty times sixty, or 3600, was called *sexagena secunda*, and marked with two dashes, I''; twice 3600, II''; and ten times 3600, X'', &c. And in this way the notation was continued. But if a number less than sixty was joined with any of the sexagesimal integers, their proper expression was annexed without the dash; e. gr. four times 60 and 25 is IV'XXV'; the sum of twice 60, ten times 3600, and 15, is X''LXV', &c. So nearly did the inventor of this method approach to the Arabic notation: instead of *sexagesimal* progression, he had only to substitute *decimal*; to make the signs of numbers from 1 to 9 simple characters, and to introduce a character which signifies nothing by itself serving only to fill up places. The *sexagena integrorum* were soon laid aside, after the introduction of the Arabic notation; but the *sexagesimal* fractions continued till the invention of *decimals*; and are still used in the subdivisions of circular arcs and angles.

Sam. Reyher has invented a kind of sexagenal rods, in imitation of Napier's bones, by means whereof the sexagenary arithmetic is easily performed.

ARITHMETIC, specious, is that which gives the calculus of quantities; using letters of the alphabet instead of figures, to denote the quantities; and coincides with what we usually call *algebra*, or *literal arithmetic*.

Dr. Wallis has joined the numeral with the literal calculus; and by means of it demonstrated the rules for fractions, proportions, extraction of roots, &c. a compendium of which is given by Dr. Wells, under the title of *Elementa Arithmeticae*. an. 1698.

ARITHMETIC, tabular, is that in which the operations of multiplication, division, &c. are performed by tables calculated for that purpose; such as those of Herwart at Hohenburg, called "the universal table of prostaphæreses," published in 1610; and Hutton's tables of powers and products, published by order of the commissioners of longitude, in 1781.

ARITHMETIC, tetraëtic, is that in which only the figures 1, 2, 3, and 0, are used. We have a treatise of this arithmetic, by Erhard Weigel; but both this and binary arithmetic, are little better than curiosities, especially with regard to practice; inasmuch as the numbers may be much more compendiously expressed by decadal arithmetic, or the common decuple scale, than by either of them.

ARITHMETIC, vulgar, is that conversant about integers and vulgar fractions.

ARITHMETIC, universal, the name given by sir Isaac Newton to the science of algebra. See *ALGEBRA*.

ARITHMETICAL, denotes something relating to, or performed after the manner of, arithmetic.

ARITHMETICAL complement of a logarithm, is what the logarithm wants of 10.0000000. Thus the arithmetical complement of 7 1079654, is 2 8920946, and it is found by subtracting each figure but the last from 9, and that from 10.

It is often used in trigonometrical calculations, when radius or 10.0000000 is the first term, to save the labour of subtraction. It is distinguished by placing a point before, and another after the index; thus, .2.8920946.

ARITHMETICAL division of the octave, in *Music*, is that which

a
D

divides it into two portions: as A, when the middle term is a fourth to the base or lowest sound, and which in the ecclesiastical modes constitutes those that are termed *plagal*. The

a
A

harmonic division constitutes the *authentic modes*, as D; when the middle term is a fifth to the lowest. From these two divisions of the octave all tones or modes of the church were regulated in the following manner:

Harmonic Division.	$\left\{ \begin{array}{l} d e f g a c \\ A B C D E G \\ D E F G A C \end{array} \right.$	Authentic modes.	$\left\{ \begin{array}{l} a b c d e \\ D E F G A \\ A B C D E \end{array} \right.$	Arithmetical Division.	$\left\{ \begin{array}{l} a b c d e \\ D E F G A \\ A B C D E \end{array} \right.$	Plagal modes.

The first of these divisions consists of fifths and fourths; the second of fourths and fifths.

These divisions still exist in *Canto fermo*, or plain chant; though they have been long abandoned in secular music. It is necessary, however, to know them, as they still serve to regulate the answer to figures. See *DIVISION in Music*, *FIGURE*, and *MODE*.

ARITHMETICAL instruments, or machines. See *INSTRUMENTAL ARITHMETIC*.

ARITHMETICAL medium or mean. See *MEDIUM*.

ARITHMETICAL progression. See *PROGRESSION*.

ARITHMETICAL proportion. See *PROPORTION*.

ARITHMETICAL ratio. See *RATIO*.

ARITHMETICAL scales, a name given by M. Buffon, in the *Mem. d'Acad.* of 1741, to different progressions of numbers adapted to arithmetical computations. Besides the common decuple scale, consisting of ten numbers, others have been devised, such as the binary, tetraëtic, &c. consisting of a different number of characters. M. Buffon lays down a concise and simple method, which serves to shew at once how to write down any given number in any scale whatever; and he also makes several observations on the different scales that have been proposed. It is evident that any scale of numbers, containing fewer or more than ten, would have both its advantages and inconveniences. In a scale of fewer and lower numbers, a given number would require more places of figures for denoting or expressing it; but multiplication and division would be more easily performed, as it is more easy to use the smaller numbers 2, 3, 4, than the larger ones 7, 8, 9: but in a scale ascending beyond 10, or containing more than 10 characters, any given number might be expressed by fewer of them, and yet the arithmetical calculations would be more difficult, on account of the larger numbers 11, 12, 13, &c. Hence it may be concluded, upon the whole, that the decuple scale is a convenient medium between the two extremes, as the numbers which it comprehends, are neither too small nor too large. The duodecimal scale, comprehending 12 characters, would express all numbers in a more compendious manner than

the decimal scale; and yet no single character would represent a number too large for ordinary computations. Accordingly the multiplication table is now made to extend to 12 numbers instead of 10, and the mode of multiplying and dividing by 11 and 12, is as easily acquired as that by 8, 9, or 10. Besides, the number 12 has this advantage, that it admits of more submultiples than 10, and therefore there would be fewer expressions of interminate fractions in this scale than in the decimal one; and hence it has been suggested that the duodecimal scale would be preferable to any other.

ARITHMETICAL Triangle. See TRIANGLE.

ARITHMOMANCY, compounded of *αριθμος*, number, and *μαντια*, divination, a kind of divination, or method of foretelling future events by means of numbers. Delrio distinguishes two sorts of it; one used by the Greeks, who from the number and value of the letters contained in the names, e. g. of two combatants, inferred, that the person whose name consisted of those that were most numerous and of greatest value, would be victorious; and thus they concluded, it is said, that Hector should have been vanquished by Achilles; the other was that of the Chaldeans, who divided their alphabet into three decades, and changing into numeral letters the letters of the names of those who consulted them, they referred each number to some planet, and in this manner formed their presages. The Platonists and Pythagoreans were addicted the Arithmomancy. The gematria, which makes the first species of the Jewish Cabbala, is a sort of Arithmomancy. See GEMATRIA, and CABBALA.

ARITIUM, in *Ancient Geography*, a town of Spain, in Lusitania, situate upon the Tagus, north-east of Olisipo.

ARITZAR, in *Geography*, a town of European Turkey, in the province of Bulgaria, ten miles south of Viddin.

ARIVATES, in *Ancient Geography*, a people placed by Pliny in Pannonia.

ARIUS, in *Biography*, founder of the sect called Arians, in the beginning of the fourth century, was, according to Epiphanius, a native of Lybia; but, according to Photius, of Alexandria. In early life he was probably of the school of Lucian, bishop of Antioch, who favoured the opinions of Paul of Samosata; for Arius, in a letter to Eusebius of Nicomedia, calls him a Collucianist; whence Cave and others have inferred that they were fellow disciples of Lucian. He was appointed deacon by Peter, bishop of Alexandria, and afterwards excommunicated, because he disapproved of the bishop's treatment of Meletius and his adherents. After the martyrdom of Peter, he was re-admitted by Achilles, the next bishop, to the office of deacon, and also ordained presbyter. At this time he was much approved by Alexander, the successor of Achilles, and he was not only presbyter, but officiated in one of the churches of Alexandria. About the year 315, the contest commenced between Arius and Alexander, of which as to its rise, progress, and consequences, an account is given under the article *ARIANS*. In the year 320, he was excommunicated from the church, and expelled the city by a council convened by Alexander, upon which he withdrew into Palestine, where he formed a strong party of persons who favoured him and his cause. Whilst he complained in a letter to Eusebius of Nicomedia, of the persecution he suffered for the sake of the truth, he derived encouragement from the number and rank of those who were attached to his opinions and interests; among whom were several presbyters and bishops. The breach between him and Alexander was thus gradually widened, and parties were formed, who became inveterate and invincible in their opposition to each other. This mutual altercation proceeded to such an extreme, that it furnished a subject of satirical exhibition

in the public theatres. The emperor Constantine, in this stage of the dispute, interposed with the best intention to produce mutual reconciliation. But his efforts, as a mediator, were altogether ineffectual; and he himself was at length induced, by the interference of ardent and bigotted ecclesiastics, probably against his judgment and disposition, to take an authoritative and active part, with a view of terminating a controversy which had riddled the milder methods of persuasion and remonstrance. For this purpose, he imprudently convened the council of Nice, in order to decide whether the Logos, or only begotten Son, was of the same substance with the Father; and thus, instead of terminating, he perpetuated the discussions of the church, and divided the whole Christian world into "Homousians" and "Homoiousians." This council having decided that Christ is consubstantial with the Father, the doctrine of Arius was of course condemned, and the presbyter himself, who was then at Nicewaiting its determination, was banished by Constantine into a remote province of Illyricum. By an edict of the same emperor, he and his adherents were stigmatized with the opprobrious name of Porphyrians, his books were ordered to be burnt, and those who concealed any of them were to be put to death. In a little while, the emperor, who seems to have naturally possessed a candid and benevolent mind, relented, and his conduct towards Arius underwent a total change. Eusebius of Nicomedia, it is said, by means of a presbyter who enjoyed the confidence of Constantia, the emperor's sister, gained over that lady to the interest of Arius. In her last sickness, she recommended to the favour of the emperor this presbyter, by whom he was persuaded to believe, that the faith and conduct of Arius had been misrepresented by his enemies. Upon this Constantine recalled him from banishment; and having received a satisfactory confession of faith, in which he professed his belief, that "the Son was begotten of the Father before all ages," but without any acknowledgment of consubstantiality, recommended to the bishops assembled in council at Jerusalem, A. D. 335, to re-admit him into the communion of the church. The bishops, who are supposed to have been concealed Arians, readily complied, and recommended Arius to a cordial reception among other churches. Attempts were made for restoring him to the church of Alexandria, but they were ineffectual, on account of the resistance of Athanasius, who had succeeded Alexander in that see. A day was appointed, by the express command of the emperor, for his re-admission into the church, at Constantinople; but on that very day, A. D. 336, as it is said, Arius walking in the city, and retiring to obey a sudden call of nature, he discharged his entrails and died on the spot. The story of his death is related both by the historian Socrates (l. i. c. 25. i. 38. Ep. ad Serap.) and Athanasius, but with circumstances which very much invalidate its credibility. The learned editor of Mosheim admits the testimonies of Socrates, Sozomen, Athanasius, and others, with respect to the manner of his death, as unexceptionable. The causes of it, however, have furnished much matter of dispute. The ancient writers, who considered this event as a judgment of heaven, miraculously procured by the prayers of the just, to punish the impiety of Arius, will find little credit in our times, among such as have studied with attention and impartiality the history of Arianism. "After having considered this matter with the utmost care," says the writer above mentioned, "it appears to be extremely probable, that this unhappy man was a victim to the resentment of his enemies, and was destroyed by poison, or some such violent method." He adds; "a blind and fanatical zeal for certain systems of faith has, in all ages, produced such horrible acts of cruelty and injustice."

The

The talents and learning of Arius have been generally acknowledged; but his disposition and character have been more variously represented by writers of different parties. To this purpose we shall take an extract from the account given of him by the eminent and impartial Lardner. "Arius was very tall, grave and serious, yet all big and courteous. With good natural parts, and no inconsiderable share of secular learning of all sorts, he was particularly distinguished by his skill in logic, or the art of disputing. He had at least the outward appearance of piety. In short, he is represented as a man exceedingly well qualified to form a party, and carry on any enterprise he should engage in. So far as I recollect, his conduct was unblameable, excepting what relates to his zeal for maintaining his supposed errors; and that he is charged with dissembling his real sentiments upon some occasions, in those difficult circumstances to which he was reduced by the prevailing power of his adversaries." "I may add here," continues the same author, "that he writes with much spirit, and a full assurance of the truth of his opinions; particularly in his letter to Eusebius at Nicomedia, whom he styles orthodox; and he tells that Bishop, that he and his friends were unjustly persecuted by Alexander for the truth's sake, which conquers all things; that all the bishops of the East in general had been anathematized by Alexander, except Pappologonius, Hellenicus, and Macarius, whom he calls ignorant heretics. As for himself, he was not able to endure their impious doctrine; nor would he ever receive it, though he were to suffer a thousand deaths from those heretics." One of his biographers says (Ger. Bi. g.), that "for aught that appears upon the face of his story, it may be confidently asserted, that his morals were untainted, and his piety sincere. The incidents of his life afford a strong presumption, that he possessed a genuine love of truth, and adhered to what he judged to be its cause with firm integrity. Had his party prevailed during his life, there can be no doubt, that after his death his name would have been recorded among the saints; having had the misfortune to be registered by the church which called itself orthodox, among heretics, he can only be found by posterity in the humbler list of honest men."

The works of Arius do not appear to have been voluminous; though it is probable, that he wrote many letters. We have still extant his epistle to Eusebius of Nicomedia, (Ap. Epiph. Hær. 69.); and another to Alexander, bishop of Alexandria (Theod. l. i. c. 5, 7, 8.). He also wrote several little poems, fitted for the use of common people, with a view of promoting his peculiar opinions. A book called "Thalia," but whether it was written in prose or verse, or partly in the one form and partly in the other, is not certain, is mentioned by Socrates (H. E. l. i. c. 9.) and Sozomen (H. E. l. i. c. 21.), and censured as wanton and dissolute. It was condemned, as they say, by the council of Nice. Athanasius (De Sent. Dion. n. vi. p. 247.) quotes its several times, and is supposed to have read it; he speaks of its effeminacy and buffoonery. It must be owned, however, that this is the testimony of enemies, and that other writers probably took their character of it from Athanasius. Tillmont also imagines, that Arius also published some work against the heathens, in defence of the Christian religion. See Hist. l. i. Sozom. l. i. Cave, Hist. Lit. vol. i. p. 174. Lardner's Works, vol. iv. p. 106—110. Mosheim's Eccl. Hist. vol. i. p. 412—418. Gen. Dict. Gibbon's Hist. vol. iii. p. 228—248.

ARJUZANX, in *Geography*, a town of France, in the department of Landes, and chief place of a canton in the district of Mont-de-Marsan, eleven miles north of Tartas. The place contains 559, and the canton 5275 inhabitants: the territory includes $46\frac{1}{2}$ kilometres and 12 communes.

ARIZA, a town of Spain, in Aragon, seated on the Xalon, eight leagues above Calataiud.

ARK, or *Arce*, *arcus* in *Geometry*, *Astronomy*, &c. See *ARCH*.

ARK, *Arca*, in the *Scripture Language*, denotes a kind of floating vessel built by Noah, for the preservation of several species of animals from the deluge.

The Hebrew word, by which the ark is expressed, is אֲרֹכָה, or אֲרֹכָה תִּיבֹת *archoth*, or *archoth*, the constructive form of אֲרֹכָה, which is evidently the Greek *Arca*; and so the LXX render the word in Exod. ii. 3. where only it once occurs. There they render it *καβαρέτιον*, and the Vulgate *arca*, signifying an ark, coffer, or chest. Although the ark of Noah answered, in some respects, the purpose of a ship, it is not so certain that it was of the same form and shape. It has been inconclusively argued by Michaelis and some others, that if its form had not been like that of a ship, it could not have resisted the force of the waves; because it was not intended to be conducted, like a ship, from one place to another, but merely to float on the surface of the waters." Gen. vii. 17. It appears to have had neither helm, nor mast, nor ears: but was merely a bulky capacious vessel, light enough to be raised aloft with all its contents, by the gradual rise of the deluge. Its shape therefore, was of little importance; more especially as it seems to have been the purpose of providence, in this whole transaction, to signify to those who were saved, as well as to their latest posterity, that their preservation was not in any degree effected by human means. The ark in which Moses was exposed, was a vessel of the same nature, and bears the same name; and some have thought that both were of the same materials. With respect to the etymology of the Hebrew word, the most rational seems to be that of Clodius, who derives it from the Arabic word *Arak*, *collegit*, from which is formed *Arka*, denoting a place in which things are collected. Forster (De Byfso Antiquorum) deduces it from two Egyptian words, *thoi*, a ship, and *bai*, a palm-tree branch; and such ships are still to be seen not only in Egypt, but in India and other countries; particularly in some isles of the Pacific ocean.

The ark has afforded to the critics and naturalists several points of curious inquiry relating to its form, capacity, materials, time of building, place of resting after the flood, &c.

Noah is computed to have been one hundred years in building the ark, viz. from the year of the world 1555, to the flood, which happened in the year 1656; at least this is the common opinion of the fathers, oriental authors, and other learned persons; and to this purpose they allege, that Noah is said to be five hundred years old before any mention is made of the ark. Origen, lib. iv. contra Cell. St. Austin, de Civit. Dei, lib. xv. c. 27. and contra Faustum, lib. xi. c. 18. and in his Quest. 5. and 23. on Gen. Rupert, lib. iv. in Gen. xx. assert as much; and are followed by Salian, Torniel, Spondeus, Pelletier, &c.

Yet Berosus affirms, that Noah only began to build the ark seventy-eight years before the flood: Solomon Jarchi, on the other hand, will have it to have been an hundred and twenty years in building, Tanchuma fifty-two, and the Mahometans only two years. See the texts, Gen. vi. &c.

Several interpreters of the sacred writings infer from the words of St Peter (1 Ep. iii. 20.), "the long-suffering of God waited in the days of Noah, while the ark was preparing," that Noah was employed in building the ark during the whole time of forbearance, which was 120 years; but others think the time much shorter, because Noah's three sons, the eldest of whom was born in his 500th year, are not only mentioned before the directions given for the ark, but they and their wives are ordered, in those directions, to be taken into the ark; a circumstance which

which seems to imply that they were then married. Some, in order to evade this difficulty, have said that when Noah is declared (Gen. v. 32.) to have begotten Shem, Ham, and Japheth, at the age of 500 years, it should be translated, "he had begotten," instead of "he begat." F. Fournier, in his Hydrography, adopts the opinion of the fathers; noting that the hands employed in it were only Noah and his three sons. To this purpose he alleges the instance of Archias of Corinth, who, with the help of three hundred workmen, built Hiero's great ship in one year. Add, that Noah's eldest son was not born till about the time when the ark was begun, and the younger after: so that it was a long time before they could do their father any service. Upon the whole it may be observed that there is no such connection or exact order of time in the whole narration as to establish any of these conjectures. But it is certain, that so large a building, and the previous preparations, could not have been the work of a few years.

The wood whereof the ark was built, is called in scripture גֹּפֶר עֵץ, *ese gopher, gopher wood*: and in the LXX. ξύλα τετραγωνία, *square timbers*. Onkelos and Jonathan render gopher by קֶדְרוֹס, *kedros, cedar*: St Jerom. in the Vulgate, by *ligna levigata, planed wood*: and elsewhere, *ligna bituminata*, q. d. pitched wood, which is adopted by Delgado, a learned London Jew. Kimchi translates it "wood most proper to float;" Vatable, "light wood," which swims in the water without corrupting; Junius Tremellius, and Buxtorf, a kind of "cedar," by the Greeks called κισσινάκη; Avenarius and Munster, "pine;" Fuller and Bochart, "cypress," and the "ebony-tree;" others, "fir;" Castalio, "turpentine," &c. Pelletier prefers the opinion of those who hold the ark made of cedar: his reasons are, the incorruptibility of that wood; the great plenty thereof in Asia, whence Herodotus and Theophrastus relate, that the kings of Egypt and Syria built whole fleets of it in lieu of deal; and the common tradition throughout the East imports, that the ark is preserved entire to this day on mount ARARAT. The Mahometans explain it by the word "Sag," or the Indian plane-tree. To these various conjectures may be added that of Dr. Geddes (Crit. Rem. vol. i. p. 67.), who apprehends, that the Syriac translator has given the true meaning in the word עֵץ קָנָה, rendered in the polyglot by the Latin word *vimen*, signifying in general a twig, rod, or wicker of any kind. In Arabic the same word signifies a chest, coffer, or basket made of twigs, particularly of palm-tree leaves. And, indeed, all the first vessels of capacity, whether coffer, ark, or ship, seem to have been composed of the same materials. The ship or ark of Noah, says this writer, was a large coffer formed of twigs, like basket work, and covered over with bitumen, both within and without, to keep out the water. Whether those twigs were of osier, or palm-tree, or hazel, or poplar, or birch, or juniper, or any other kind of vimineous wood, he does not presume absolutely to determine; but he thinks it must have been the osier, which, as we learn from Columella, was considered as the principal of the wicker kind. It is certain, that boats, baskets, and ships, were originally made of such twigs, and particularly of osier; and even those, which were externally covered with skins, had other ribs at least of that wood, on account of its pliability. See Herodotus (Clio); or Niebuhr's Arabia, vol. ii. p. 175.

The figure of the ark was that of an oblong square or parallelepiped, with a fiat bottom, and it was gradually contracted at the top, in the form of a sloping roof; and this roof rose in the middle a whole cubit higher than its extremities. This slope was sufficient, when covered with bitumen, to let the water pass easily off the deck. This vessel was,

without doubt, so contrived as to admit air and light, though the particular construction of the air-vents or windows be not mentioned. Bryant (Anal. Anc. Myth. vol. ii. p. 195.) suggests, that it was so closed up and fastened, that the persons within it were confined to darkness; having no light but what they received from lamps and torches. They could not therefore have been witnesses to the general calamity of mankind; nor see the mighty eruption of the waters, nor the turbulence of the seas. Some, with this writer, have supposed that they had one window above a cubit in diameter; but others have thought that the term קַרְוָה refers to the sloping roof, and that the windows are not particularly mentioned.

The ark, whatever were the materials of which it consisted, was pitched over, or coated with bitumen, such as some have supposed to be used in building the tower of Babel; and it has been observed, that the bitumen judaicum, or asphaltus, was the most proper of all substances for this purpose. At first, it was soft, viscous, and pliable, and might be thrust into every chasm and crevice with the greatest ease; but it would soon acquire a tenacity and hardness superior to those of our pitch. A coat of it spread over both the inside and outside of an ark, even of wicker work, would render it perfectly water-proof and impenetrable; and the longer it was kept in the water, the harder and stronger it would grow. The Arabs still use it in covering their vessels; and mixed with a tenth part of common pitch, it is called "pissasphaltus," and has been employed to the same purpose in our days by M. de la Sabloniere at L'Orient. Berofus says, that the people of Armenia, where it was supposed that the ark rested, scraped off the asphaltus, and used it as a charm; and Abydenus informs us, that small pieces of the wood were carried about by way of amulet.

As to the place where the ark was built, there have been different opinions: some have supposed that it was built in Palestine, and that Noah planted the cedars, of which it is said to be made, on the plains of Sodom; others imagine that it was built on mount Caucasus, on the confines of India; and others refer it to China, where Noah was supposed to have lived before the flood; but it was probably constructed not far from mount Ararat, where it rested, as it was not of a form which would allow of its being driven to a great distance. It is therefore most reasonable to imagine, that it was built in Chaldaea, in the territories of Babylon, where, it is said, there was so great a quantity of cypress in the groves and gardens in the time of Alexander, that he constructed a whole fleet of it for want of other timber; and this conjecture is confirmed by the Chaldaean tradition which makes Xisuthrus, the Noah of Berofus, sail from that country.

The dimensions of the ark, as delivered by Moses, are three hundred cubits in length, fifty in breadth, and thirty in height; which, compared with the great number of things it was to contain, seem to many to have been too scanty: and hence an argument has been drawn against the authority of the relation. Apelles, one of Marcion's disciples, objected to it, and Celsus ridiculed it, calling it κισσινάκη ἀλλοκότου, *the absurd ark*. To solve this difficulty, many, both of the ancient fathers and later critics, have been very much perplexed. Origen, St. Augustine, and others maintain, that by the cubit here spoken of, we are to understand the Egyptian geometrical cubit, equal, according to them, to six vulgar cubits, or nine feet. But the truth is, it does not appear there ever was any such measure as a geometrical cubit either among Egyptians or Jews.—Others, as sir W. Raleigh, account for it by asserting the stature of mankind

mankind in the first ages to have been much greater than in our days; and consequently the cubit, which is taken for a part of the human body, proportionably larger. But this does not avail, since the same reason will infer an equal augmentation of the size of other animals. Others suppose the sacred cubit to be that here spoken of, which was a hand's breadth longer than the civil one: but this only affords a small supply; beside, the sacred cubit does not appear to have been ever used, except in sacred edifices, as the temple and tabernacle.

This difficulty is much better solved by Buteo and Kircher, who, supposing the common cubit a foot and a half, prove geometrically that the ark was abundantly sufficient for all the animals supposed to be lodged therein. The capacity of the ark will be doubled, if we admit with Cumberland, &c. that the Jewish cubit was 21.888 inches. According to this measure, it must have been 54.72 English feet long, 91.2 broad, and 54.72 high; and its solid contents 2,730,781.9008 feet. Snellius computes the ark to have been about half an acre in area. Cuncus and others have also calculated the capacity of the ark.—Dr. Arbuthnot computes it to have been 81,062 tons.—Father Lamy says, that it was an hundred and ten feet longer than the church of St. Mary at Paris, and sixty-four feet narrower; to which his English translator adds, that it must have been longer than St. Paul's church in London, from west to east, broader than that church is high in the inside, and about fifty-four feet in height, of our measure.

The things contained in the ark were, beside eight persons of Noah's family, one pair of every species of unclean animals, and seven pair of every species of clean animals, with provisions for them all, during the whole year.—The former appears, at first view almost infinite; but if we come to a calculation, the number of species of animals will be found much smaller than is generally imagined; out of which, in this case, are to be exempted such animals as can live in the water; and bishop Wilkins imagines, that only seventy-two of the quadruped kind needed a place in the ark. Mr. Kirwan (Irish Transf. vol. vi. p. 291.) with a view of solving the objection arising from the difficulty of collecting or finding all the various species of animals now known, some of which can only exist in the hottest, and others only in the coldest climates, apprehends that no others were collected in the ark besides those that were most necessary for the use of man, and those only of the graminivorous or granivorous classes. At this early period, ravenous animals were not only unnecessary, but would have been even destructive to those which had just obtained existence, and probably not in great numbers: they only became necessary, when the granivorous had multiplied to such a degree that their carcases would have spread infection. Hence, he says, they appear to have been of posterior creation; and thus he also accounts for the existence of those that are peculiar to America and the torrid and frigid zones. Such is the singular hypothesis of this ingenious naturalist.

The ark appears to have been divided into three stories; and it is agreed on, as most probable, that the lowest story was destined for the beasts, the middle for the food, and the upper for the birds, with Noah and his family; each story being subdivided into different apartments, stalls, &c. Though Josephus, Philo, and other commentators add a kind of fourth story under all the rest; being, as it were, the hold of the vessel, to contain the ballast, and receive the filth and fæces of so many animals.

Drexelius makes three hundred apartments; father Fournier, three hundred and thirty-three; the anonymous au-

thor of the Questions on Genesis, four hundred; Buteo, Temporarius, Arius Montanus, Wilkins, Lamy, and others, suppose as many partitions as there were different sorts of animals.—Pelletier only makes seventy-two, viz. thirty-six for the birds, and as many for the beasts: his reason is, that if we suppose a greater number, as three hundred and thirty-three, or four hundred, each of the eight persons in the ark must have had thirty-seven, forty-one, or fifty stalls to attend and cleanse daily, which he thinks impossible. But there is not much in this; to diminish the number of stalls, without a diminution of the animals, is vain; it being perhaps more difficult to take care of three hundred animals in seventy-two stalls, than in three hundred. Buteo computes, that all the animals contained in the ark could not be equal to five hundred horses; he even reduces the whole to fifty-six pair of oxen. Father Lamy enlarges it to sixty-four pair, or an hundred and twenty-eight oxen; so that supposing one ox equal to two horses, if the ark had room for two hundred and fifty-six horses, there must have been room for all the animals. And the same authors demonstrate, that one floor of it would suffice for five hundred horses, allowing nine square feet to a horse.

As to the food on the second story, it is observed by Buteo, from Columella, that thirty or forty pounds of hay ordinarily suffice an ox for a day; and that a solid cubit of hay, as usually pressed down in our hay-racks, weighs about forty pounds; so that a square cubit of hay is more than enough for one ox one day. Now it appears that the second story contained 150,000 solid cubits; which, divided between two hundred and six oxen, will afford each more hay by two-thirds than he can eat in a year.

Bishop Wilkins computes all the carnivorous animals equivalent, as to the bulk of their bodies, and their food, to twenty-seven wolves; and all the rest to two hundred and eighty bees. For the former he allows the sustenance of 1825 sheep, and for the latter 109,500 cubits of hay: all which will be easily contained in the two first stories, and much room to spare. As to the third story, no body doubts its being sufficient for the fowls, with Noah and his sons and daughters.

Upon the whole, the learned bishop remarks, that of the two, it appears more difficult to assign a number and bulk of necessary things to answer the capacity of the ark, than to find sufficient room for the several species of animals already known to have been there.—This he attributes to the imperfection of our lists of animals, especially those of the unknown parts of the earth; adding, that the most expert mathematician at this day could not assign the proportions of a vessel better accommodated to the purpose than is here done; and hence finally concludes, that "the capacity of the ark, which had been made an objection against scripture, ought to be esteemed a confirmation of its divine authority; since, in those rude ages, men being less versed in arts and philosophy, were more obnoxious to vulgar prejudices than now; so that had it been a human invention, it would have been contrived according to those wild apprehensions which arise from a confused and general view of things, as much too big, as it has been represented too little." If we suppose that many animals would probably become torpid during the cold of the deluge, or consume little food whilst they were confined in a state of darkness, the means of sustenance laid up in store for them would be thus diminished. Besides, it would be sufficient to preserve the eggs of those animals that are oviparous; and many of them would be lodged in the earth with the seeds of plants, kernels of fruits, &c.; and thus the labour attending such as were preserved in the ark would be lessened; and room would be obtained for disposing a variety

variety of instruments and utensils which would be wanted immediately or soon after the deluge had subsided. So that, all circumstances considered, the capacity of the ark might be found fully adequate to all the purposes of its construction, and for preserving an ample supply of every thing that would be necessary for raising a new flock of animals and vegetables, after the deluge had subsided.

Those who have objected to the Mosaic history of the deluge, ought candidly to consider the several particulars that have been above stated; and they ought also to recollect, that the several varieties and species of both plants and brute animals, which differ from each other by small degrees, seem to be multiplied every day by the vicissitudes of climates, culture, food, mixture, &c. On the supposition of an universal deluge, which is confirmed by the general history of the world, and by a variety of existing facts and monuments, such a structure as the ark, for the preservation and sustenance of various animals, seems to have been absolutely necessary; for as we can trace up the first imperfect rudiments of the art of shipping amongst the Greeks, there could be no shipping before the flood; and, consequently, no animals could have been saved. Nay, it is highly improbable that even men and domestic animals could be saved, not to mention wild beasts, serpents, &c. though we should suppose, that the antediluvians had shipping, unless we suppose also, that they had a divine intimation and directions about it, such as Moses relates; but this would be to give up the cause of infidelity. Hartley's Obs. on Man, p. 372. Dr. Bryant (Anal. Anc. Myth. vol. ii. p. 213, &c.) has collected a variety of ancient historical relations, which shew that some records concerning the ark had been preserved among most nations of the world, and the general system of Gentile mythology. Abydenus, with whom all the eastern writers concur, informs us that the place of descent from the ark was Armenia; and that its remains had been preserved for a long time. Plutarch (De Solert. Anim. Oper. vol. ii. p. 668.) mentions the Noachic dove, and its being sent out of the ark. Lucian (De Dea Syria. vol. ii. p. 882.) speaks of Deucalion's going forth from the ark, and raising an altar to God. The priests of Ammonia had a custom, at particular seasons, of carrying in procession a boat, in which was an oracular shrine, held in great veneration: and this custom of carrying the deity in an ark or boat, was in use also among the Egyptians. Bishop Pococke has preserved three specimens of ancient sculpture, in which this ceremony is displayed. They were very ancient, and found by him in Upper Egypt. Vid. Diod. Sicul. l. xvii. p. 528. Pococke's Works, vol. i. p. 252. The ship of Isis referred to the Ark, and its name "Baris," was that of the mountain corresponding to Ararat in Armenia. Bryant finds reference to the ark in the temples of the serpent-worship, called "Dracontia;" and also in that of Sesostris, fashioned after the model of the ark, in commemoration of which it was built, and consecrated to Osiris at Theba; and he conjectures, that the city, said to be one of the most ancient in Egypt, as well as the province, was denominated from it; Theba being the appellation of the ark. In other countries, as well as in Egypt, an ark, or ship, was introduced in their mysteries, and often carried about in the seasons of their festivals. He finds also in the story of the Argonauts several particulars, that are thought to refer to the ark of Noah. As many cities, not in Egypt only and Bœotia, but in Cilicia, Ionia, Attica, Phthiotis, Cataonia, Syria, and Italy, were called Theba; so likewise the city Apamea was denominated Cibotus, from *Κιβώτιος*, in memory of the ark, and of the history connected with it.

The ark, according to the traditions of the Gentile world, was prophetic; and was regarded as a kind of temple, or residence of the deity. It comprehended all mankind, within the circle of eight persons, who were thought to be so highly favoured of heaven, that they at last were reputed to be deities. Hence in the ancient mythology of Egypt, there were precisely eight gods (Diod. Sic. l. i. p. 12.), and the ark was esteemed an emblem of the system of the heavens. The constellation Aquarius, in particular, and the great effusion of that element, as it is depicted in the sphere, undoubtedly related to this history. The principal terms by which the ancients distinguished the ark, were Theba, Baris, Arguz, Aren, Arene, Arni, Laris, Boutas, Bœotus, and Cibotus; and out of these they formed different personages. As the stay in the ark was an intermediate state between a lost world and a world renewed, this was alluded to in the hieroglyphical representations of the Gentile writers. See JANUS, PROMETHEUS, and SATURN. As the ark was represented under the figure of a ship, styled *αμφι-περυσνός*, i. e. whose extremities were alike, which formed a kind of crescent, the new moon, appearing in this shape, was made a type of the ark. Hence, in the mythology of the ark, and the Jönah or dove, there is continually some reference to the moon; and hence the moon was esteemed by the Egyptians the mother of all beings, for the moon and the ark were synonymous terms.

ARK of the Covenant, or of the Testimony, in Scripture, denotes a kind of chest made of shittim wood, overlaid within and without with pure gold, $2\frac{1}{2}$ cubits long, $1\frac{1}{2}$ broad, and $1\frac{1}{2}$ deep, in which, by God's command, Exod. xxv. 16. were kept the two tables of stone, on which God had engraven the ten commandments, given to Moses on the mount, and held in high veneration among the Hebrews. It contained likewise the golden pot that had manna, and Aaron's rod, and the tables of the covenant. Heb. ix. 4. The ark was reposit in the holiest place of the tabernacle.—It was taken by the Philistines, and detained twenty, some say forty years, at Kirjath-Jearim; but the people being afflicted with emroids on account of it, returned it with divers presents. It was afterwards placed in the temple. See Plate I. *Miscellany*.

The lid or covering of the ark was called the *propitiatory*, or mercy-seat; over which were two figures placed, called *Cherubim*, with expanded wings of a peculiar form. This covering was made of pure gold, of equal length and breadth with the ark, and kept steady by a crown or coronet of gold, which also served as an ornament. The covering was called *כַּפֹּת*, a word which may be derived from covering or from expiating sin, as in the language of scripture, when sins are forgiven, they are said to be covered. The septuagint have joined both senses together in their translation, *Ιλαστηριου επιθημα*. Over this covering, and between the wings of the cherubim, was the place, where the Schechinah rested, both in the tabernacle and temple, in a visible cloud; hence were issued the divine oracles by an audible voice; and the high priest appeared before this mercy-seat once every year on the great day of expiation; and the Jews, wherever they worshipped, turned their faces towards the place where the ark stood. In the second temple there was also an ark, made of the same shape and dimensions with the first, and put in the same place, but without any of its contents and peculiar honours. It was used as a representative of the former, on the day of expiation, and a repository of the original copy of the holy scriptures, collected by Ezra and the men of the great synagogue, after the captivity. And in imitation of this, the Jews to this day have a kind of ark in their synagogues, wherein their

hanced books are repositid: this they call *aron*. Leo of Modena gives a description of it, in his account of the customs and ceremonies of those of his nation: "The Jews (says he), in the eastern sides of their synagogues, have an ark, or armory, called *aron*; in memory of the ark of the covenant. In this are preserved the five books of Moses, written on vellum, with ink made on purpose," &c. Some have supposed that the figure of this ark is still remaining on the triumphal arch of Titus at Rome; though Villalpandus and others, with greater reason, are of opinion that it is the table of shew-bread. Priccaux's Conn. vol. 1. p. 209. Lowman's Tracts, p. 133. Tertullian calls this ark, *Armarium Judaicum*; whence the phrase, *to be in the armory of the synagogus*, q. d. in the number of canonical writings.

A chest or coffer, very nearly resembling the Jewish ark, and called the "house of the God," was found in Huaheine, one of the islands of the southern sea. Mr. (Sir Joseph) Banks could obtain no other information concerning it than what the name imports. Hawketworth's Account, &c. vol. ii. p. 252.

ARK is used for a large chest, in which corn and fruit are deposited.

ARK, or *Arks*, in *Conchology*, the trivial English name of all such shells as belong to the Linnæan genus *ARCA*, and corresponding with the French name *ARCHE*. See *ARCA*.

ARK island, in *Geography*, one of the two small islands, which lie between the islands of Guernsey and Sark; the other is called *Arm*.

ARKA. See *ARCA*.

ARKADELT, GIACOMO or JACQUES, in *Biography*, was a disciple of Jusquin, and seems to have spent the chief part of his life in Italy, as the first editions of his principal works were printed at Venice, between the years 1539 and 1575.

The number of his motets that was published then, in different collections of the times, is very considerable; but his madrigals were received with such avidity, that five books of them were published at Venice, between the years 1539 and 1541, in one of which is the celebrated madrigal, *Il bianco e dolce cigno cantando muore*, highly favoured all over Europe; and his reputation for this species of composition was so great in Italy, that, according to Adami, who enumerates him among the singers and composers of the pontifical chapel, his name was sometimes prefixed to the productions of others, in order to forward their sale.

Why Du Verdier and others have called Arkadelt a Frenchman, Dr. Burney doth not know: his master, at least, was a Netherlander, and his name has a very Flemish appearance. He was at Venice in the elder Doni's time, and composed chiefly to Latin and Italian words. Whatever country gave him birth, he was an excellent composer; and, for the time in which he lived, his melodies are uncommonly natural, smooth, and graceful.

ARKADINSKAIO, in *Geography*, a town of Russian Tartary, in the country of the Cossacks, on the river Medveditza, 240 miles north-east of Azoph, and 124 south-west of Saratov. N. lat. 50° 10'. E. long. 43° 4'.

ARKANSAS, a north-west branch of Mississippi river, which falls in by two mouths, and forms an island, whose north-western point lies in N. lat. 33° 35'. W. long. 91°. Its length is thirty-five, and breadth ten miles.

ARKEEKO, a town of Abyssinia, seated on a large bay of the Arabian gulf, and consisting of about 400 houses, of which some few are built of clay, and the rest of coarse grass-like reeds. There is water enough for large ships close to Arkeeko, but as the bay is open to the north-east, it is uneasy riding in blowing weather. The bottom is composed of soft sand. In standing in upon Arkeeko from the sea,

through the canal between Shekh Seide and the main land, it is necessary to range the coast about a third nearer the main than the island. The point, or Shekh Seide, stretches far out, and has shallow water upon it. The cape that forms the south west side of the large bay is called "Ras Gedem," being the rocky base of a high mountain of that name, seen at a considerable distance from sea, and distinguished by its form, which is that of a hog's back. In the bay between Arkeeko and Masrah are two islands, Toulahout and Shekh Seide; the first on the west, the other on the south, both uninhabited and destitute of water. Shekh Seide has a marabout, or saint's tomb, on the west end. It is not half a mile in length, when not overflowed; but has two large points of sand which run far out to the east and west. Its west point runs so near to Toulahout, as, at low water, scarcely to leave a channel for the breadth of a boat to pass. N. lat. 15° 35'. E. long. 39° 30'. Bruce's Trav. vol. iii. p. 56.

ARKEL, a district of the united provinces, in the low countries, belonging particularly to that of Holland; comprehending the town and seigniories of Asperia, of Heuchelnam, and some villages: and otherwise called the country of Gorkum.

ARKI, a town of European Turkey, situate in Bosnia, at the mouth of the river Bosna.

ARKITES, in *Ancient Geography*, the descendants of Canaan, who inhabited the town of Arka or Arca.

ARKITES, were also a people so denominated, according to Bryant in his "Analysis of Ancient Mythology," from Noah's ark, and the descendants of this venerable patriarch, who sent out various colonies that established themselves in different countries of the globe. They were distinguished by their peculiar rites, and they gave names to the different countries and towns in which they settled, which had a reference to the ark, and their ancestors who were preserved by it from the destruction of the deluge. Those of them who came into Greece, settled in many parts, but especially in Argolis and Thessalia, where they introduced their rites and worship. In the former of these regions, they were commemorated under a notion of the arrival of Danaus, or Danaus, supposed to have been a person who fled from his brother Ægyptus, and came over in a sacred ship given by Minerva; which, like the *ARGO*, is said to have been the first ship that was constructed, and he was assisted in the building of it by the same deity, divine wisdom. Danaus, upon his arrival, built a temple, called Argus, to Jönah, or Juno, of which he made his daughters priestesses. The people of the place had an obscure tradition of a deluge from which some few escaped, the principal of whom was Deucalion, who took refuge in the Acropolis, or temple. The Arkites who settled in Thessaly carried with them the same memorials, concerning Deucalion and his deliverance, which they appropriated to their own country. These Arkites, and their rites, extended very widely, from Chaldea and Babylenia, where they originated; and passed from Egypt and Syria, to Phrygia and Pontus, Thrace and the cities of Greece; and they were likewise carried into Hetruria, and into the regions of the Celtæ, and traces of them are to be observed as high up as the Suevi. Bryant thinks, that the Arkite rites prevailed in many parts of Britain, especially in the isle of Mona, which was afterwards the chief seat of the Saronides or Druids: and he conceives, that this island had its name Mona, or Menai, Men-ai, the island of the god Lunus, from its rites. The same worship was probably further introduced, as he imagines, into some of the Scottish isles, and particularly into that called Colum-kil or Columba. To the class of Arkite priests Bryant refers the Cabiri, or Curetes, Corybantes,

bantes, Telehines, and Idæi Daçtyli, who belonged to the same order, under different denominations. See ARGOLIS, ARGONAUTS, and ARK.

ARKIT-KAN, in *Geography*, a town of Asiatic Turkey, in the province of Caramania, eighteen miles east of Akshehr.

ARKLOW, a small neat town of the county of Wicklow, in Ireland, situate near the mouth of the little river Ovaca, or Ovo; and having a haven for small craft. The copper mine company have had thoughts of making the river navigable to Rathdrum; but the port is so bad, and the coast so shoaly, that the vessels must remain about a mile off, and put out to sea on the slightest appearance of bad weather. There was a desperate battle fought here, on the 9th of June 1798, between the insurgents, twenty thousand strong, and the king's troops and yeomanry under general Needham. The town was set fire to by the rebels, and great part of it destroyed; but they were finally repulsed with considerable loss. Distance from Dublin thirty-six miles. N. lat. $52^{\circ} 48'$. W. long. $6^{\circ} 8'$.—In 1795, a discovery was made of native gold in a brook that descends from the north-east side of a mountain about 600 yards above the level of the sea called Kinsheilly, and situate about seven English miles to the west of Arklow. This discovery was made public, and the researches for gold began early in the month of September, and continued till the 18th of October, during which period of about six weeks, the quantity of gold that is supposed to have been collected amounted to 800 ounces. The gold was of a bright yellow colour, perfectly malleable; and it was found in pieces of various weights, forms, and sizes, from the most minute particle to 202.7 dwts.; one piece of 2 oz. and another of 22 oz. were also found. Two specimens of this gold were assayed by his majesty's assay-master in the tower of London; one of which appeared to contain, in 24 carats, $21\frac{6}{8}$ of fine gold, $1\frac{7}{8}$ of fine silver, and $\frac{3}{8}$ of alloy, which seemed to be copper tinged with a little iron. The works were taken possession of by order of government; and the operations of the peasants, who in great numbers had been industrious in their researches, were discontinued. Phil. Transf. vol. lxxxvi. p. 34—45.

ARKLOW bank, denotes sand-banks in the Irish sea, about ten miles long, and scarcely one broad, five miles from the coast of Ireland, having the town of Arklow nearly opposite to the middle part of them.

ARKWRIGHT, SIR RICHARD, in *Biography*, an eminent manufacturer, advanced himself, by his mechanical inventions for carding and spinning cotton, from the humble station of a country barber to an immense fortune and an honorary title. For performing these operations of carding and spinning by means of machinery, it was required either that the usual manœuvre of the carder should be effected with square cards, or that cylinders, covered with a kind of metallic brush-work, should be made to revolve in contact with each other, either to card or to strip, according as the respective velocities, directions, and inclinations of their wires might be adjusted. With regard to spinning, it would be indispensably necessary, not only that the raw material should be very nicely prepared, but also that it should be regularly drawn out by certain parts representing the fingers and thumbs of the spinner. The contrivance for this purpose consisted of a certain number of pairs of cylinders, each pair revolving in contact with each other. Suppose then that a loose thread or slightly twisted carding of cotton were made to pass between one pair of cylinders, properly adapted with a facing for holding it, and that it proceeded from thence to another pair, whose surfaces revolved with a much greater velocity; it is evident, that this quicker revolution would draw out the cotton, and ren-

der it thinner and longer when it came to be delivered at the other side. This is the operation which the spinner performs with his finger and thumb; and if the cotton be delivered to a spinning apparatus, it will be converted into thread. Sir R. Arkwright contrived to make these rotatory carding and spinning engines to move by horse, by water, and by steam; and thus, by the saving of labour, and with the advantage of a patent monopoly, he was rendered one of the most opulent of our manufacturers.

After he had quitted his original business, in the year 1767, he came to Warrington, where he projected a mechanical contrivance for a kind of perpetual motion. A clock-maker of this town, whose name was John Kay, dissuaded him from it, and suggested that much money might be gained by an engine for spinning cotton, which Kay promised to describe. Arkwright at first objected, but afterwards asked Kay, if this engine might be made at a small expence? Kay had been employed in making a cotton spinning engine; and in the trial for setting aside Arkwright's patent, it was proved that he had invented such an engine, but he had not brought it to perfection. Kay and Arkwright applied to Peter Atherton, esq. of Liverpool, for assistance in the construction of such an engine, who, discouraged by the mean appearance of the latter, declined undertaking it; though he soon after agreed to lend Kay a smith and watch-tool maker to prepare the heavier part of the engine, whilst Kay himself undertook to make the clock-maker's part of it, and to instruct the workmen. In this way Arkwright's first engine, for which he afterwards took out a patent, was made. Mr. Arkwright soon after connected himself in partnership with Mr. Smalley of Preston in Lancashire; but their property failing, they went to Nottingham, and there, by the assistance of wealthy individuals, erected a considerable cotton mill turned by horses. A person of the name of Hayes had also employed himself in making cylindrical carding engines. Upon the whole, without minutely detailing further particulars, it appears that the cotton spinning was no new attempt when Mr. Arkwright embarked in it; but many difficulties occurred in bringing it to perfection. In the hands of Mr. Arkwright, the carding and spinning of cotton became a great national manufacture. According to his statement, it appears that the advancement of it during a period of five years, cost him and those that were concerned with him 12,000*l.* before they derived from it any profit; and it must be allowed, that he alone seems to have had sufficient perseverance, activity, and skill to perfect a scheme, in the prosecution of which many others had failed, and to render it valuable to himself and the public. The merits of sir R. Arkwright may be summed up with observing, "that the object in which he was engaged is of the highest public value; that though his family were enriched, the benefits which have accrued to the nation, have been incalculably greater; and that upon the whole, he is entitled to the respect and admiration of the world." He was knighted by his present majesty on the 22d of December 1786, on occasion of presenting an address from the high sheriff and hundred of Wirksworth; and died at his works at Crumford in Derbyshire, August 3d, 1792. Gen. Biog.

ARL, Gross, in *Geography*, a town of Germany, in the circle of Bavaria, and bishopric of Salzburg, 10 miles S.W. of Radstadt, and 38 S.S.E. of Salzburg.—Also, a river of Germany, which runs into the Salza, about 6 miles S.W. of St. John, in the bishopric of Salzburg.

ARL, Klein, a river of Germany, which runs into the Salza, near the town of St. John.

ARLANT, a town of France, in the department of Puy de Dome, and chief place of a canton in the district of Am-
bert-

bert, 3 leagues south of Ambert. The place contains 7,747, and the canton 10,954 inhabitants; the territory includes 167½ kilometres, and 9 communes.

ARLANZA, a river of Spain, which runs into the Pisuerga, between Valtencia and Valladolid.

ARLANZO, a town of Spain, in Old Castile, 3 leagues from Lerma.

ARLANZON, a river of Spain, which joins the Arlanza, near Palenzuela.

ARLAUD, JAMES ANTHONY, in *Biography*, a famous painter, was born at Geneva in 1668. His principal attention was devoted to portrait painting, and he excelled in it to such a degree, that the regent duke of Orleans, who favoured him with his patronage at Paris, said of him, that while other miniature painters produced only images, he had found the means to paint portraits. In 1721 he visited England, and having been recommended to the princess of Wales, afterwards queen Caroline, he was much favoured by the court. After leaving England, he made a tour through the provinces of France, and afterwards through Switzerland. Besides portraits, Arlaud produced some history pieces, and other works. His Leda, which he copied from a bas-relief of Michael Angelo, and which at a small distance appeared like the original marble, he destroyed, because he thought it too licentious. After a residence of about 40 years at Paris, he returned with a handsome fortune and a good collection of pictures to his native place; where he died in 1743, at the age of 75 years. His valuable collection of paintings, drawings, models, and rare books, he left to the public library of Geneva. *Moreri*.

ARLAY, in *Geography*, a town of France, in the department of Jura, and chief place of a canton in the district of Lons-le-Saunier, five miles north of Lons-le-Saunier.

ARLBERG, a mountain of Germany, in the Tyrol, being a part of the Alps, between Bregentz and the lake of Constance.

ARLE, a river of Denmark, which runs into the North sea, four miles south of Bredstede.

ARLEN, a town of Germany, in the county of Tyrol, situate on a mountain, 8 miles N.W. of Landeck.

ARLEQUIN, or HARLEQUIN, in *Natural History*, a trivial English name occasionally applied to some birds, insects, shells, and other objects of natural history, that are remarkable for a striking variety of colours; thus the *Trochilus multicolor* of Gmelin is called by Dr. Latham the harlequin humming-bird, and the same may be illustrated by various other instances of the like nature.—The French naturalists adopt the term *arlequin* also; for example, *arlequin de Cayenne* is the common name of the *prionus longimanus*, *Prione longimane* (*Cerambyx longimanus* of Linnæus); *arlequin doré*, the name given by Geoffroy to their *Chrysomele céréale* (*Chrysomele cerealis* of Linnæus); and *arlequin velue*, a name given likewise by Geoffroy to their *Cétone velue* (*Cetonia hirta* of Fabricius).

ARLES, in *Geography*, a town of France, in the department of the East Pyrenæes, and chief place of a canton in the district of Ceret, 18 miles S.W. of Perpignan. The place contains 1,226, and the canton 4,776 inhabitants; the territory includes 192½ kilometres, and 11 communes. N. lat. 42° 27'. E. long. 2° 32'.

ARLES, a city of France, and principal place of a district in the department of the mouths of the Rhone, and chief place of a canton, in the district of Tarascon, was, before the revolution, the see of an archbishop. It is situated in the midst of a fertile country, which produces corn, wine, manna, oil, and fruit of various kinds. This city has several monuments of antiquity, which are worthy of notice. The amphitheatre is of an oval form, and was begun by Julius Cæsar, but never finished. It is in circumference about

1164 feet, and the front is 102 feet in height. The arena, or middle, is 426 feet long, and 312 broad; the porticos or piazzas are three stories high, built with very large stones, and each of them consists of 60 arches, which in part still remain. The obelisk is of granite, 58 feet high, and 7 feet in diameter at the base, the pedestal is adorned with four lions in marble, and at the top is a blue ball, on which are flower-de-luces of gold, and terminated by a sun. It was dug up near the walls of the city in 1675, erected in the following year, and dedicated to Louis XIV. Here are the ruins of two temples; the remains of a triumphal arc; two large columns of Grecian marble; the wreck of a capitol built here by the Romans; the burying place of the Pagans and Christians, situate on the top of a hill, consisting of two parts, one called "Campus Elysius," or "Eliscamp," and the other "Moulaïres;" that of the Pagans being distinguished by two letters, D. M. "Diis manibus," and that of the Christians by a cross. Various pieces of gold, silver, and bronze have been found here: and also urns, lamps, and cups, without number. It was at Arles that the statue of Diana was dug up, which was removed to the gallery of Versailles. On a column erected in honour of Constantine the Great, who made this city the seat of empire, repaired its walls, and built a palace in it, is an inscription, which imports that he was the restorer of Arelata or Arles. Thirteen councils were held in this city, between the years 353 and 1261. At Arles there is an academy of belles lettres founded in 1669; the academy of sciences was discontinued after the life of Louis XIV., by whom it was founded. The marshy land that lies in the vicinity of Arles renders it unwholesome. The place contains 21,000, and the canton 23,020 inhabitants; the territory includes 1,047½ kilometres, and three communes. N. lat. 43° 4'. E. long. 4° 48'.

ARLESHEIM, a small but pleasant town of Switzerland, about 4 miles from Basle. Within a quarter of a mile from this town is a beautiful hermitage, designed for the employment of the poor in a season of great scarcity, and furnishing agreeable walks for the inhabitants of the town. The walks are carried along the sides of rocks, which are richly wooded, and through a semicircular plain, bounded by fertile hills, and watered by a small lake; several natural caverns add to the romantic singularity of the scenery; while many transparent streams, brought from a considerable distance, fall in small cascades, or bubble from the ground like real springs.

ARLEUX, a town of France, in the department of the North, and chief place of a canton in the district of Douay, 8 miles N.W. of Cambray. The place contains 1,460, and the canton 9,938 inhabitants; the territory includes 105 kilometres, and 15 communes. N. lat. 50° 17'. E. long. 3° 16'.

ARLINGTON, a township in Bennington county, Vermont, 12 miles north from Bennington, containing 591 inhabitants.

ARLINGTON Bay, lies on the east coast of Ireland, within the entrance of Carlingford bay.

ARLINGTON'S Island, is situated not far from the south shore of Maghellan's Straits.

ARLON, a town of the Netherlands, in the comté of Chim, annexed to the duchy of Luxemburgh; and by the new arrangement, in the department of the Forêts, and chief place of a canton in the district of Luxembourgh; situate on a hill near the source of the river Semois, 13 miles east of Luxemburgh, and 14 south of Battogne. The place contains 3,128, and the canton 11,688 inhabitants; the territory includes 310 kilometres, and 13 communes. N. lat. 49° 53'. E. long. 5° 28'.

ARLOTTO, IL PIOVANO, or *the De.m.*, in *Biography*,
was

was born of a family named "Mainardi," at Mugello, near Florence, in 1395, and at the age of 28 years assumed the clerical profession. By his peculiar talent of contributing to the amusement of society by his humorous extravagances and repartees in conversation, he obtained ecclesiastical preferment, of which the highest was the rural deanery of St. Cresci, in the diocese of Fiesole. Less celebrated as a poet than a buffoon, he rambled over Italy and other countries, diverting those with whom he associated by his pleasantries and singularities; and thus recommended himself even to Lorenzo and Giuliano del' Medici. After his death, which happened in 1483, at the age of 87, a collection of his jests, witticisms, and adventures, was printed under the title of "Facetie Fabule e Motti del Piovano Arlotto, Prete Fiorentino," which has been frequently reprinted. *Nouv. Dict. Hillor.*

ARLY, in *Geography*, a river of Savoy, which runs into the Isere, near Conflans.

ARLYNG, in *Ornithology*, a name by which the Linnean *Motacilla oenanthe* is known in some parts of England. This is the bird, called by Ray, Willughby, and other old writers, the fallow-smith, or white-tail, and is the wheat-ear of modern English ornithologists.

ARM, *brachium*, in *Anatomy*, strictly speaking, signifies the whole of that part of the upper extremity which intervenes between the shoulder and the elbow.

ARM, *Amputation of*, in *Surgery*. See **AMPUTATION**.

ARM-pit. See **AXILLA**.

ARM-presentation, in *Midwifery*, is when the arm or hand of the fœtus presents to the orifice of the uterus, instead of the head. In natural labours, that is, when the head of the fœtus is the presenting part, and frequently when the breech presents, they may be easily perceived through the parietes of the uterus and vagina, at whatever period of gestation labour comes on, even before the os uteri begins to be dilated; but when the arm, or any other part, presents, the body of the fœtus being thrust down with more difficulty, it frequently happens, we are not able to distinguish the presenting parts until the os uteri is considerably dilated; and sometimes they are not to be discovered until the membranes are ruptured, and the waters are flowing away. Whenever, therefore, on examining *per vaginam* during a pain, no part of the fœtus can be distinctly felt, we shall be generally right in concluding that the labour will be preternatural, that is, that the arm, shoulder, or some other part than the head or breech of the fœtus, will present to the orifice, unless the descent of the fœtus be prevented by the unnatural projection of the brim of the sacrum, or the pelvis be in some other way contracted and distorted. In these cases, by the general consent of practitioners, the child must be turned and extracted by the feet. For the manner of performing this operation, see **PRÆTERNATURAL LABOURS**.

ARM of a horse, is that part of his fore leg which is intercepted between his shoulder and knee. See **HORSE**.

ARM, in the *Manege*, is applied to a horse, when he endeavours to defend himself against the bit, to prevent obeying or being checked thereby.

A horse is said to *arm* himself, when he presses down his head, and bends his neck, so as to rest the branches of the bridle upon his brisnet; in order to withstand the effort of the bit, and guard his bars and his mouth.

A horse is said to *arm himself with the lips*, when he covers the bars with his lips, and deadens the pressure of the bit. This frequently happens in thick-lipped horses. The remedy is by using a bit-mouth, forged with a cannon or scratch-mouth, broader near the bankers than at the place of its pressure or rest upon the bars.

For *arming against the bit*, the remedy is, to have a wooden

ball covered with velvet or other matter, put on his chawl; which will so press him between the jaw bones, as to prevent his bringing his head so near his breast.

ARM, in *Geography*, is used for a branch of a sea or river. Italy and Sicily are only parted by an arm of the sea. St. George's arm, in the Mediterranean, is the Thracian Bosphorus.

ARM Island. See **ARK**.

ARM, among *Gardeners*, is sometimes used in respect of cucumbers and melons, in the same sense as branch of other plants.

ARM is also figuratively used for *power*. The secular arm is the lay or temporal authority of a secular judge; to which recourse is had for the execution of the sentences passed by ecclesiastical judges. The church sheds no blood; even the judges of inquisition, after they have found the person guilty, surrender him to the secular arm. The council of Antioch, held in 341, decrees, that recourse be had to the secular arm to repress those who refuse obedience to the church; for secular arm, they here use exterior power.

ARM, in the *Military Art*, *Heraldry*, &c. See **ARMS**, and **ARMOR**.

ARM, in *Sea Language*, a ship is said to be *armed*, when fitted out, and provided, in all respects for war.

Armed ship more peculiarly denotes a vessel that is occasionally taken into the service of government in time of war, and employed to guard some particular coast, or attend on a fleet. All ships of this sort are commanded by an officer of the navy, and are upon the same establishment with the king's sloops.

Also a cross-bar shot is said to be *armed*, when some rope-yarn, or the like, rolled round about one end of the iron bar which runs through the shot, both that the shot may be the better rammed down into the gun, and lest the sharp end of the bar should catch into any honey-combs within the cylinder of the piece.

ARM, *Yard*. See **YARD**.

ARM, in respect of the *Magnet*.—A loadstone is said to be *armed*, when it is capped, cased, or set in iron or steel; in order to make it take up the greater weight; and also to distinguish readily its poles. See **ARMED MAGNET**.

ARMA, in *Geography*, a small province of South America, with a town and a river of the same name. The soil is so fertile, that it produces maize twice in the year.

ARMA dare, to give arms, in some ancient charters, signifies to dub or make a knight.

ARMA deponere, to lay down arms, was a punishment anciently enjoined when a man had committed an offence. *Leg. Hen. I.*

ARMA mutare, q. d. to change arms, was a ceremony used to confirm a league or friendship.

ARMA moluta, were sharp weapons: *Fleta* calls them *arma emolita*.

ARMA reversata, inverted arms, was a punishment when a man was convicted of treason or felony.

ARMADA, a Spanish term, signifying a fleet of men of war. The armada which attempted to invade England in the time of queen Elizabeth A. D. 1588, is famous in history; it was partly scattered by the wind, and partly subdued by the English fleet. On which occasion a medal was struck with this motto, *Afflavit Deus, et dissipantur*.

The situation of Philip II. at the time when he projected this invasion, was such as furnished a variety of motives, not only to induce his undertaking it, but to flatter him with the hope of success. Whilst secretly meditating his design in the preceding year, and actually commencing his preparations, Drake destroyed a whole fleet of transports at Cadiz, laden with ammunition and naval stores; he also ravaged his western coast, insulted Lisbon, and took a rich carrack,

carrack, laden with treasure and papers of great importance. By this short expedition, the means of which had been furnished by the London merchants, the naval preparations of Spain were disconcerted, the proposed expedition against England was retarded twelve months, and the queen had leisure to make more secure measures against that formidable invasion. Cavendish had also, in the same year, committed great depredations on the Spaniards in the South-Sea; having taken nineteen vessels, some of which were richly laden; and after returning by the Cape of Good Hope, he had entered the river Thames in his way to London with a kind of triumph. His mariners and soldiers were clothed in silk, and his sails were of damask, his top-sail cloth of gold, and his prizes were esteemed the richest that had ever been brought into England. Philip, provoked by these hostilities on the part of Elizabeth, had harboured for a considerable time a secret and violent desire of revenge. His ambition also, and the hopes of extending his empire, were much encouraged by the present prosperous state of his affairs; by the conquest of Portugal, the acquisition of the East Indian commerce and settlements, and the yearly importation of vast treasures from America. Besides, his highest glory was connected with that perpetual object of his policy, which was the support of orthodoxy and the extermination of heresy; and as the power and credit of Elizabeth were the chief bulwark of the protestants, he hoped, by subduing that princess, to acquire the immortal renown of re-uniting the whole Christian world in the catholic communion. Above all, his indignation against his revolted subjects in the Netherlands, inflamed him to attack the English, by whom they were encouraged and supported. The period which he had chosen for this purpose was peculiarly favourable to his design; as a truce had been lately concluded with the Turks; the empire also was in the hands of a friend and near ally; and France, the perpetual rival of Spain, was so distracted with intestine commotions, that she was incapable of directing her attention to her foreign interests. Thus circumstanced, Philip was determined, by one bold effort, to acquire that ascendant in Europe, to which the present greatness and prosperity of the Spaniards seemed so fully to entitle them; and he therefore proceeded immediately to the execution of his ambitious project. His preparations had been for some time conducted with studied secrecy and reserve; but when his resolution was formed, every part of his extensive empire resounded with the noise of armaments. And all his ministers, generals, and admirals were employed in forwarding the design. The marquis of Santa Croce, a sea-officer of great reputation and experience, was destined to conduct the naval equipments, and to command the fleet. Accordingly the plans were laid and measures were taken in all the ports of Sicily, Naples, Spain, and Portugal, for fitting out such a fleet and embarkation as had never before had its equal in Europe. The military preparations in Flanders were no less formidable. Troops were collected from all quarters for reinforcing the duke of Parma; and an army of 34,000 men was assembled in the Netherlands, which was kept in readiness to be transported into England in boats and flat-bottomed vessels, previously prepared and conveniently stationed for this purpose. To the most renowned nobility and princes of Italy and Spain, who were ambitious of sharing in the honour of this great enterprise, might be added some hundreds of desperate English renegadoes under the conduct of Stanley, who had been already proscribed for selling a Dutch fortress to Spain. The Spaniards, ostentatious of their power, and elated with vain hopes, had already denominated their navy the "Invincible Armada."

As soon as the news of this proposed invasion reached

the court of London, the queen made preparations for resistance; nor was she dismayed by that power, by which all Europe apprehended the must of necessity be overwhelmed. Her forces, however, seemed very unequal to resist so potent an enemy. All the sailors in England amounted at that time to about 14,000 men, and the royal navy consisted only of 28 sail, many of which were of small size. The dexterity and courage of the seamen far surpassed those of the Spanish mariners, and compensated for the inferior size and force of their vessels. The alarm roused the exertions of the English people; and they concurred with singular alacrity in defending their liberty and religion against those imminent perils with which they were menaced. The city of London supplied thirty ships and 10,000 men; other ports followed this example; the nobility and gentry, among whom were several Roman catholics, and even aliens, hired, armed, and manned 43 ships at their own charge; and all the loans of money which the queen demanded, were cheerfully granted. The command of the navy was entrusted with lord Howard of Effingham, a man of courage and capacity, and under him, as admiral, served Drake, Hawkins, and Frobisher, the most renowned seamen in Europe. The principal fleet was stationed at Plymouth; and a smaller squadron of 40 vessels, commanded by lord Seymour, second son of the protector Somerset, lay off Dunkirk, in order to intercept the duke of Parma. An army of 20,000 men was disposed in different bodies along the coast; and a body of 20,000 foot and 1000 horse, under the command of the earl of Leicester, was stationed at Tilbury, in order to defend the capital. The principal army consisting of 34,000 foot and 2000 horse, commanded by lord Hudson, guarded the queen's person, and had orders to march whithersoever the enemy should appear. James, the Scots king, retained his engagements, with a fidelity that was of great importance to England and the protestant cause, and kept himself prepared to march with the force of his whole kingdom to the assistance of Elizabeth; and the queen obtained some secondary aid from Denmark and the Hanse-towns. In a word, all the protestants throughout Europe were interested and anxious spectators on this occasion. In order the more to excite the martial spirit of the nation, the queen appeared on horseback in the camp at Tilbury; and riding through the lines, discovered a cheerful and animated countenance, exhorted her soldiers to remember their duty to their country and their religion, and professed her intention, though a woman, to lead them herself into the field against the enemy, and rather perish in battle than survive the ruin and slavery of her people. The loyalty and enthusiasm of the soldiers were elevated into a kind of frenzy, and they were prepared for any exertion which the cause in which they were engaged might require.

In the beginning of May, the armada was ready; but when it was preparing to sail, the admiral, the marquis of Santa Croce, and the vice-admiral, the duke of Paliano, both died; and the duke of Medina Sidonia, a nobleman altogether unacquainted with naval affairs, and unexperienced in action, was appointed admiral. On the 29th of May, the Spanish fleet set sail from Lisbon; but the next day it was dispersed by a violent storm, and some of the smallest ships were sunk, whilst the others took shelter in the Groine. As soon as the armada was refitted, it sailed again towards the English coast. The fleet consisted of 130 vessels, of which about 100 were galleons of larger size than any before used in Europe; and it carried on board 19,295 soldiers, 8456 mariners, 2088 galley-slaves, and 2630 great pieces of brass ordnance. It was victualled for six months, and attended by 30 smaller vessels. Superstition too added her fanatic but powerful aid: bulls, denouncing

ing hell-fire to Elizabeth and her abettors, accompanied the Squadron; and a consecrated banner from Rome waved over the heads of these new crusaders. On the 19th of July, the armada arrived in the channel, disposing itself in the form of a crescent, and stretching to the distance of seven miles from the extremity of one division to that of the other. The English admiral had just time to get out of port, when he saw it in full sail, as Bentivoglio, an Italian writer, in a kind of poetical language, describes its progress, and yet advancing with a slow motion, as if the ocean groaned with supporting, and the winds were tired with impelling, so enormous a weight. As the armada proceeded up the channel, Effingham, with the English fleet consisting of 140 ships, gave orders to avoid a close fight, but to skirmish with the larger ships of the Spanish fleet, which it continued to do for six days. The armada, having reached Calais, cast anchor before that place; and waited the arrival of the prince of Parma, who delayed leaving the Flemish ports until he was assured that the Spaniards were masters at sea. Whilst the Spanish fleet lay confusedly in this position, the English admiral, by a successful stratagem, dispatched eight of his smaller ships filled with combustibles, one after another, into the midst of the enemy; and thus alarmed them to such a degree, that they immediately cut their cables, and betook themselves to flight with the greatest disorder and precipitation. The English fell upon them the next morning, took about 12 of their large ships, and damaged several others. The Spanish admiral having destroyed only one small vessel of the English, and perceiving that his own fleet had greatly suffered, and was in danger of being totally destroyed, prepared to return homewards; but as the wind opposed his passage through the channel, and the English vessels harassed his retreat, he determined to sail northwards, and making the tour of the island, to reach the Spanish harbours by the ocean. The English fleet for some time pursued him; and if their ammunition had not failed them, the whole armada must have been compelled to surrender at discretion; and indeed the duke of Medina was prevented from so doing merely by the advice of his confessor. The event, however, proved almost equally fatal to the Spaniards. A violent tempest assailed the armada after it had passed the Orkneys; and the mariners, unable to govern their unwieldy ships, yielded to the fury of the storm, and allowed their ships to drive either on the western isles of Scotland, or on the coast of Ireland, where they were miserably wrecked. At length, after the experience of inexorable humiliation and distress, the shattered fleet, consisting of less than half its number, returned to Spain; and the seamen and soldiers, very much reduced by famine and disease, and the various hardships with which they had encountered, filled the country with accounts of the desperate valour of the English, and of the tempestuous violence of the ocean that surrounds them. Philip, as soon as he heard of the disastrous event, so mortifying to his pride and ambition, with an affected philosophy fell on his knees, and rendering thanks for that gracious dispensation of Providence, expressed his joy that the calamity was not greater. The Spanish priests, who had frequently foretold the infallible success of this holy crusade, perplexed in accounting for the victory which had been gained over the catholic monarch by excommunicated heretics and an execrable usurper, at last discovered, that all the calamities of the Spaniards had proceeded from their allowing the infidel Moors to live among them. The first English newspaper, entitled the "English Mercurie," was printed during the time of the Spanish armada; the first number, dated the 23d of July 1588, is still preserved in the British Museum.

Hist. vol. v. p. 330—345. Watson's Hist. Philip II. vol. iii. p. 122. Andrews' Hist. Great Britain, vol. i. p. 145.

ARMADILLA, in the Spanish America, denotes a squadron of men of war, to the number of six or eight, from twenty-four to fifty pieces of cannon, which the king maintains to prevent foreigners from trading with the Spaniards and the Indians, both in time of war and peace.

The vessels of this armada are those that have been for much talked of, under the name of *guarda costas*.

They have even power to take all Spanish merchant-ships they meet with on the coasts, that have no licences from the king.

The South sea has its armada as well as the North sea. The ordinary abode of the former is at Calao, a port of Lima; that of the latter at Carthagena.

ARMADILLO, in *Entomology*, one of the species of the *ONISCUS* genus, described by Linnæus in his *Fauna Suecica*. It is oval, cinereous brown, with a tail obtuse and entire. This kind inhabits Europe; lurks under stones; and is called by Ray *afellus lividus*.

ARMADILLO, in *Zoology*, the name given by English writers to those quadrupeds which in the Linnæan system constitute the genus *DASYPUS*: it is derived from the Spanish word *armadillo*, and is synonymous with the French *tatou*. See *DASYPUS*.

ARMAGARA, in *Ancient Geography*, a town of India, on this side of the Ganges. Ptolemy.

ARMAGEDDON. See *MEGIDDO*.

ARMAGH, or ARDMAGH, in *Geography*, the name of one of the counties of the province of Ulster in Ireland. It has lough Neagh on the North; the county of Down on the east; Louth on the south; Tyrone on the north-west; and Monaghan on the west. Its length from north to south is nearly thirty-two English miles, and its breadth almost twenty, and the superficial content 181,450 acres, or 283 square miles (290,786 acres, and 454 square miles English). The number of houses, according to the last official return, is 22,900, in which, according to Mr. Bushe's statement, we cannot reckon fewer than 130,000 inhabitants; which is a population of near 460 persons to every square mile; a greater proportion than is found in any other county except Dublin. The number of parishes in this county are twenty, and, what happens only in Ulster, the number of churches is greater, being twenty-six. Besides the two county members, the city of Armagh sends a member to the Imperial parliament. There is in this county very little flat ground; but the gentle hills which diversify the face of it, are covered with a very rich soil, except in the district called the *Fews* which is full of mountains, and in the south-eastern angle which is occupied by the lofty *Sliebhgullen*; but great part even of this rough ground is cultivated, and thickly inhabited. Throughout this county, the farms are small, seldom exceeding from forty to sixty acres, more commonly from five to twenty acres; and the tillage in general is bad, which has been observed to be the case wherever the linen manufacture spreads, because tillage is there only a secondary object. To the industry of the people, and the flourishing state of this manufacture which is carried on in all its branches, the extraordinary population of the county is to be attributed, and indeed there is no part of Ireland which affords such pleasing spectacles to a philanthropic observer. Yet, strange to tell, this apparently happy spot, where industry seems to confer every blessing, has been the scene of most of the disturbances which have taken place in the north; and both the Oak-boys and Defenders had their origin in it. There is no river of consequence in Armagh,

but the Blackwater which separates it from Tyrone, on its north-western boundary is navigable for some miles into lough Neagh; and the river Bann, and the Newry canal, afford a water-carriage from the lough to the bay of Carlingford on the eastern side. There are some considerable bogs from which the inhabitants are supplied with abundance of good turf, which is much used for firing. Some good marble is also found in this county. Armagh was one of the counties forfeited to the crown after the reduction of the earl of Tyrone, in the latter end of queen Elizabeth's reign, and was colonized under James the First; and the northern part is still called Oneil-land from the family name of that noted chieftain. The assizes are held at the city of Armagh. Beaufort, Young, &c.

ARMAGH, a city, and the capital of a county to which it gives name, in the province of Ulster, Ireland. It is said to have been founded by St. Patrick in the fifth century (though the very existence of such a person has been questioned), on an eminence from which it acquired its name, which implies a great high place or field. On the establishment of Christianity in this country, Armagh became a considerable city, and a celebrated university, which was not only resorted to by the natives, but also by the Anglo-Saxon youths from Britain. In the seventh century it was nearly destroyed by fire; and on the arrival of the Danes, was frequently plundered, and the greater part of its records taken away and destroyed. In 1152, cardinal Papan being sent to Ireland as legate, constituted Armagh the metropolitan see of Ireland; and it was provided by solemn ordinance, that no one should be allowed to profess or teach theology, who had not been educated at its university. This University however has been long extinct. The town was frequently plundered by the English before the reduction of that part of the island, and it was entirely destroyed by O'Neil in the reign of queen Elizabeth. It was soon after rebuilt and garrisoned, and has lately become a pretty town of good size, and well inhabited, through the attention and munificence of primate Robinson, lord Rokeby. He built there a handsome archiepiscopal palace, and a noble house for the school, which is one of the royal foundations, and extremely well endowed. To these he added a public library for the promotion of science. He also erected a complete observatory; with a liberal establishment for the support of an astronomer, and secured the permanency of his endowments by several acts of parliament. The province of Armagh contains ten dioceses; the archbishop having under him, the bishops of Dromore, Down and Connor, Derry, Raphoe, Clogher, Kilmore, Ardagh, and Meath. The archbishoprick extends into five counties, viz. Armagh, Tyrone, Londonderry, Louth, and Meath, and is reputed to be worth 8000*l.* per annum. Armagh has one of the best linen markets in Ulster, and there are many bleach-grounds in its neighbourhood on the banks of the Callen, a small stream which passes near the foot of the rising ground on which it is built. Its distance from Dublin is sixty-two miles, N. by W. N. lat. 54° 20' 30". W. long. 6° 32'. Collet. de Reb. Hiber. N° 11. Beaufort. Leland.

ARMAGIA, a town of Arabia, sixty-eight miles south of Cathem.

ARMAGNAC, a province of France, in the district of Gascoyne, and government of Guyenne; before the late division, about thirty-six leagues long and twenty-five broad; is bounded on the north by Angenois and Condomois, on the east by Languedoc and the country of Comminges, on the west by Marfan and Bearn, and on the south by the Pyrenees, which separate it from Arragon, and Bigorre. The capital is Auch. It is divided into Upper and Lower

Armagnac; the former lies among the Pyrenean mountains, and comprehends four valleys; and the latter is more extensive and fruitful, and contains proper Armagnac, and several counties and earldoms. The soil is generally fertile, and produces corn, wine, fruits, and pasture; and the commerce is considerable in wine, brandy, wool, flax, &c. The Armagnacs, who were the adherents of the young duke of Orleans, and so called from the count of Armagnac, father to this prince, formed one of the two parties into which the whole kingdom of France was divided, about the year 1415. The city of Paris, distracted between them and the Burgundians, but inclining to the latter, was at this time a perpetual scene of blood and violence; the king and royal family were often detained captives in the hands of the populace; their faithful ministers were butchered or imprisoned before their faces; and it was dangerous for any man, amidst these enraged factions, to be distinguished by a strict adherence to the principles of probity and honour. The fraternity of butchers declared for the duke of Burgundy, and committed the most violent outrages against the opposite party; whilst the Armagnacs made interest with the fraternity of carpenters; the populace ranged themselves on one side or the other; and the fate of the capital depended on the prevalence of either party. At length the Burgundians prevailed; butchered many of the faction of Armagnac, and threw the count and several persons of note into prison, who were afterwards murdered by the populace.

ARMAMAR, a small town of Portugal, in the province of Beira and district of Lamago, containing two parishes and about 1300 inhabitants.

ARMAMAXI, composed of the Latin *arma*, and the Greek *μαξία*, *plaustrum*, *carriage*, in *Antiquity*, a kind of Scythian chariots, or carriages, composed of two wheels, variously adorned with crowns, shields, breast-plates, and other spoils, carried in procession after the images of the gods and great men. These were sometimes called *amaxi*, or *amaxæ*. Pitisc. Lex. Ant.

ARMAMENT, a large body of forces, raised and provided with the furniture of war, either for land or sea service.

ARMAMENTA, in *Roman Antiquity*, comprehended the rigging and tackling of a ship, its sails, sail-yards, oars, ropes, &c. Hence *arma* denotes the sails (Virg. *Æn.* v. 55.) and the rudder (vi. 353).

ARMANCE, in *Geography*, a river of France, which runs into the Armançon, near St. Florentin, in the department of the Yonne.

ARMANÇON, or ARMANSOON, a river of France, which rises near Semur-en-Auxois, and runs into the Yonne, near Igny.

ARMANT, a village of Egypt, seated on the Nile, in the route from Thebes to Esné; supposed by Savary to be the ancient Hermuthis.

ARMARCALES, in *Ancient Geography*, a name given by Abydenus to the artificial channel that connected the two branches of the Euphrates, more properly denominated by Ammianus NAARMALCHA; which see.

ARMARIUM *unguentum*, among *Hermetical Philosophers*, a sympathetic ointment, or weapon-salve, whereby wounds are said to have been cured at a distance, by only dressing the weapon.

ARMATA, in *Entomology*, an European species of *APIS*, described in the *Systema Naturæ* from Mus. Lesc. It is brown; the head and thorax grey; jaws armed with a tooth at the base; bottom of the feet yellow. This insect belongs to the genus *MELITTA* in Kirby's *Apum Anglæ*, where it is thus described under the specific name *armata*:
"nigra,

“nigra, cinerascens-villofa; maxillis longitudine capitis, basi dente armatis.”

ARMATA, a species of *LEPTURA* found in some parts of Europe. The thorax is black and spinous; antennæ and legs ferruginous; wing-cases yellow, with two dots, a heart-shaped spot, and three bands of black. Herbst. Gmel. &c.—This insect bears some resemblance to *leptura attenuata*; the head, feet, posterior thighs and shanks, are black.

ARMATIUM, in *Ancient Physic*, a detergent kind of collyrium, of great value in removing asperities of the eyelids. Its chief ingredients were *as yslum*, gum ammoniac, and the roots of the tree *thus*. The preparation is described by Galen, Aetius, Paulus, and Scribonius.

ARMATORIUS, in *Entomology*, an insect described in the *Fabrician mantissa*. It is small, and inhabits Germany; colour black, scutal white; thorax immaculate, posterior part bidentated; abdomen and legs ferruginous.

ARMATURA, ARMATURE, in a general sense, is the same with what we otherwise call ARMOUR.

ARMATURA is more particularly used in the *Ancient Military Art*, for a kind of exercise, performed with missile weapons, as darts, spears, arrows, and the like.

In this sense, armatura stands contradistinguished from *palatia*; the latter being the exercise of the heavy-armed, the former of the light-armed.

The armatura was practised with great diligence among the Romans; they had their *campidectores*, on purpose to instruct the tyrones, or young soldiers, in it. Under it were included the throwing of the spear or javelin, shooting with bows and arrows, &c.

ARMATURA is also an appellation given to the soldiers who were light-armed.

Aquinas seems, without reason, to restrain armatura to the tyrones, or young soldiers, under discipline or tutorage in the exercise above mentioned.

ARMATURA is also a denomination given to the soldiers in the emperor's retinue. Du-Cange.

Of these we find two schools mentioned in the *notitia imperii*, called the *armature seniores*, and *armature juniores*. Their commander was entitled *tribunus armaturarum*.

ARMATUS, in *Entomology*, a species of *CIMEX* that inhabits New Holland. The thorax is acutely spined; scutal black with two dots, and apex testaceous; antennæ and legs red. Fabricius. Gmelin.

ARMAVIARA, in *Ancient Geography*, a town of Asia, in the greater Armenia. Ptolemy.

ARMAXA, or ARMACA, a town of Asia, in Cappadocia. Anton. Itin.

ARME', in *Ichthyology*, a specific name given by the French naturalists to a fish of the *SILURE* genus, found in Asia; and according to Block, in Surinam; this is the Linnæan *Silurus militaris*. See *MILITARIS*.

ARMED, in *Lacu*. See *ARMS*.

ARM B, in *Sea-Language*. See *ARM*.

ARMED in *flute*. See *FLUTE*.

ARMED, in *Heraldry*, is used in respect of beasts and birds of prey, when their teeth, horns, feet, beak, talons, or tusks, are of a different colour from the rest.—He bears a cock, or a falcon, *armed* or, &c.

ARMED *at all points*, terms applied to a person who is completely covered with armour, except his face.

ARMEDON, or ARMENDON, in *Ancient Geography*, a name given by Pliny to a small island in the vicinity of Crete, opposite to the promontory of Sammonium; probably one of those nameless rocks which now encompass Candia.

ARMENA, in *Botany*, a name given by Pliny to a kind

of wild asparagus; but the ancient Greeks have used the same word to express the young shoots of the common asparagus, at the time when they are eaten; and not only these, but the young sprouts of the cabbage, and of all other esculent plants.

ARMENIA, in *Ancient and Modern Geography*, a country of Asia, derives its name, according to the Greeks, from Armonus, one of the Argonauts, who settled in this country. Bochart (*Phaleg*. l. i. c. 3.) supposes Armenia to be a contraction of *הר מני*, Har-mini, denoting the mountain of Mini, the name of a province of this country, mentioned by the prophet Jeremiah (ch. li. 27.) and placed by him between Ararat and Asschenaz; and probably referred to by Amos (ch. iv. 3.) under the name of *הר מונה*, Har-munah, or mountain of the moon. To this purpose Mr. Bryant (*Anal. Anc. Mythol.* vol. iii. p. 2.) distinguishing between this country and Aramea, or the land of Aram, which was separated from it by mount Taurus, supposed it to be denominated from Ar-men or Har-men, the mountain where the ark rested.

Armenia was anciently divided into Major and Minor, or the Greater and Lesser.

Armenia Major, or Armenia properly so called, was, according to Strabo, bounded on the south by mount Taurus, separating it from Mesopotamia; on the east by the two Medias; on the north by Iberia and Albania, or that part of Caucasia by which both are surrounded; and on the west by Armenia Minor, or the mountains Paryadres, by some Pontic nations, and by the Euphrates. Ptolemy divides the whole of Armenia into three districts: the first, comprehending that part which lies between the Cyrus and the Araxes; the second, those provinces which extend westward to the bending of the Euphrates; and the third, all the country lying between the springs of the Tigris, and that part of the Euphrates which separates Commagene from Armenia Major. The most considerable cities of ancient Armenia were Artaxata, Sebastia, Armosata, Tigranocerta, Artagera, Carthiocerta, Colonia, and Choria. Strabo enumerates six rivers of principal note; viz. the Lycus and Phasis, falling into the Pontus; the Cyrus and Araxes, discharging themselves into the Caspian Sea; and the Tigris and Euphrates, which disembogue themselves into the Persian Gulf. The most considerable mountains were the Mosehick, separating the western parts of Armenia from Colchis: the Paryadræ, extending from the former to the borders of Armenia Minor and Pontus; Masus, bounding the province of Sophene to the south, as Antitaurus does to the north; Niphates, Abus, and the Gordyæan mountains. As to the origin of the ancient Armenians, Herodotus, and after him Stephanus, derive them from the Phrygians, on account of several Phrygian words that had been blended with the ancient language of the Armenians. Strabo supposes, that they were originally Syrians, or that the Syrians and Armenians were two tribes of the same nation; and in this opinion Bochart acquiesces, as he discovered a great similarity between these two nations, in their manners and language. However, in process of time, many foreigners settled among them; namely, Phrygians, Greeks, and Persians.

Armenia was advanced at a very early period to the honour of a kingdom. After the death of Barzanes, the successor of its first king Scytha, it was divided into several petty kingdoms, as we learn from Pliny (H. N. l. vi. c. 9.). The Armenians were afterwards subdued by the Medes, to whom they were made tributaries by Astyages, but continued to be under the government of kings of their own country. During its subjection to the emperor of Persia,

Armenia was reduced to the form of a province, and its rulers were prefects appointed by the Persian kings. Armenia, as a part of the Persian empire, was subdued by the Macedonians under Alexander the Great; and remained in subjection to the Macedonians till the time of Antiochus the Great. During the minority of Antiochus, Artaxias and Zabriades, two governors of Armenia, united their forces, seized on the country they governed, and having added to it some neighbouring provinces, erected two kingdoms, viz. that of Armenia Major, which Artaxias reserved for himself, and that of Armenia Minor, which was allotted to Zabriades. Antiochus made several attempts to recover the provinces, which these governors had appropriated to themselves, but his efforts were unsuccessful; and by an alliance with the Romans, they secured to themselves and their posterity the continued possession of them. After the death of Artaxias, the Armenian history is interrupted by a chasm of about 70 years; it is only known, that the Armenians had engaged in a war with the Parthians, which terminated to their disadvantage. Tigranes, however, the king's son, who had been delivered as a hostage to the Parthians, was restored to his kingdom after his father's death, about the year before Christ 95; and entered into an alliance with Mithridates Eupator, against the Romans. Having married Cleopatra, the daughter of Mithridates, Tigranes invaded Cappadocia, and took possession of it, but surrendered it to Ariarathes, the son of Mithridates. Soon after his expedition into Cappadocia, he seems to have made peace with the Romans, and abandoned the cause of Mithridates; and having been chosen king of Syria, he indulged his ambition by invading Armenia Minor, and reducing the whole kingdom. After several successful expeditions, by which Tigranes enlarged the boundaries of his dominion, he was defeated with great slaughter by Lucullus the Roman general, in the vicinity of Tigranocerta, who at length took the town, and got possession of the immense treasures which it contained. The consequence of a second defeat was the total dispersion of the united armies of Tigranes and Mithridates, and the flight of the former to the most remote part of his dominions. During a cessation of hostilities, occasioned by the mutiny of the Roman soldiers against Lucullus, and a disagreement between him and Pompey, by whom he was superseded in the command, Mithridates and Tigranes rallied their forces, overran Cappadocia, and recovered all Armenia, with a great part of Pontus; but Tigranes's son, taking up arms against his father, joined the Romans, and conducted Pompey into Armenia. Tigranes, dispirited by his son's revolt, met Pompey on his march towards Artaxata, and surrendered himself into his hands. Pompey, after having heard the appeal of the father for justice against his son, restored the kingdom of Armenia to Tigranes, together with the greatest part of Mesopotamia; imposing upon him at the same time a fine of 6000 talents for making war against Rome without cause. Tigranes, being put in possession of his kingdom, voluntarily yielded to the Romans Cappadocia, Cilicia, Syria, and that part of Phœnicia which he possessed, and reserved for himself only his paternal kingdom. His successor Artaxades, called by Josephus, Artabazes, by Orosius, Artabanus, and by others, Artoadistes, was put to death by order of Marc Antony; and the kingdom of Armenia was conferred by Antony on Alexander, his son by Cleopatra. Artaxias, the eldest son of Artaxades, who was proclaimed king by the Armenians, was obliged by the Romans to abandon his kingdom, and fly into Parthia; but he was soon put to death. Tiberius, whom Augustus had deputed to settle the affairs of the east, bestowed the king-

dom of Armenia, after the death of Artaxias, on his younger brother, Tigranes; who was in a little while, by Tiberius's own orders, put to death. The kingdom was afterwards given by Augustus to Artaxades, supposed to have been the son of Artaxias II.; but the Armenians, tired with the Roman yoke, expelled him, and called in Phraates, king of Parthia, preferring subjection to the Parthians rather than to the Romans. Upon the approach of the Roman army, Phraates withdrew, and Artaxades was restored to the throne. After a succession of several kings, occasionally under the control of the Parthians, but generally holding the crown as vassals of the Roman empire, being either appointed or confirmed by the emperors; the ancient kingdom of Armenia was reduced by Trajan to the form of a province; and the Tigris was made the eastern boundary of the empire, which Augustus had thought fit to extend no farther than the banks of the Euphrates; but it soon recovered its liberty, and was again governed by its own kings, in the reign of Constantine the Great, and his successor, to whom the kings of Armenia were feudatories. In the Persian war, A. D. 365—378, the tributary kingdoms of Armenia and Iberia, the sovereignty and alliance of which had been solemnly renounced by the Romans, were exposed, without protection, to the arms of the Persian monarch. Armenia was reduced to the state of a Persian province by Sapor, and the administration was shared between a distinguished satrap and a favourite eunuch. In the reign of Justin II. it was subdued by the Saracens, A. D. 687, who held it till the irruption of the Turks; and when they took possession of it, about 755 or 884, they gave it the name of Torcomania. The Turks, by invading Persia, and other eastern countries, gave the Armenians an opportunity of throwing off the Turkish yoke, and of choosing kings for themselves, by whom they were governed till the country was again subdued by Occadan or Heccata, the son of Gengis, and first Cham of the Tartars. The conquest of the Tartars, however, was not so complete as wholly to extirpate from Armenia the race of its own kings; as we read of some of them who reigned afterwards, and particularly in our own chronicles, of Leo, king of Armenia, who, in the reign of Richard II., came into England to solicit aid against the Turks, by whom he had been driven from his kingdom. In the year 1372, Uffan Cassanes, king of Armenia, succeeding to the crown of Persia, made Armenia a province of that empire; and in this state it continued till the year 1522, when it was subdued by Selim II. and made a province of the Turkish empire; from which time it has ever continued subject to the Turks, except the eastern part of it, which belongs to the Persians.

Armenia Minor, was bounded on the east by the Euphrates, which separated it from Armenia Major; on the south by Mount Taurus, parting it from Cilicia; on the west and north by a long chain of mountains, called in different places Mons Scardificus, Amanus, and Antitaurus, which divided it from Cappadocia. This is a very mountainous country, but some of the mountains are interspersed with pleasant and fruitful vales, abounding with oil and wine, not inferior to the best in Greece. This country was a part of Cappadocia, till the reign of Antiochus the Great, when the distinction between Armenia the Greater and the Lesser was introduced; as we have already mentioned. In the time of the Romans it was divided into four provinces; viz. Laviniana, Mariana, Araviana, and Melitene, each of which had its cities, mentioned by Ptolemy; but those of chief note were Melitene, Nicopolis, Gannace, Aza, Arabyffus, Dascusa, Zimara, and Ladana. The manners, customs, and religion of the inhabitants of Armenia Minor, were

were similar to those of Armenia Major. Its first king was Zadriades, who, forming an alliance with the Romans, was maintained on the throne which he had usurped. Nero bestowed this kingdom on Aristobulus, great grandson of Herod the Great; upon whose death it fell to Tigranes, his near relation; and as he died without issue, Armenia Minor was made by Vespasian a province of the Roman empire, and thus continued till the division of the empire, when it was subjected to the emperors of the East. On the decline of their power, it was subdued, first by the Persians, and afterwards by the Turks, who called it "Genech," and have held it ever since. *Anc. Un. Hist.* vol. viii. p. 363—410. *Gibbon's Hist.* i. 435. ii. 139, &c. iii. 137. iv. 157, &c. v. 428. See ARMENIANS.

Armenia is still divided into *Lesser* and *Greater*. Armenia the Lesser is one of the two districts of ALADULIA; Cappadocia being the other. It has Greater Armenia on the east, Syria on the south, the Euxine on the west, and Cappadocia on the north. It is also called Western or Lower Armenia, and is subject to Turkey.

Armenia the Greater, or Turcomania, is bounded on the south by Mesopotamia, and the provinces of Diarbekir, Kurdistan, and Aderbijan; on the north by Georgia; on the east by Persia, and particularly the province of Shirvan; and on the west by Cappadocia and the Lesser Armenia, from which it is parted by the river Euphrates. It belongs partly to the Turks and partly to the Persians. The chief towns in that part which belongs to the Turks, are Erzerum, the capital of Armenia, Kars, Barazid, Mush, Argish, Van, &c. In that part of Armenia to which the dominion of Persia extends, are Erivan, the capital, Ganjals, near the Kur, Nacivan, Adabad, Astabad, Marend, Cors, &c. Armenia is one of the most healthy and fertile provinces in Asia; it abounds with mountains and valleys, lakes and rivers, so that the climate is temperate, and the soil rich; and some have conceived from its fertility, as well as its central situation on the globe, that it was the seat of Paradise, or the garden of Eden. Besides all sorts of grain, it produces tobacco, cotton, flax, melons, and grapes, and formerly olives. See ARARAT. It has also mines of salt, sufficient to supply all Persia. The extreme cold of this country has been long noticed; and to this purpose Sir John Chardin informs us, that he found ice in the rivolets in the mornings of the month of July. The inhabitants are sober and industrious; and they are described as a sensible and polite people. By their frugality and enterprise, they are singularly qualified for commercial transactions. Since the conquest of their country by Shah Abas, king of Persia, they have been dispersed through various parts of Asia and Europe, and have devoted themselves, as merchants and brokers, to trade, in the conduct of which they excel: hence they are become, in a great measure, masters of the whole trade of the Levant, and are much concerned in that of other places. It is common to meet with Armenians at Leghorn and Venice, and even in England and Holland; whilst they are also known, by their commercial dealings, in Persia, Turkey, and Tartary, and indeed all over the East. Shah Abas the Great, it is said, with a view of securing the conquest of Armenia, removed into Persia the first Armenians who ever settled there; and on this occasion about 30,000 families were transported into the province of Ghilan only, whence we have brought the finest Persian silks. He also caused all the inhabitants of Zulfa, a large city of Armenia, to settle at Ispahan, whence the new Zulfa of Persia took its name. This Zulfa is since become the center of the commerce of the Armenians; and to this same Shah Abas these people are said to owe their

genius and disposition for trade, little of which appeared before their transmigration into Persia. As Abas the Great had no other object in view but that of enriching his country, and was sensible that this must be effected by trade, he directed his views to silk as the most precious commodity, and to the Armenians as the most proper people to be employed in disposing of it. Accordingly, the Armenians, who were at first mere husbandmen, were converted by him into merchants; and these merchants are become some of the most able and most celebrated traders in the world. Such has been their extensive and established reputation in this respect, that the cardinal de Richlieu, we are told, had a design to make a settlement of them in France, for promoting the commerce of that country; and the chancellor Seguyer granted them a printing-house at Marseilles. See ARMENIANS.

ARMENIACA, in *Botany*. See PRUNUS.

ARMENIAN BIBLE. See BIBLE, and ARMENIAN *Version*, infra.

ARMENIAN *Bole*. See BOLE.

ARMENIAN *Language and Science*. The Armenians, according to the account given of them by Moses Chorenensis, were, in their original state, rude and savage, without letters, knowledge, and culture, in a great degree ignorant of the history of their ancestors; and indebted for the scanty information respecting them to the books of their neighbours. They had no written characters, and those of their neighbours were not fit for expressing the sounds of their language. At length, however, the art of writing was introduced among them. For a considerable time their transactions were recorded in the Assyrian language; in process of time they employed that of the Greeks; and afterwards they made use of that of the Persians. In the time of Moses Chorenensis, the names of their towns, and some other particulars, were expressed in one of these three languages. It was after the introduction of Christianity, that Miesrob, either towards the close of the fourth or the commencement of the fifth century, invented letters that accurately expressed the sounds of the Armenian language, and which are in use among them at this day. This invention, according to the tradition of the country, was revealed to Miesrob in a dream, after the author had in vain attempted to make the discovery himself, and after he had taken many useless journeys to procure assistance from the learned. Sir William Jones (*Asiat. Res.* vol. iii. p. 12.) is of opinion, that the basis of the Armenian language was ancient Persian, of the same Indian stock with the Zend, and that it has been gradually changed since the time when Armenia ceased to be a province of Irân. However, the letters in which it now appears are allowed to be comparatively modern; and if they be not derived from the Pahlavi, they are probably, as this ingenious writer imagines, an invention of some learned Armenians in the middle of the fifth century. According to Strabo, the language of the ancient Armenians was similar to that of the Syrians; at least it is very probable, from Polyæus (l. iv.), that they used the Syrian characters. The modern Armenians pretend, that, besides their vulgar language, they have a learned one, which has no affinity with the other oriental languages, and which is very expressive, and enriched with all the terms of religion, and of arts and sciences. Moses Chorenensis informs us, that Artefchisch II. took great pains to civilize the Armenians, and to rescue them from that state of barbarity in which they lived; and he says, that agriculture was little and rarely attended to in this country. They could neither build bridges nor construct boats; they had no method of dividing time, and were scarce able to distinguish

guish the succession of the moons. If, indeed, we credit the fables recorded by Berosus, we find that Noah left among the Armenians books of religious ceremonies; that he taught them astronomy, and the distinction of years and months; that on this account he was honoured amongst them, under the titles of Olybama and Arfa, i. e. the "heaven" and "sun;" that they dedicated many cities to him, under the name of Jupiter Sagus, esteeming him the soul of the heavenly bodies. The Armenians also tell us, that Noah taught them husbandry, and the planting of vines; that he was their first king; and that, when he quitted Armenia, he left his mother, wife, and several of his descendants, to people the country. However, in later times, the Armenians made considerable progress in the useful arts and sciences; and particularly in the science of commerce. See ARMENIA.

ARMENIAN Religion. Strabo informs us, that the ancient Armenians worshipped the same deities with those of the Medes and Persians; but this must be understood with some latitude, and as applicable to different epochs of their empire. The chief deity of the Armenians, according to Strabo, seems to have been the goddess Tanais, or Anaitis, whom we know, from other authorities, to be the Nâhéd or Venus of the Persians; and it is for many reasons highly probable, that one and the same religion prevailed through the whole empire of Cyrus. See ANAITIS. For an account of the Armenians after the introduction of Christianity, see ARMENIANS.

ARMENIAN Stone, lapis Armenus, a mineral cuprous stone, or earth of a blue colour, sometimes spotted with green, black, and yellow. It is a very scarce fossil, anciently brought only from Armenia, but is now found very pure, though in small quantities, in the mines at Gosselaer in Saxony.

The *Armenian stone*, in its harder state, bears a near resemblance to *lapis lazuli*, from which it seems only to differ in degree of maturity: they are distinguished by this, that the *lapis armenus* is softer, and instead of sparks of gold, is often speckled with green.

Boerhaave ranks it among semi-metals; and supposes it composed of a metal and earth. Woodward says, it owes its colour to an admixture of copper.

Mr. Kirwan says, that it consists of calcareous earth or gypsum, penetrated with the blue calx of copper: hence it sometimes effervesces with acids, sometimes not; but never gives fire with steel; it loses its colour when heated. *Elem. of Mineral.* p. 262.

Its chief use is in Mosaic work, though it has some place also in physic. It is a very valuable substance in painting, being a bright and florid blue. It was in so high esteem as a paint, among the ancients, that counterfeiters were continually attempted to serve in its place.

Both this and the *lapis lazuli* are ores of copper.

ARMENIAN Version, in *Biblical History*, an ancient translation of the scriptures, for which the church of Armenia, according to the unanimous testimony of the Armenian writers, is indebted to Mesrob, who is said to have finished it in the year 410. This is attested by Moses Chorenensis, a disciple of Mesrob; who adds, that he began with the Proverbs of Solomon. Moses lived in the fifth century, and assisted in the third version of the bible. The internal characters, and the readings of the Armenian version, have convinced the critics in that language, and especially Lacroze, a man of the most profound erudition, that the antiquity ascribed to the Armenian version does not exceed the truth. The learned, however, are divided in opinion, whether it was taken from the Greek original, or from the Sy-

riac version. The Armenians pretend that it was taken from the Syriac; and Moses Chor. (l. iii. c. liv. p. 300.) explicitly confirms this opinion. To which it has been added, that the Armenian version contains readings, which are found in no MS. or version, except the Syriac. But another relation from the same writer, (l. iii. c. lxi. p. 313.) is adduced on the other side of the question; and this is decisive: for it gives a full and credible account of the care bestowed by the Armenians on their version of the bible, and that they translated it twice from the Syriac, and a third time from the Greek. Hence may be assigned the reason, why the readings of the Armenian version are so frequently different from the Syriac. Another argument, which has been thought decisive in favour of the opinion, that our present Armenian version was not taken from the Syriac, is, that the former contains those books of the New Testament, which were never admitted into the latter. The Armenian version would be an inestimable treasure, if it had descended to the present age unaltered by time and superstition. But the churches of the Lesser Armenia, or Cilicia, submitted in the thirteenth century to the authority of the pope; and Haitho, or Hethem, who reigned from 1224 to 1270, became shortly before his death a Franciscan friar. This prince was not only attached to the church of Rome, but likewise acquainted with the Latin language; and, publishing a new edition of the Armenian bible, he altered, or rather corrupted it, from the Vulgate. He translated, for instance, all the prefaces of Jerom; and as the words of 1 John v. 7. were not in the old Armenian MSS., he inserted them probably from the Latin; for thirty-seven years after his death this passage was quoted at a council held at Cis, in Armenia, and is found in other Armenian records. *Michaëlis Int. N. T.* by Marsh, vol. ii. p. 98, &c. See ARMENIAN BIBLES.

ARMENIANS, in *Eccelesiastical History*, a division among the eastern Christians, thus called from *Armenia*, the country anciently inhabited by them.

Some have supposed, that Christianity was established in Armenia by the apostle St. Bartholomew; but this is certain, that in the beginning of the fourth century the Armenian Christians were in a flourishing state. In this century Tridates the king established an hierarchy; and in the beginning of the sixth, under the patriarch Nerses, the Armenian church seceded from other establishments, became independent, and embraced the theory of the Jacobites, some few articles of discipline excepted. The schism of the Armenians is placed eighty-four years after the council of Chalcedon, A. D. 535. It was consummated at the end of seventeen years; and it is from the year of Christ 552, that the æra of the Armenians is dated. In the fifth century, Armenia was divided into fifteen provinces, and subdivided into one hundred and ninety-one dioceses.

The Armenian church, in the sixteenth century, was governed by three patriarchs, the chief of whom resided in a monastery at Echmiazin, three leagues from Erivan. The diocese of this patriarch comprehends Greater Armenia; and he presides over forty-two archbishops; he is elected by bishops, and his election is confirmed by the king of Persia. The revenues of this spiritual ruler are such as would enable him to live in the most splendid and magnificent manner; and yet there is no mark of pomp or opulence in his external appearance, or in his domestic economy. His table is frugal, and his habit plain; nor is he distinguished from the monks, with whom he lives, by any other circumstance besides his superior power and authority. A second patriarch, subject to the first, and called "the Catholic," resides at Cis in Cilicia, and has twelve archbishops under him, who govern

govern the churches established in Cappadocia, Cilicia, Cyprus, and Syria. A third patriarch lives in the island of Aghtamar, in the midst of the great lake of Varapuracan; he has no more than eight or nine bishops under his jurisdiction, and is regarded by the other Armenians as the enemy of their church. Besides these prelates, who are patriarchs in the true sense of the term, the Armenians have other spiritual leaders who are honoured with the title of patriarchs, though it be unattended with the authority and prerogatives of the patriarchal dignity. Thus, the archbishop of the Armenians, who lives at Constantinople, and whose authority is respected by the churches established in those provinces that form the connection between Europe and Asia, enjoys the title of patriarch. The same denomination is given to the Armenian bishop who resides at Jerusalem; and to the prelate of the same nation, who has his episcopal seat at Camenee in Poland, and governs the Armenian churches that are established in Russia, Poland, and the adjacent countries. They assume the title of patriarchs, on account of some peculiar privileges conferred on them by the great patriarch of Echmiazin; for by an authority derived from this supreme head of the Armenian church, they are allowed to consecrate bishops, and to make every third year, and distribute among their congregations, the holy chrism or ointment, which, according to a constant custom among the eastern christians, is the exclusive privilege of the patriarchs. After the death of Abas the Great, the Armenian exiles, who, under his protection, had enjoyed the sweets of liberty and abundance, were involved in various kinds of calamity. The storm of persecution shook their constancy; and many of them apostatised to the Mahometan religion, so that it was apprehended that that branch of the Armenian church, which had been planted in Persia, and especially in Ispahan, would gradually perish. On the other hand, the state of religion in that church derived considerable advantages from the settlement of Armenians in different parts of Europe, for the purposes of commerce. These merchants, who had fixed their residence during the sixteenth century, at London, Amsterdam, Marseilles, and Venice, were not unmindful of their brethren in their native country; but supplied them with Armenian translations of the holy scriptures, and of other theological books, from the European presses, which prevented the illiterate and superstitious people, who lived under the Persian and Turkish governments, from sinking into the most consummate and deplorable ignorance.

The Armenians, though they agree with the other Monophysites in the main doctrine of that sect, relating to the unity of the divine and human nature in Christ, differ from them, nevertheless, in many points of faith, discipline, and worship; and hence it comes to pass, that they hold no communion with that branch of the Monophysites, who are Jacobites, in the more limited sense of that term. As to the eucharist, they agree with the Greeks, except in this that they mix no water with their wine, and use unleavened bread after the manner of the Latins. Infants of two or three months old are admitted to the communion; and the consecrated bread, soaked in the consecrated wine, is distributed with peculiar ceremonies. When the priest takes the chalice and patin, he is followed by his deacons and sub-deacons, with flambeaux and plates of copper furnished with bells: thus accoutred, with a censer before him, he goes in procession round the sanctuary; he then places them on the altar, pronounces the words of consecration, and turns himself to the people, who fall down, kiss the earth, and beat their breasts; then, after taking the bread himself, he

distributes it to the people. In the baptism of children, they practise triple immersion; and then the priest binds a small cord of silk and cotton round the neck of the child, anoints his forehead, stomach, arm-pits, hands, and feet, and makes on each part the sign of the cross. The child, after baptism, is carried home by the godfather with the sound of drums and trumpets. The women do not go to church for forty days after delivery; and they observe many Jewish customs. The Armenians celebrate an annual festival, called Caclacouran, which, half Armenian and half Persian, signifies the baptism of the cross. It is generally supposed that this is a religious ceremony, like the theophany of the Greeks, and the epiphany of the Roman catholics. It is celebrated on the sixth of January, and the terms signify "manifestation;" but it is not agreed, whether it commemorates the birth of Christ in his manifestation in the flesh; or his appearance to the wise men when he was manifested to the Gentiles; or his manifestation to the Jews by the voice from heaven at his baptism. Perhaps it is merely a civil institute, resembling the Roman lustrum. The Persians mark this Armenian festival in their almanacks; their Mahometan kings attend it; and some say, it is an imitation of the Abhirkan of the Guebres, or Gauris, i. e. the festival of lustral water, in use among the ancient Persians.

The Armenians abstain very rigorously from eating of blood, and meats strangled, and are much addicted to fasting; inasmuch that from their discourse, one would conclude that almost their whole religion consisted in fasting; and the higher the rank of their clergy, so much the greater must be their abstinence. Their monks, every Wednesday and Friday, eat neither fish, nor eggs, nor oil, nor any thing made of milk; and during Lent, they live upon nothing but roots; they are allowed wine only on the Saturday in the holy week, and meat on Easter Sunday. Besides the great Lent, they have four or five others of eight days each, preparatory for the four great festivals of the Nativity, the Ascension, the Annunciation, and of St. George, during which they are not allowed so much as to speak of eggs, flesh, oil, or butter.

Their monastic order is in great repute among them, since one of their patriarchs introduced that of St. Basil; but part of them, which have united with the church of Rome, have changed their ancient rule for that of the Dominicans.

ARME'NISTAIRE, in *Zoology*, a term occasionally given by some French writers to the MEDUSA tribe of *Vermes Mollusca*. See MEDUSA.

ARMENTA, one of the synonymous names of *Bos Americanus* of Gmelin, an animal which Dr. Shaw considers a variety only of *Bos Taurus*. "The American Bison," says that author, "seems to differ in no respect from the European, except in being more shaggy, and in having a more protuberant bunch or fleshy substance over the shoulders: the fore-parts of the body are extremely thick and strong; the hinder parts comparatively weak. The colour of the American Bison is reddish brown, and the hair in winter is of a woolly nature, falling down over the eyes, head, and whole fore-part of the animal. In summer, it often becomes almost naked, but particularly on the hind part of the body. It grows, according to Lawson, to a vast size, and has been found to weigh sixteen hundred, and even two thousand four hundred pounds; and the strongest man cannot lift one of the skins from the ground." Gen. Zool. Gmelin, who expresses some doubt whether it be distinct from *Bos Taurus*, assigns it the same character as Linnaeus

Linnæus had previously given to the variety of that species, *frus*: namely, cornibus divaricatis, juba longissima, dorso gibboso, only making it a second variety β . (horns divaricate, mane long, back gibbous, var. β) This is *Bos* (*Bison Americanus*) cornibus sursum reflexis, dorso gibboso, capitis pins longissimis obliquo. Brill. regn. an. *Bison d'Amérique* of Buff. *Buffalo*, Lawf. Carol. *Buffalo*, Catelby. *American oxen or beves*, Dobbs. Hudf. *American bull*, Pennant. See TAURUS.

ARMENTEQUI, or ARMENZA, in *Geography*, a village of Spain, in the country of Alava, once a city and see of an archbishop, one mile from Vittoria.

ARMENTIÈRES, a town of France, in the department of the North, and chief place of a canton in the district of Lille, seated on the Lys. It was taken and dismantled by the French in 1687. The place contains 7598, and the canton 14,914 inhabitants: the territory includes 55 kilometres and 6 communes. N. lat. $50^{\circ} 40'$. E. long. $3^{\circ} 3'$.

ARMENTO, a town of Italy, in the kingdom of Naples, and province of Basilicata, 20 miles S. S. E. of Potenza.

ARMERIA, in *Botany*. See DIANTHUS.

ARMERIUS. See DIANTHUS, and SILENE.

ARMET, in *Geography*, a town on the island of Noufflaout, one of the Molucca islands.

ARMIDA, in *Entomology*, the name of a species of PHALÆNA, in the *Bombyx* family, that inhabits Cayenne. The wings are yellow, speckled, and spotted with violet, and a streak behind of the same colour. Fabricius, Gmelin, &c. *Olf.* This is a large insect; the antennæ are yellow; the thorax yellow with a violet coloured spot on the back; abdomen yellow with a violet-coloured spot on the first segments; wings beneath yellow, with a violet spot in the middle. *Olf.* This must not be confounded with the moth figured by Cramer, t. 197. fig. A., under the specific name of ARMIDA, that being PHALÆNA *Erythrina* of Fabricius and Gmelin.

ARMIERES, in *Geography*, a small town of Hainault, on the Sambre.

ARMIGER, *armour-bearer*, in *Modern Writers*, denotes a title of dignity, rendered in English by *Esquire*.

ARMIGER, in *Entomology*, a species of CIMEX found in Africa. It is grey; thorax acutely spined; two dots on the scutel, the antennæ and legs pale. Gmelin and Fabricius. *Olf.* This is COREUS *armiger* of the latter author, and was first described by him in his *Species Insectorum*.

ARMIGER, a name given by Fabricius to a species of CANCER that inhabits the Southern ocean. The thorax is somewhat smooth, with eight teeth on each side, and five lobes in front; the arms are toothed on each side. Fab. Mant. Inf.

ARMIGER, a species of MONOCULUS, in the sixth section of the Gmelinian system, or those furnished with an univalve shell; eyes two, and placed beneath; two antennæ, and from four to eight legs. In this section (*Arguli*) are only three species, and the present is distinguished from the two others by having six legs. Slabb. microf. Gmel. &c.

ARMILAUSA, in *Antiquity*, a short military coat, reaching down only to the knee. Aquin. and Pitife. Lex. Ant.

It was thus called, as being divided both before and behind, and only close about the shoulders, in *armos tantum clausa*, quasi *armiclausu*. Ibid. Orig. l. xix. c. 22.

The word is sometimes also written, *armiclausu*, *armelauha*, *armicasia*, and *armilcasia*.

ARMILAUSA is also applied, in *Ecclesiastical Writers*, to the scapular of monks and canons; thus called on account

of its hanging from the arms or shoulders. Schmid. Lex. Eccl. p. 73.

The same habit is vulgarly called *patience*.

ARMILLA, in *Zoology*, one of the VERMES *infusoria*, belonging to the genus LIUCOPHRA, and both figured and described by Müller in his *Zool. Dan.* It is invisible to the naked eye, round, and annular; it is rather thickened above, and bent into the form of a ring.

ARMILLA *membranosa* is a name given by some *Anatomists* to the annular hyament.

ARMILLARIS, in *Zoology*, a creature of the VERMES *Mollusca* kind, in the genus NEREIS. It is subdepressed; peduncles come; cirri lenticular. This species inhabits the North seas, where it buries itself deep in the sands. The shape is siliform; length an inch and a quarter; on each side of the head are three moniliform feelers; in the body are a hundred and twenty joints, each of which is furnished with a small peduncle on both sides; and the tail terminates in two long filaments or threads. Müll. O. Fabr. Gmel. &c.

ARMILLARY, ARMILLARIS, formed of *armilla*, a bracelet or ring, in *Astronomy*, an epithet given to an artificial sphere composed of a number of metalline circles, representing the several circles of the mundane sphere put together in their natural order.

Armillary spheres serve to assist the imagination in conceiving the arrangements and the motions of the heavenly bodies.

Such is that represented (*Plate II. Astron. fig. 14.*)—Where P and Q represent the poles of the world, AD the equator, EL the ecliptic and zodiac, P A G D the meridian, or the solstitial colure, T the earth, FG the tropic of cancer, H T the tropic of capricorn, MN the arctic circle, OV the antarctic, N and O the poles of the ecliptic, and R S the horizon.

The armillary sphere constructed by Dr. Long, in Pembroke-hall, Cambridge, is eighteen feet in diameter; and more than thirty persons may conveniently sit in it. The lower part of the sphere invisible in England is cut off; the whole apparatus is so contrived, that, when in order, it may be turned round with as little labour as it takes to wind up a jack.

ARMILLARY *trigonomet*, an instrument first contrived by Mr. Mungo Murray, and improved by Mr. Ferguson, consisting of five semicircles; viz. meridian, vertical circle, horizon, hour circle, and equator; so adapted to each other by joints and hinges, and so graduated and divided, as to serve for expeditiously resolving many problems in astronomy, dialling, and spherical trigonometry. For the drawing, description, and method of using it, see Ferguson's *Traacts*, p. 80, &c.

ARMILLATI MILITES, in *Antiquity*, those who wore bracelets on their left arms, bestowed on them by their generals or emperors. But the term is more frequently applied to soft and effeminate soldiers, who wore bracelets on their arms, not as the rewards of their prowess, but marks of their foppery. Aquin. Lex.

ARMILLATUM, in *Conchology*, a species of BUCCINUM, figured and described by Lister and others. The shell is oblong; the aperture large and toothless; the whorls crowned with a single row of tubercles. Its native place is unknown.

ARMILLATUS, in *Entomology*, a species of CURCULIO that inhabits the Cape of Good Hope. The thorax is somewhat spinous on the sides; a grey belt near the tip of the thighs; shanks dentated. Sparm. nov. act. Stock. There is a variety of this insect entirely of a brownish grey colour, and

and another in which the wing-cases are clouded with grey, and an oblong spot placed obliquely on each side.

ARMILLATUS, a species of *CERAMBYX*, of a large size, that is found in India. On each side of the thorax are four spines; wing-cases ferruginous, with a black margin; a single tooth on the posterior thighs. Gronov. Fabr. &c.

ARMILUSTRIUM, in *Antiquity*, a feast held among the Romans; wherein they sacrificed, armed at all points, and with the sound of trumpets.

Some define *armilustrum* to have been a feast, wherein a general review was made of all the forces, in the Campus Martius. But this does not come up to the point; for Varro does not derive the word from the Latin *arma* and *lustrare*, to make a review; but from the custom of holding this feast in the place where the reviews were used to be made, or rather from their going round the place armed with bucklers.

The sacrifice was intended for the expiation of the armies, and the prosperity of the arms of the people of Rome; and was celebrated on the fourteenth of the calends of November. This feast may be considered as a kind of benediction of arms. It was first observed among the Athenians.

ARMINIACHA, in *Geography*, a small town of Asia Minor, in Aladulia, at the foot of mount Taurus; supposed to have been the ancient Cybistra.

ARMINGS, in a ship, are the same with *wash-cloths*, being red cloths hung about the outsides of the ship's upper works fore and aft; and before the cubbridge-heads.

There are some also hung round the tops, and called *top-armings*. See *TOP*.

ARMINIA, in *Ancient Geography*, a river of Italy, in Etruria, flowed from north to south between Saturnia and Vulturni, and discharged itself into the sea near Forum Aurelii.

ARMINIANISM, the doctrine of Arminius and of his followers. See *ARMINIANS*.

ARMINIANS, in *Ecclesiastical History*, the followers of Arminius, who, though educated at Geneva, and having imbibed the doctrines concerning predestination and grace, maintained by Calvin, Beza, Zanchius, &c. began to express his doubts concerning them in the year 1591; and upon farther inquiry, adopted sentiments more nearly resembling those of the Lutherans, than of the Calvinists. After his appointment to the theological chair at Leyden, he thought it his duty to avow and vindicate the principles which he had embraced; and the freedom with which he published and defended them, exposed him to the resentment of those who adhered to the theological system of Geneva, which then prevailed in Holland; but his principal opponent was Gomar, his colleague. The controversy which was thus begun, became more general after the death of Arminius in the year of 1609, and threatened to involve the United Provinces in civil discord. The Arminian tenets gained ground under the mild and favourable treatment of the magistrates of Holland, and were adopted by several persons of merit and distinction. The Calvinists, or Gomarists as they were now called, appealed to a national synod; accordingly the synod of Dort was convened by order of the States General, in 1618; and was composed of ecclesiastical deputies from the United Provinces, as well as from the reformed churches of England, Scotland, Hesse, Bremen, Swisserland, and the Palatinate. The principal advocate in favour of the Arminians was Episcopius, who at that time was professor of divinity at Leyden. It was first proposed to discuss the principal subjects in dispute, and that the Arminians should

be allowed to state and vindicate the grounds on which their opinions were founded; but some difference arising as to the proper mode of conducting the debate, the Arminians were excluded from the assembly; their case was tried in their absence; and they were pronounced guilty of pestilential errors, and condemned as corrupters of the true religion. In consequence of this decision, they were treated with great severity; they were deprived of all their posts and employments; their ministers were silenced, and their congregations were suppressed. However, after the death of prince Maurice, who had been a violent partisan in favour of the Gomarists, in the year 1625, the Arminian exiles were restored to their former reputation and tranquillity; and under the toleration of the state, they erected churches and founded a college at Amsterdam, appointing Episcopius to be the first theological professor. The Arminian system has very much prevailed in England since the time of archbishop Laud, and its votaries in other countries are very numerous.

The distinguishing tenets of the Arminians may be comprized in the following five articles; relating to predestination, universal redemption, the corruption of man, conversion, and perseverance. With respect to the first, they maintained, "That God, from all eternity, determined to bestow salvation on those, who he foresaw would persevere unto the end in their faith in Christ Jesus; and to inflict everlasting punishments on those who should continue in their unbelief, and resist unto the end his divine succours; so that election was conditional, and reprobation in like manner the result of foreseen infidelity, and persevering wickedness."

On the second, the Arminians taught, "That Jesus Christ, by his sufferings and death, made an atonement for the sins of all mankind in general, and of every individual in particular; that, however, none but those who believe in him can be partakers of their divine benefit."

On the third article, they held, "That true faith cannot proceed from the exercise of our natural faculties and powers, nor from the force and operation of free-will, since man, in consequence of his natural corruption, is incapable either of thinking or doing any good thing; and that therefore it is necessary, in order to his conversion and salvation, that he be regenerated and renewed by the operation of the Holy Ghost, which is the gift of God through Jesus Christ."

Fourthly, "That this divine grace, or energy of the Holy Ghost, begins and perfects every thing that can be called good in man, and consequently all good works are to be attributed to God alone; that nevertheless this grace is offered to all, and does not force men to act against their inclination, but may be resisted, and rendered ineffectual by the perverse will of the impenitent sinner." Some modern Arminians interpret this and the last article with a greater latitude.

Fifthly, "That God gives to the truly faithful, who are regenerated by his grace, the means of preserving themselves in this state;" and though the first Arminians made some doubt with respect to the closing part of this article, their followers uniformly maintain, "that the regenerate may lose true justifying faith, forfeit their state of grace, and die in their sins."

The modern system of Arminianism likewise, founded on a comprehensive plan projected by Arminius himself, as appears from a passage in his last will, extends the limits of the Christian church, and relaxes the bonds of fraternal communion in such a manner, that Christians of all sects and denominations, whatever their sentiments and opinions may

be, papists excepted, may be formed into one religious body, and live together in brotherly love and concord. But, in order to avoid the reproach of being altogether unconnected by any common principles, Episcopius drew up a confession of faith, expressed for the most part in words and phrases of Holy Scripture, which the Arminians have generally adopted, though not enjoined upon them by any authoritative obligation.

The Arminians are also called *Remonstrants*, from an humble petition intitled their *Remonstrance*, which, in the year 1610, they addressed to the states of Holland. Their principal writers are, Arminius, Episcopius, Vorstius, Grotius, Curcellæus, Limborch, Le Clerc, and Wettstein; not to mention many others of more modern date. Brandt's Hist. of the Reformation in the Netherlands; and Mosheim's Eccles. Hist. by Dr. Maclaine, vol. v.

The progress of Arminianism has been somewhat retarded, and its prevalence restrained, more especially in Germany, and several parts of Switzerland, in consequence of the ascendancy which the Leibnizian and Wolfian philosophy hath gained in these countries, particularly among the clergy and the men of learning. Leibnitz and Wolf, by attacking that liberty of indifference which is supposed to imply the power of acting, not only without, but against motives, struck at the very foundation of the Arminian system. Besides, by considering the multiplicity of worlds that compose the universe as one system or whole, whose greatest possible perfection is the ultimate end of creating goodness, and the sovereign purpose of governing wisdom, they removed from the doctrine of predestination those arbitrary procedures and narrow views with which the Calvinists have been charged with loading it, and gave it a new, a more pleasing, and a more philosophical aspect. As the Leibnizians laid down this great end as the supreme object of God's universal dominion, and the scope to which all his dispensations are directed, so they concluded, that if this end was proposed, it must be accomplished. Hence the doctrine of necessity, to fulfil the purposes of a predestination founded in wisdom and goodness: a necessity physical and mechanical in the motions of natural and inanimate things, but a necessity moral and spiritual in the voluntary determinations of intelligent beings, in consequence of prepollent motives which produce their effects with certainty, though these effects be contingent, and by no means the offspring of an absolute and immutable fatality. These principles are evidently applicable to the main doctrines of Calvinism; by them predestination is confirmed, though modified with respect to its reason and end; by them irresistible grace, irresistible in a moral sense, is maintained upon the hypothesis of prepollent motives and a moral necessity. The perseverance of the saints is also explicable upon the same system, by a series of moral causes producing a series of moral effects. The learned Canzius has written a book for the express purpose of shewing the eminent use that may be made of the Leibnizian and Wolfian philosophy, in throwing light upon the chief articles of our faith, "Philosophiæ Leib. et Wolf. usus in theologia per præcipua fidei capita." Francof. and Leipf. ed. 2. 1749. The scheme of necessity, and of partial evil tending to universal good, has been fostered in some parts of Great Britain, and has converted some zealous Arminians into moderate and philosophical Calvinists. But "the zealous Calvinists (says Dr. Maclaine) have for the most part held firm to their theology, and blended no philosophical principles with their system; and it is certain that the most eminent philosophers have been found, generally speaking, among the Arminians. If both Calvinists and Arminians claim a KING, it is certain that the latter alone

can boast of a NEWTON, a LOCKE, a CLARKE, and a BOYLE.

ARMINIUS, or HARMANSEN, JAMES, in *Biography*, founder of the sect called *Arminians*, was born at Oude-Water in Holland, in 1560; and he lost his father in his infancy. He was first instructed by a Catholic priest, who was secretly a friend to the reformed religion, and by his liberality encouraged as a student at Utrecht. Upon the death of this patron, he obtained assistance from Rodolphus Snelius, his countryman, and in 1575 accompanied him to Marpurgh. During his abode in this place, he received information that his native town was pillaged by the Spaniards; and hastening thither to visit his family, he found that his mother, sister, brother, and other relations, had been put to the sword. At Leyden he afterwards prosecuted his studies with reputation; and at length the magistrates of Amsterdam provided him with the means of finishing his education at Geneva. The lectures of Theodore Beza on the epistle to the Romans, are supposed to have first suggested to Arminius those speculations, which led him to form a new sect. As he adopted and privately taught the philosophical system of Peter Ramus, he was obliged to withdraw from Geneva; and he then removed to Basil, where he gained great credit by his lectures: after a short interval he returned to Geneva, and enjoyed in tranquillity the society of the learned. Desirous of farther improvement, he visited Padua, in order to attend the philosophical lectures of the celebrated Zabarella; and after having travelled in Italy for five or six months, he returned, in 1588, to Amsterdam, where he found his patrons much prejudiced against him. "It was reported and believed, that Arminius had kissed the Pope's toe, whom he had only seen in a crowd; that he had contracted an intimacy with Jesuits, whom he had never heard of; that he had introduced himself to Bellarmin, whom he had never seen; and that he had abjured the reformed religion, for which he was prepared to die." These prejudices, however, as they were occasioned by groundless rumours and calumny, gradually subsided; and the talents and zeal of Arminius, as a strenuous advocate for the reformed religion, and an eloquent preacher, raised him to distinguished notice; accordingly he was engaged to refute a work which had been written against Beza's doctrine of predestination. In the course of his examination, he became a proselyte to the opinions which he had undertaken to refute; and renouncing the Calvinistic doctrine concerning the decrees of God and divine grace, he maintained, that the merits of Christ extended to all mankind, and that the grace of God, which is necessary to salvation, is attainable by all. This change in the sentiments of Arminius took place in the year 1591; and his undisguised and honest avowal of it excited hostilities, which would have been injurious to Arminius, if the magistrates of Amsterdam had not interposed and suppressed the contest. After having officiated as a minister in the church of Amsterdam for fifteen years, Arminius, notwithstanding the heretical opinions which he had adopted, was elected, in 1603, to the professorship of divinity in the university at Leyden, and admitted to the degree of doctor in divinity. In his lectures, and also in his writings, the professor strenuously asserted and defended his opinions, and made many converts both among the clergy and the laity. His adversaries, however, were very numerous; and of these the most violent was his colleague, Francis Gomar. Unable to contend with the various modes of attack by which his enemies persecuted him, he sunk under a complication of diseases, and departed this life in the year 1609. Arminius was eminently distinguished by his piety and integrity,

integrity, and conciliated the esteem even of his enemies, by his modesty and diffidence, by the candour of his temper, and the affability of his manners. He chose rather, says Brandt, his biographer, to be religious in reality than in appearance, and preferred the approbation of his own mind to the opinion of the world. His motto was "Bona conscientia paradusus." "A good conscience is a paradise." Peter Bertius concludes his funeral oration upon him with these words: "He was a man who could not be sufficiently esteemed by those who knew him, and those who did not esteem him, never knew him sufficiently." He was a friend to universal toleration, and with him it was a fundamental principle, that Christians are accountable only to God for their religious sentiments, and that no individual can be justly punished by the magistrate for erroneous opinions, while he conducts himself as a virtuous and obedient subject, and makes no attempt to disturb the peace and order of civil society. As a writer, his manner of reasoning and his style are somewhat scholastic; but he is distinguished by simplicity and perspicuity. His works are comprised in one volume, 4to. printed at Frankfort in 1631 and 1634, &c. His "Disputationes publicæ et privatæ" afford a just and accurate notion of the doctrine and character of Arminius. Mosheim's *Eccl. Hist.* vol. v. p. 439, &c. Gen. Dict. See ARMINIANS.

ARMIRO, in *Geography*, a sea-port town of European Turkey, in the province of Thessaly or Janna, on the south-west side of the gulf of Volo; supposed to be the Eretria of the ancients. N. lat. 39° 42'. E. long. 23° 30'.—Also, a river in the isle of Candia, near Castell-Malvesi, which empties itself into the Mediterranean near Paleo-Castro, said to be the "Oaxes" of the ancients.—Also, a town of South America, in Guiana, four leagues from Cayenne.

ARMISTICE, ARMISTITIUM, in *Military Language*, from *arma stare*, or *stare*, a short truce, or a cessation of arms for a small time.

ARMOA, in *Geography*, a river of Arcadia, which discharges itself into the Alpheus, supposed to be the Amarynchus of the ancients.

ARMOACHUOIS, a tribe of wandering Indians on the borders of Canada.

ARMOISIN, in *Commerce*, a silk stuff, or kind of taffety, of an indifferent goodness; made at Lyons, and at several places in Italy. There are half armoisins, made at Avignon, which are of inferior quality, and less price than the others. Some pretend that the word *armoisin* comes from the Italian *armesino*; or that these silks were thus called, because there were coats of arms delineated on the cloths in which they were wrapped.

There is also a taffety of this name manufactured in the East Indies; but of an inferior quality to those made in Europe.

ARMONA, in *Geography*, a town of the island of Negroponte.

ARMONICAC. See AMMONIAC.

ARMONICA, from *αρμονια*, *harmony*, is a name which Dr. Franklin has given to a musical instrument constructed with drinking-glasses. It is well known that a drinking-glass yields a sweet tone, by passing a wet finger round its brim. Mr. Pockrich, of Ireland, was the first who thought of playing tunes formed of these tones. He collected a number of glasses of different sizes, fixed them near each other on a table, and tuned them by putting into them water, more or less, as each note required. Mr. Delaval, F. R. S. made an instrument in imitation of that which was contrived by Mr. Pockrich: and from this instrument Dr. Franklin took the hint of constructing his *armonica*.

The glasses for this musical instrument are blown as nearly as possible in the form of hemispheres, having each an open neck or socket in the middle. The thickness of the glass near the brim is about one tenth of an inch, increasing towards the neck, which in the largest glasses is about an inch deep, and an inch and a half wide within; but these dimensions lessen as the size of the glasses diminishes, only observing that the neck of the smallest should not be shorter than half an inch. The diameter of the largest glass is nine inches, and that of the smallest three inches: between these there are twenty-three different sizes, differing from each other a quarter of an inch in diameter. For making a single instrument, there should be at least six glasses blown of each size, and out of these thirty-seven glasses (which are sufficient for three octaves with all the semitones) may be found, that will either yield the note required, or one a little sharper, and fitting so well into each other, as to taper regularly from the largest to the smallest. The glasses being chosen, and the note for which each glass is intended being marked upon it with a diamond, they are to be tuned by diminishing the thickness of those that are too sharp, which is done by grinding them round from the neck towards the brim, comparing, by means of a well-tuned harpsichord, the tone drawn from the glass by your finger with the note you want, as founded by the corresponding string of the harpsichord. The largest glass in the instrument is G, a little below the reach of a common voice, and the highest G, including three complete octaves: and they are distinguished by painting the apparent parts of the glasses within side, every semi-tone white, and the other notes of the octave with the seven prismatic colours: so that glasses of the same colour (the white excepted) are always octaves to each other.

When the glasses are tuned, they are to be fixed on a round spindle of hard iron, an inch in diameter at the thickest end, and tapering to a quarter of an inch at the smallest. For this purpose, the neck of each glass is fitted with a cork, projecting a little without the neck; these corks are perforated with holes of different diameters, according to the dimension of the spindle in that part of it where they are to be fixed. The glasses are all placed within one another, the largest on the biggest end of the spindle with the neck outwards; the next in size is put into the other, leaving about an inch of its brim above the brim of the first; and the others are put on in the same order. From these exposed parts of each glass, the tone is drawn, by laying a finger upon one of them, as the spindle and glasses turn round. The spindle thus prepared, is fixed horizontally in the middle of a box, and made to turn on brass gudgeons at each end. A square shank comes from its thickest end through the box, on which shank a wheel is fixed by a screw: this will serve, like a fly, to make the motion equable, when the spindle is turned by the foot like a spinning-wheel. The wheel is eighteen inches in diameter, and conceals near its circumference about twenty-five pounds of lead, and may be made of mahogany. An ivory pin is fixed in the face of the wheel, about four inches from the axis; over which is put the loop of the string, that comes up from the moveable step to give it motion. The box is about three feet long, eleven inches wide at the biggest end, and five inches at the smallest end; it is made with a lid, which opens at the middle of its height, and turns up by back hinges. The instrument, thus completed, stands on a neat frame with four legs. This instrument is played upon by fitting before it, as before the keys of a harpsichord, turning the spindle with the foot, and wetting the glasses now and then with

a sponge and clean water. The fingers should be first soaked in water; and rubbed occasionally with fine chalk, to make them catch the glass, and bring out the tone more readily. Different parts may be played together by using both hands; and the tones are best drawn out when the glasses turn from the ends of the fingers, not when they turn to them.

The advantages of this instrument, says Dr. Franklin, are, that its tones are incomparably sweet beyond those of any other; and that they may be swelled and softened at pleasure by stronger or weaker pressures of the finger; and continued to any length: and when it is once well tuned, it never again wants tuning. Franklin's Letters, &c. on Philosophical Subjects, p. 428.

Mr. Poekrich, the first performer on runner glasses, by a fatal accident was burned in his bed at his lodgings in Swihin's Alley near the Royal Exchange, in 1759, by the house in which he lodged taking fire in the night, and being destroyed, before any assistance could arrive.

Mr. Schuman, a German harpsichord-master, played publicly afterwards with considerable success in several parts of London and Weilmünster. But the first and only performer on the Armonica, constructed and so accurately described by Dr. Franklin, in a letter to Padre Beccaria of Turin, was the eldest Miss Davies, sister to Miss Cecilia Davies, the celebrated opera singer, but best known in Italy by the title of *l'Inglese*.

The talents of our two countrywomen, the Miss Davieses, who resided a considerable time at Vienna, in the same house as the celebrated Haffé and Faustina (see Present State of Music in Germany, Art. Vienna, vol. i.), have been described by the admirable lyric poet, Metastasio; the eldest for her performance on the Armonica, at that time a new instrument; and the youngest, for her vocal abilities. The Empress-queen had been so pleased by their several talents, that in the year 1769, on the marriage of the infant duke of Parma with the arch-duchess Maria Amelia, she desired Metastasio to write a cantata, which was set by Haffé, in order to display their several talents. This cantata has been published in late editions of the poet's works, under the title of *l'Armonica*, the name of the new instrument on which the eldest Miss Davies accompanied her sister, in the performance of the cantata.

A letter written by the poet to the princess di Belmonte, at Naples, recommending these performers to her protection, will serve as a comment to the cantata just mentioned.

"The bearers of this most reverential address, are two English young persons, travelling under the conduct of their worthy parents, in order to give testimonies at Naples of their several abilities in music; their names are Miss Mary, and Miss Cecilia Davies: the first performs with admirable skill on an instrument of new invention called the Armonica. It is composed of glasses of different sizes, revolving, by means of a pedal, on a spindle. These glasses, forming a regular scale of tones and semi-tones, being delicately touched with wet fingers during their revolution, produce the most uncommonly sweet and celestial tones imaginable; particularly in pathetic strains, for which the instrument is eminently calculated. The other sister, who is possessed of a very pleasing and flexible voice, sings extremely well, with much art and natural expression; and when accompanied by her sister on the Armonica, she has the power of uniting her voice with the instrument, and of imitating its tones so exactly, that it is sometimes impossible to distinguish one from the other. They have been here universally admired and applauded: and my most august patroness, who

has deigned to hear them frequently, has honoured them with munificent testimonies of imperial approbation."

Miss Cecilia Davies performed in the theatre of San Carlo at Naples, the part of *Bradamante*, in Metastasio's new opera of Ruggiero.

In the first fol. edit. of the French *Encyclopedie*, t. xvii. printed in 1765, under the article *VERRES, MUSIQUE DES*, Musical glasses, it is said; "they have contrived within these few years to produce a new species of harmony from glasses, which is extremely pleasing to the ear.

"It is pretended that an Englishman of the name of Puckridge is the inventor. However this method has been long known in Germany. The instrument used on this occasion is an oblong square box, in which are arranged and fixed many round glasses of different diameters. In these there is water of different quantities. By rubbing the edge of the glasses with a wet finger very gently, the sweetest, most melodious, and sustained tones are produced, and with these the most agreeable airs are performed.

"The Persians, in very high antiquity, have produced musical sounds by a similar contrivance; by striking seven porcelain cups, tuned by water, with little sticks, a regular scale is produced." No authority is given for these assertions. Metastasio, who had resided near fifty years in Germany, calls the Armonica, "an instrument of new invention." The producing musical tones from drinking-glasses has been long known to the natives of Great Britain and Ireland; but the forming different toned glasses into an instrument, and tuning them by water, we have not the least doubt was the invention of a native of Ireland, of the name of Poekrich; as the placing a series of glasses on a cylinder, or spindle, turned with a pedal, was the invention of Dr. Franklin, who tuned his glasses by grinding, not by water. A drawing of Miss Davies's instrument will be found in one of the plates of musical instruments. Her performance on this musical instrument so pleased the great masters on the Continent, that Padre Martini, Haffé, Galuppi, Jomelli, Mozart, &c. presented her with original compositions, purposely produced for the Armonica, upon which she often plays, extempore, still more exquisite strains than these great composers, at an early period of its invention, thought this instrument capable of expressing.

ARMOR, or ARMOUR, in a general sense, is a term that may be applied to any defensive habit, used to protect the person of the wearer from the attack of an enemy; or abstractedly, to any part of such habit. Armour, in the aggregate sense of the word, is frequently called *barney*; by the English writers of the fifteenth and sixteenth centuries, as well as in our ancient statutes.

The materials anciently used for the making of armour were exceedingly multifarious; depending in some instances upon the produce of the country in which it was fabricated, but more generally upon the judgment or experience of the inhabitants. Among the more civilized nations, brass, iron, and other metals were preferred; and in the time of Asiatic magnificence, even gold was not spared: on the other hand, the Libyans, according to Herodotus (in Polymnia), who assisted Xerxes when he invaded Greece, were clothed in tunics of leather, to supply the place of body armour; and the same author (in Clio) assures us, that the military dress of the ancient Persians was composed of leather, and girt about the body with a leathern girdle; and speaking of the Asiatic Indians (in Polymnia), he tells us, that some of them used a species of armour made with wood; others again plaited rushes upon each other like mats, and worked them into the form of a *thorax*, or *breast-plate*; he also mentions (in Melpomene) a people who inhabited the maritime parts

parts to the westward of the Garamantes, who, "when they make war," (says he,) "wear the skins of ostriches instead of armour."

The shield, the helmet, and the breast-plate, may claim precedence of every other part of the ancient defensive armour; the first, from the obvious use of such an instrument and the extensiveness of its service; and the other two, from the protection they afforded to the sources of life and sensation. We must refer to the sacred writings for the earliest memorials of the ancient military habit; little more, indeed, than the names of the different parts of this habit occur; but with the assistance of more modern authority, we may be enabled to form some idea of the nature and usefulness of those parts, when applied to the protection of the wearer.

The defensive armour of the Israelites consisted of a shield, a helmet, a military vest, a thorax or breast-plate, and belts of metal, or plated with metal, to gird upon the body, beneath the breast-plate. It does not appear that they wore greaves or military boots for the defence of their legs; though the greaves are mentioned as a part of the armour belonging to Goliath, the giant of Gath (1 Samuel, chap. xvii. ver. 6.): they were also worn by other Asiatic nations; and at the siege of Troy, by the Grecians in general. Homer frequently distinguishes his countrymen by the epithet of well-greaved or well-booted Grecians. The greaves attributed by the author of the book of Samuel to Goliath, are called (גָּרְדָּיִם), literally, the shinners, or shining plates, and were made of brass, resembling probably those upon the legs of the little figure marked A. *Plate 1.* of *Armour*, which reach from the top of the knee, to the instep, but do not cover the feet; so those of the giant are expressly said to have been placed above his feet. The figure B. upon the same plate, of which we have two views, exhibits the greaves of a thicker consistency, and from the manner in which they are fastened upon the back part of the legs, they appear to have been made with the skins of animals, having the fur upon them. See GREAVES.

In the book of Exodus (chap. xxviii. ver. 32. and chap. xxxix. ver. 23), Moses mentions a garment, which our translators considered as a military one, and accordingly have rendered it an *habergeon*; that is, a short tunic of mail, fitted close to the neck, without sleeves, and descending something lower than the breast. The sacred penman, speaking of "the robe of the Ephod," says, "there shall be a hole in the top, in the midst thereof, and it shall have a binding of woven work round about the hole of it, as it were the hole of תַּחְרָה an *habergeon*, that it be not rent." But the deduction of the original word, from a root which signifies to make hot, justifies the lexicographers in conceiving it to have been a thick or quilted garment fitted close to the body; and probably it was the same as the vest which Saul put upon David, previously to his arming him with the thorax and girdle (1 Samuel, chap. xvii. v. 38, 39.). This vest, indeed, is distinguished by another name (רָצֵץ), but the objection is of little moment, for a redundancy of names applied to single objects, is common enough to be met with in the Hebrew, and other Asiatic languages. Saul's tunic was evidently placed under the body armour, to prevent the plates of metal from pressing too closely on the skin, and hurting it; and answered precisely the purpose of the doublet, or pourpoint, worn beneath the coat of mail in more modern times (see DOUBLET); and perhaps, like that, was made without sleeves. Upon the *fig. B. Plate I.* we find a similar kind of military garment which is worn without the breast-plate, and has only one sleeve occupied by the left arm; this tunic appears to have been fabricated with some rigid material, perhaps of thick leather,

and might have answered the double purpose of the pourpoint and the pectoral: the right sleeve, which is full of folds, is evidently made of more pliant stuff than the body garment, and probably belonged to an inner tunic; it was substituted for the leather sleeve, because it was less rigid, and did not equally impede the motions requisite for the sword-arm. This curious ancient figure is preserved in the British Museum; it is of Greek workmanship, and was found in the ruins of Herculaneum.

The *thorax* or *breast-plate*, called in the Hebrew שָׁרְיָן or שָׁרְיָן, derived from a word significant of *strength*; and usually rendered by our translators, *coat of mail*; formed another part of the Jewish military habit; it is first mentioned as such, 1 Samuel, chap. xvii. v. 38. and the same word is used for the body armour of Goliath the Philistine (ibid. ver. 5.), joined with an adjective, expressive of its having been covered with plates of brass in the form of scales. This word is totally omitted in our translation, but it is a very important one; and the passage may be rendered, "a thorax or breast-plate of scales of brass." Herodotus (in Polymnia) informs us, that the Median and Persian soldiers belonging to the army of Xerxes, had each of them a tunic covered with plates of iron like the scales of a fish, and adorned with sleeves of various colours; but over the tunic, it appears from the historian, they wore an Egyptian pectoral. This kind of scale armour consisted of small plates of metal fastened upon a garment fitted to the body and limbs of the wearer, and contrived to hang over each other like a fish's scales, but in such a manner, as not to prevent the flexibility of the garment, nor obstruct the exertions of the soldier's agility. The form and nature of this equipment are admirably represented by the Sarmatian horsemen, upon the Trajan column; a dress, somewhat similar, was partially adopted in the western parts of Europe by the heroes of the middle ages; but it was soon superseded by the chain, or ring mail, which became universal.

It is highly probable, that the *thorax* of the Philistine was much longer in proportion to his size than that of Saul, and might cover the greater part, if not the whole of the front of his body; at least one may so judge from its great weight, equal, it is said, to 185 pounds Troy weight; for had the breast-plate of Saul been longer or larger than the ancient pectorals usually were, and proportionate to his size, it would have been an absurdity in him to have attempted to put it upon David, who was a stripling, and at least a full head and shoulders beneath his stature. Yet we are told, he did put it upon David, and girded his sword upon the tunic beneath it. When David rejected the dress, it is not said he did it because it was too large or too long, or that he appeared ridiculous in it, but because he had not essayed, tried, or been used to such an equipment; for which reason, instead of being useful, it was an incumbrance to him, and obstructed the free use of his arms. See BREAST-PLATE.

If we turn to the little figure A. *Plate I.* we may meet with something resembling the body armour of Saul, and may easily conceive how it might be applied to a person of smaller stature, without the least inconsistency; first, we observe the short skirts of the tunic (above mentioned) with which David was first invested; secondly, the thorax or breast-plate, here apparently one solid plate of metal, worked into the form of a man's breast, and fastened upon the tunic; beneath the thorax, are two belts plated with metal, from one of which the sword was usually suspended. If we look to the sacred text, we shall find that Saul girded David with his own sword upon the tunic; and as he had been previously invested with the thorax, it reasonably follows that

that the sword was girded "upon" a portion of the tunic which hung below the thorax, agreeably to the representation of the belts upon the bronze. There is only one girdle mentioned in this passage of the scripture; and perhaps one was sufficient for David, though Saul, a much taller man, might require two or more. The little figure here engraved perfectly explains the manner in which Ahab king of Israel received his death's wound; we are told (1 Kings, chap. xxii. ver. 34.), that he was smitten by an arrow, "between the joinings of the belts, and between the breast-plate," that is, in the opening where the lower part of the breast plate was joined with the uppermost belt or girdle. See BELT.

Xenophon (Cyrop. lib. vi.), describing the military dress of Abradates king of Susa, mentions *arm-pieces* as part of it; and the Ancient Grecian sculptures exhibit broad plates of metal for the protection of the shoulders (see the *fig.* marked C. C. *Plate I. of Armour*); and also *cuisse's* for the thighs; and *tassels*, or plated straps, attached to the thorax, for the protection of the lower parts of the body. In process of time the thorax was gradually enlarged, and from its aggrandisement originated a complete suit of body armour, such as was introduced by the Grecians, and occasionally used by the Romans. In the middle ages, this custom of casing of men in brass or iron was revived, and carried in more modern times to a greater extent than it had been before. A front and a back view of a close-armed man according to the ancient Grecian fashion, is given, *Plate I.* marked C. C.; the succeeding alterations will appear hereafter, under the article *Coat of Mail*. We may here add, that the *lorica* or *mail*, a species of armour so famous in the ages of chivalry, is by no means of modern invention. The thorax of the Philistine giant appear to have been somewhat of this kind, consisting of small plates of metal quilted over each other like the scales of a fish: and if we turn to *Plate I.* and examine the body of the *figure* marked D. we shall find strong indication of a chain-mail or net-work of wire rings. If it should be thought, from the smoothness of the bronze upon the left side, that the armour was only made to cover the right, it will be necessary to observe, that this figure in its original state was supported by another figure, whose right arm, broken away near the elbow, appears beneath its left shoulder, and the part of the arm which is lost covered that portion of the body where we remark the deficiency of the mail; in the present case, the left hand of the supporting figure is also seen upon the right hip.

The Egyptian armour of defence for the person consisted of a *brass helmet*, and a *thorax* or coat of linen so plaited and folded as to resist the point of the enemy's weapon; the whole seems to be formed of rolls of linen or cotton fastened together like the stockings worn at present by the Tyrolese, or like the hay-bands which a countryman twists round his legs to serve instead of boots. *Fig. 1 and 2. Plate II.* were copied from the tombs of the kings of Thebes. Denon's Egypt. Herodotus.

In the earliest defensive armour for the person, the Greeks seem to have used the skins of animals. Hercules wore the lion's skin, which, in very ancient sculpture and painting, is tied round his neck by the paws, and again fastened round his loins with a ligature, in such a manner as to form a kind of coat. Jupiter wore the *ægis*, or goat-skin, for both breast-plate and shield, to which afterwards was added a cover of metal scales for better defence, and it was farther decorated with the Medusa's head to terrify the beholder; the *κύων*, or dog's skin, was the ancient hat and helmet.

The *κύων*, or *dog's skin*, is the name generally given to the helmet by the Greeks. Homer frequently uses it, but it is particularly given to that worn by Ulysses in the night expedition. *Τρυφάλεια*, *tryphalia*, is the triple-crested helmet;

the crests were principally made of horse-hair. *Fig. 4. Plate II.* is of the first description. *κόρυς*, *korus*, a word derived from *κόρυς* the head, is properly applied to N^o 13 and 15. *Plate III.* and the helmets of 7 and 8. *Plate II.* because this species of helmet being drawn over the face, at the same time that the form of the head was preserved, the features of the wearer appeared through the front of the helmet.

The Greeks made the thorax, or armour for the body, of brass, linen, or leather. Homer calls his heroes, *brass-coated*.

The plate-armour for the body consisted of four principal divisions, the breast-plate, the back-plate, the shoulder-plates and the *ζώνη*, or the *zone*.

The breast and back plates were formed to resemble the naked body (see *fig. 8. Plate II.* and *fig. 14 and 15. Plate III.*); these two pieces were fastened together by hasps on each side.

The shoulder-plates were tied to the paps of the breast, in some instances, which projected like high buttons, to allow room for the knot; see *fig. 8. Plate II.*

The *ζώνη*, or *zone*, comprehended the belt and hanging straps which formed the lower part of the thorax; see *fig. 3, 7, and 8. Plate II.*

Fig. 6 and 7. are coats of mail; in *fig. 6.* the shoulder-plates are fastened by strings to a small circle or *umbilicum*, close to the girdle. *Fig. 3. Plate II.* has the appearance of linen armour or a coat of mail.

Κνήμιδες, *ocreae* were greaves of brass or tin to defend the legs; these were fastened behind the leg with two straps and buttons each.

The *aspis* was the large round shield, see *fig. 9. Plate III.* The *pelta* was a smaller shield, *fig. 10. Plate III.*

There were several other shields, but those of the large round, and large oval forms, seem to have been most commonly used.

Fig. 12. Plate III. is one of the Roman heavy-armed soldiers called *principes*; his armour consists of plates of iron or brass. *Fig. 20. Plate III.* is one of the Roman *velites*, or light-armed soldiers, his covering consists of a leather jacket, breeches or femoralia, and sandals. *Fig. 15.* same plate, is a Roman general (the emperor Trajan), whose dress is sufficiently explained in the account of Grecian plate armour; the only peculiarity in this figure worthy of observation is, that he wears the military *chlamys* or cloak.

Fig. 11. and 19. Plate III. are two brazen swords in the British Museum, the latter is sheathed in the same metal; these with the helmets 13 and 16. and the breast and back-plates 14 and 18. were found in the field of Cannæ, and are believed to have belonged to the Carthaginians.

Fig. 5. Plate II. is a figure in an elegant suit of armour, copied from an antique paste in the collection of Mr. Tassie; but whether it is Etruscan or Roman would be difficult to determine, as it bears but little resemblance to any other ancient work of art that is known.

Although the foregoing observations will throw considerable light on the subject of Greek and Roman armour in general, yet it must be acknowledged that their species is almost infinite; and that all the antique statues, pictures, and gems of armed warriors, of which many hundred exist, exhibit those differences and peculiarities which must naturally be expected from the variety of times, countries, geniuses of men, and the gradual progress of improvement. In the representations of armour for the body made of leather, we see the imitations of that covered with hair, and made with plaited thongs: in the linen mail, we see those doubly and triply plaited, and others worked in oiled holes: in the mail of brass and iron, we see different kinds of scales and chain-works,

with

with the various combinations of rings; these differences may be observed in the structure of the armour itself, besides the great variety of animals, foliage, and devices, with which the different specimens are decorated. Concerning the magnificent *thorax* of Menelaus described by Homer in the beginning of the eleventh book of the *Iliad*, it is said to have had ten stripes of black steel, twelve of gold, and twenty of tin, besides three dragons on each side, which rose up to the neck of the *thorax*; all this could be only decoration, the general form resembling some one of those represented in *Plate II*.

Homer and Hesiod's descriptions of the shields of Achilles and Hercules strike the reader with astonishment, and bewilder his imagination; but we may form a simple and satisfactory conception of both, by remembering they were large circles, decorated with bas-reliefs of figures, the subjects of which followed in succession until the last reached the first. In an enumeration of the magnificent examples of ancient armour, the trophies of Augustus, formerly called those of Marius, in the capitol, excite our astonishment by the extreme richness and beauty of the helmets, coats of mail, shields, &c. which compose them; and the knowledge of these noble works has been widely communicated by Piranesi's admirable prints. In concluding this subject, it is to be remarked, that the excavations of Pompeia have furnished a great quantity of curious and interesting information on the subject of ancient armour, totally unknown to the moderns before. There are in the king of Naples' museum of Porici, ancient Roman helmets made of brass, with visors to cover the face and guard the eyes; armour for the upper and lower arms, shoulders, elbows, and thighs of a kind not to be seen in any of the antique statues or bas-reliefs. Some of these pieces are adorned with figures, groups, and other ornaments; but as no drawings are permitted to be made from them, except by those persons employed for the publication of the Herculanean antiquities, by the Neapolitan government, we must wait for the next volume of that work to satisfy our curiosity.

In *Plate I*, the figures C, C, and D, will be sufficiently explained by what has been said concerning the different articles in *Plates II* and *III*, there being nothing particular in these figures excepting the swan or goose's head which forms the crest of *fig. C*. The *fig. A*, and B, wear helmets with visors; the helmet of *fig. A*, has a high cone and two horns; the shield, which was originally a long square, is broken.

Vegetius observes (*De re militari*, l. i. c. 10.), that the Roman infantry was invariably covered with defensive armour, from the foundation of the city to the reign of the emperor Gratian. The relaxation of discipline, and the disuse of exercise, rendered the soldiers less able and less willing to support the fatigues of the service; they complained of the weight of the armour, which they seldom wore; and they successively obtained permission for laying aside both their cuirasses and their helmets. The heavy weapons of their ancestors, the short sword and the formidable *pilum*, which had subdued the world, insensibly dropped from their feeble hands. As the use of the shield is incompatible with that of the bow, they reluctantly marched into the field. The cavalry of the Goths, the Huns, and the Alani, had felt the benefit and adopted the use of defensive armour; and as they excelled in the management of missile weapons, they easily overwhelmed the naked and trembling legions, whose heads and breasts were exposed, without defence, to the arrows of the barbarians. The loss of armies, the destruction of cities, and the dishonour of the Roman name, ineffectually solicited the successors of Gratian to restore the helmets and cuirasses of the infantry. The enervated soldiers

abandoned their own and the public defence, and their pusillanimous indolence may be considered as the immediate cause of the downfall of the Roman empire. Gibbon, vol. iii. p. 67, 68.

Thus far we have chiefly considered the defensive *Armour* of the *ancients*; and shall now present our readers with a correct sketch of its history as it relates to Britain.

The early *Britons*, though by no means unacquainted with the stratagems of war, seem to have had no defensive armour; merely endeavouring to make their appearance dreadful, by tracing wild and horrid images upon the skin; and though they afterwards adopted many of the Roman customs, arts, and habits, they do not seem to have availed themselves of armour, perhaps thinking the freedom of exertion oppressed by such an incumbrance; and it must likewise be remembered, that it was the constant policy of the Romans to deprive all those nations whom they subdued of the use of arms, and to accustom them to a soft, effeminate way of life, that they might have neither ability nor inclination to shake off their yoke (*See Tac. vit. Agr.*). And the Britons perhaps had little inclination to adopt the Roman method of defence, since it could be no honour to wear the military habit of their conquerors. The *Saxons*, on the other hand, were a stout and hardy people, whose chief delight was war, and though among the earliest of them who arrived in Britain, we hear of nothing like what is now called armour, yet there seems some ground for thinking that it was not entirely unknown to them, since the first species of military habit they afterwards made use of, was the scale armour, similar to that which Xenophon describes among the Sarmatians, from whose neighbourhood it is now believed the ancestors of the Saxons had their origin. In manuscripts of the tenth century, the Saxon soldiers appear habited in a kind of mail, or scale armour, similar to that worn by the ancient Normans (*Strutt's Manners and Customs of the English*, vol. i. p. 29.), already described. And another kind of mail in use appears to have been composed of strong wires closely interwoven with each other, like fine wicker, with which the soldiers were clothed from head to foot (*see Pl. IV. f. 1. 2.*); others, however, appear to have been clothed with it in part only, its inflexibility seeming to require that it should be confined to the body, ending at the bottom of the stomach, and a little below the shoulders (*ibid.* vol. i. p. 30.). The helmets usually worn with this latter species seem to have been of skins. A manuscript in the Cotton library (*Cleop. c. 8.*) universally allowed to be as old as the reign of king Canute, represents the *Danish* soldiers in complete suits of armour (*see Pl. IV. fig. 3, 4.*), from the bends and folds of which they are supposed to have been made of leather, with a diamond crossing of strong wires, interwoven with each other, and made with strong joints in proper places. This armour covers the whole body, legs, and arms, half the left hand being left uncovered, for the better purchase in holding either the sword, the spear, or the shield. Their heads are covered with helmets, much superior to those we have mentioned of the Saxons, and still better fashioned to sustain the shock of a violent blow. A projection also crosses the face, to prevent the person armed from receiving any hurt from the cross stroke of an enemy's sword, not unlike what is sometimes seen in the ancient Greek and Roman helmets; and, with a little variation, in the modern helmets of the Mamalukes.

The defensive armour of the *Normans* was chiefly the coat of fence called *Mail*, especially for the better sort; others had body armour of iron or leather. The mail was made of small iron links, with joints at a convenient distance, and so contrived as to move upon each other with the greatest facility

facility (see *Pl. IV. fig. 5.*). With this defensive armour both the horsemen and better sort of foot were covered, the face and left hand excepted. When the mail itself did not compose the guard for the head, they wore helmets, either of iron or brass; the leaders and standard-bearers had generally beavers, composed of thin plates of iron, fastened on the mail before the face; and a few, apparently of an higher rank, wore helmets clumsily constructed.

Mail armour maintained its ground from the Norman invasion to the fifteenth century. Henry IV. is the last of our kings who appears in it on his great seal (Gough's *Sep. Mon. I. cxliii.*). Many instances, however, of persons armed *mi-partie*, plated and mail, occur about the middle of the fourteenth century (*Ibid. cxliv.*); at which time Mr. Grose affirms, that plated armour was completely introduced both here and in France. The transition from mail to plate armour is shewn (*Pl. IV. fig. 6.*), from the monument of Thomas Beauchamp, earl of Warwick, 1370. When *plated armour* came into fashion, it was composed of different pieces for the back, breast, shoulders, arms, hands, thighs, legs, and feet, under the several names of *cuiras*, consisting of a back and breast-piece; *pouldrons*, *brassarts*, or *gondebrass* or *avant-brass*, (corruptly, in English, *vambraces*); *gauntlets*, *cuissearts*, with *genouillieres*; *greaves*, and iron shoes. Such was the suit of armour in the tower, said to have been made for Henry VIII., when eighteen years of age (*Pl. V. f. 1.*). Plate armour continued in use, with few variations, to the close of the seventeenth century; when the introduction of firelocks, with the improvement of artillery, and a more active mode of warfare, superseded the incumbrance of heavy armour. Of all this furniture of war, scarce any thing is now retained, except the *cuirass*; the gorget or neck-piece, worn by officers, being at present only a badge of honour, and of no defence. The minute changes of our ancient armour may perhaps be best traced, by the inquisitive reader, upon sepulchral monuments.

The different articles of which the ancient armour was composed will be found under their respective heads.

ARMOR, OR ARMOUR, Horse. The horse belonging to the cavalry, in the army of Cyrus, according to Xenophon (*Cyrop. l. vii.*), were armed with forehead-pieces, breast-plates, and side-pieces, and the side-pieces served as thigh-pieces to the horsemen. The Sarmatian war-horses were covered with small plates, in imitation of the scales of a fish, after the manner of their riders. And Plutarch informs us, that when the Parthians opposed the younger Crassus, they were not only clothed with defensive armour themselves, but that their horses were completely armed in brass and steel (*οἱ δ' ἵπποι καταπεφραγμένοι χαλκοῖς καὶ σιδηροῖς ὑφασμασίν*), polished to the highest perfection (*Plut. Vit. v. iii. p. 280. ed. 1723.*). The investing of horses with defensive armour was common enough in the middle ages, and was perhaps introduced into England by the Normans (See *Hoveden Annal. p. 446.*). It continued to the close of the sixteenth century, when the horse-armour appears to have consisted of a *chanfron*, or kind of mask, which inclosed the face and ears, with sometimes a spike issuing from the center of the forehead; a *criniere*, to guard the mane; a *poitrinal*, or breast-plate; and a *croupiere*, or buttock-piece, that usually descended to the hocks. (See *Pl. V. fig. 2.*) After this time the *barde*, or horse armour, appears to have been neglected; except that in the thirteenth and fourteenth years of Charles the second, the horses of the militia were ordered to be provided with a pectoral and crupper (Grose's *Milit. Antiq. ii. 338.*). To prevent their horses from being fatigued under all their own incumbrances, and the enormous weight of their riders, and to preserve their vigour for the charge, the men at arms in ancient times had commonly hackneys for

riding on a march, and did not mount their war horses till they were certain of coming to action; a circumstance which sometimes occasioned them to be surpris'd and defeated, before they could mount their chargers and form.

ARMOR, OR ARMOUR, for the Tilt Yard. The splendor in which the tournaments of ancient times were held, will account for our making the armour of the tilt-yard a separate article. In the middle ages, the common armour seems to have been used, only sumptuously covered with drapery, both as to man and horse, and occasionally charged with the armorial bearings of the combatants. The saddle and furniture were oftentimes of goldsmiths' work, and the caparisons richly embroidered. Toward the reign of Henry the Eighth, the drapery was in a great measure thrown aside; and the taste of the combatants was usually displayed in the elegance and lightness of their tilting armour. Under Elizabeth, it seems to have been extravagantly ornamented, and, in many cases, materially to have differed from the military habit of defence. Mr. Pennant, in the history of London, has engraved the portrait of Robert Dudley, earl of Leicester, clad for the tilt-yard; from which it appears very plainly, that taste and show were chiefly consulted (See *Pl. V. fig. 3.*). Mr. Strutt too, in his *Manners and Customs of the English*, has engraved a portrait of Prince Henry, eldest son of James the First, in a sort of half-tilting habit, worn when the pike was exercised on foot (see *Pl. V. fig. 4.*).

The gallantry of going to the battle naked, without any defensive armour, prevailed so far, that the French, during the reign of Louis XIV. were obliged to be continually issuing ordonnances to restrain it; in consequence of which, the general officers, and those of the cavalry, were obliged to resume their cuirass, which yet has been but ill observed.

And now we conclude the article of armour; but not without informing our readers, that the first part of it was furnished by a hand of which death has now deprived us. The person we allude to was Mr. Joseph Strutt, of whose ability as an antiquary the world has been long convinced.

ARMOR, Coat, is the escutcheon of any person or family, with its several charges, and other furniture; as mantling, crest, supporters, motto, &c.

Thus we say, a gentleman of *coat-armour*, meaning one who bears arms. See **ARMS.**

ARMORACIA, in *Botany*. See **COCHLEARIA**.

ARMORACIÆ, in *Entomology*, a species of **CHRYSO-MELA**, described in the Linnæan Fauna Suecica, by Fabricius, Herbst, Gmelin, and others. It is very glossy; blueish black above; beneath black. Degeer names it *chrysomela plantaginis*, from its being found chiefly on the plantain. *Cochlearia armoracia ranunculo aquatili, flammula.*

ARMORIAL, something that relates to arms, or heraldry.

In this sense we say an armorial figure, armorial bearing, armorial ensign, the armorial lily of France, armorial lion or leopard of England, &c.

ARMORIAL is also a title given to several books, which contain the arms of a number of persons of quality.

In this sense we meet with the French armorial, the Spanish armorial, &c.

ARMORIC, OR ARMORIC, something that belongs to the province of Bretagne, or Britany, in France. See **ARMORICA**.

ARMORIC, absolutely used, denotes the language in use among the inhabitants of Britany.

The French usually call this language *Bas-breton*; compounded, says M. Menage, of *ar, upon,* and *mor, sea.*

The *Armoric* is a dialect of the Welch, and sister of the Cornish language.

The inhabitants of Britany, of Cornwall, and of Wales, formerly understood each other's speech; though considerable diversities have crept in between these languages, since their separation from each other.

The inhabitants of Britany, Mr. Llyd observes, by their intercourse with the French, have much altered their ancient orthography; besides that there are several words in the Armoric which have no affinity with the Welsh; and that both the Armoric and Cornish retain several ancient words and phrases which are lost in the Welsh. Julian Manoir, a Jesuit, has published an Armoric grammar and vocabulary, in French, which has been translated into English by Mr. Williams, and published with notes by Mr. Llyd. In *Archæol. tit. 3. and 4. p. 180, &c.* Before him, Yvon Quillevère had published an Armoric vocabulary at Paris, 1521.

Toland has given a catalogue of several Armoric words, which prove to be Irish; also a vocabulary Armoric and Irish.

ARMORICA, in *Ancient Geography*, the name given by the Romans, after the conquest of Gaul, to that portion of its maritime countries that is situate in the north-west corner between the rivers Seine, the Loire, and the Atlantic. The name Armorica was anciently given to the whole northern and western coast of Gaul, from the Pyrenæans to the Rhine; under which name it was known in Cæsar's time. *Cæs. De Bell. Gall. lib. vii. c. 14.* During the first three centuries of the Christian æra, this remote corner was with little interruption in tranquil subjection to the restless dominion of Rome. But its submission was the exaction of force, not the acquiescence of content. The Armoricans were impatient of slavery, and when the northern hordes shook the tottering fabric of the western empire, they were eager to revolt. They expelled the Roman magistrates who acted under the authority of the usurper Constantine; and a free government was established among a people who had so long been subject to the arbitrary will of a master. The independence of Armorica was confirmed by Honorius himself; but after the northern conquerors of Gaul had successively fallen, the maritime provinces were restored to the empire. Employed on this portion of history, Gibbon (*Hist. vol. v. p. 363.*) in a few lines marks the character of a people "restless under constraint, but unfit for liberty." Yet their obedience was imperfect and precarious; the vain, inconstant, rebellious disposition of the people, was incompatible either with freedom or servitude; and Armorica, though it could not long maintain the form of a republic, was agitated by frequent and destructive revolts. In the end of the fifth century, when Clovis established his Franks in Gaul, Armorica, after a long and obstinate opposition, at length capitulated on honourable terms, by which the people were admitted to be a part of the newly-formed kingdom of France. The Britons, when finally subdued by the Saxons, and expelled from their native land, sought and found refuge in Armorica, and coalescing with the natives, became a powerful though vassal state. This territory, says Warton (*Hist. Eng. Poet. vol. i. diss. 1.*), was, as it were, newly peopled in the fourth century, by a colony or army of the Welsh, who migrated thither under the conduct of Maximus, a Roman general in Britain, and Conan, lord of Meiriadoc or Dornighland. Milton more than once alludes to this Welsh colony:

"Et tandem Armoricos Britonum sub lege colonos,"
Manfus.

And, in the "Paradise Lost," (b. i. 579.), he mentions in—
Vol. II.

discriminately the knights of Wales and Armorica, as the customary retinue of king Arthur:

"—What refunds
In fable or romance, of Uther's son
Begirt with British and Armoric knights."

This migration of the Welsh into Armorica, which had thrown off its dependence on the Romans during the distractions of the empire, seems to have occasioned a close connection between the two countries for many centuries. From this connection of Wales with Armorica, the scene of ancient romances, we are able to deduce the reason why Wales was so constantly made the theatre of the old British chivalry, and also why so many of the favourite fictions which occur in the early French romances, should also literally be found in the tales and chronicles of the elder Welsh bards. It was owing to the perpetual communication kept up between the Welsh and the people of Armorica, who abounded in these fictions, and who naturally took occasion to interweave them into the history of their friends and allies.

Armorica, or Britany, was not annexed to the crown of France till the close of the fifteenth century, and the inhabitants retained various privileges and immunities, which continued in force until the revolutionary establishment of departments put an end to all local or provincial privileges, and amalgamated all former diversities into one mass.

From the settlement of the refugee Britons, Armorica received the name of Lesser Britain or Britany, and was governed by dukes. See BRITANY, and GAUL.

ARMORIST, a person skilled in the knowledge of arms.

ARMORUM CONCUSSIO, in *Antiquity*, the clashing of arms, practised by the Romans before an engagement, designed for striking a panic into their enemies. It always followed the *clasticum*, and *barritus*.

ARMORY, or ARMOURY, a store-house of arms, or a place where military habiliments are kept to be ready for use. There are armories in the Tower, and in all arsenals, citadels, castles, &c. Imbezbling or destroying the king's armour or warlike stores, is declared to be felony without benefit of clergy, by stat. 31 Eliz. c. 4. 22 Car. II. c. 5. 12 Geo. III. c. 24.

ARMORY, is also used for a branch of HERALDRY: being the knowledge of coat-armors, as to their blazons and various intendments.

ARMOSATA, or ARSAMOSATA, in *Ancient Geography*, a very considerable city of Armenia, and next in importance to Artaxata; situate between the Tigris and the Euphrates. It took its name from the river Arsamus of Pny, or Arsamatus of Tacitus, on which it was built. It was by turns taken and sacked by the Huns, Arabs, and other neighbouring nations.

ARMOSON, a promontory of Asia, in Carmania, near a place called Armasia, at the entrance of the Persian Gulf.

ARMOT, in *Geography*, a small island in the sea of Gascogne, on the coast of Santonge.

ARMOURER, a maker of arms, or armour. The profession of an armourer, which was formerly an office of great importance in this kingdom, is now totally extinct.

The Roman armourers were disposed in certain places in the empire, it being forbid, either to sell, to buy, or make arms elsewhere. They were exempt from all offices and taxes, and received a salary from the public.

When once they had taken that employment on themselves, neither they nor their children were allowed to quit it. To prevent this, they had a kind of note, or stigma, impressed on the arm, whereby they might be known.

known. If any of them fled, or secreted their ware, the rest were obliged to answer for him; on account of which, the effects of such as died without a legal heir went to the college.

There were fifteen *armamentaries* or repositories of arms in the Eastern empire, placed near the frontiers; and nineteen in the Western. Puffe, L. x. Ant.

ARMOURER *of a ship*, a person whose office is to take care that the arms be in a condition fit for service.

ARMS, ARMA, in a general sense, include all kinds of weapons, whether for offence or defence. Nicod derives the word from the Latin phrase, *quod operantur arma*, because they cover the shoulders or sides; but Varro derives *arma*, *ab arcendo*, *eo quod arcant hostes*. It is supposed, that the first artificial arms were of wood, and were employed only against beasts; and that Belus, the son of Nimrod, was the first that waged war; whence, according to some, came the appellation *bellum*. Diodorus Siculus takes Belus to be the same with Mars, who first trained soldiers up to battle. Lucretius is minute on this subject:

“Arma antiqua manus, ungues dentesque fuere
Et lapides, & item sylvarum fragmina, rami.
Et flammæ atque ignes postquam sunt cognita primum.
Pottius ferri, vis est ærisque reperta,
Et prior aris erat quam ferri cognitus usus.”

The most ancient and universal arms of offence seem to have been bows and arrows; to which succeeded the sling. See Gen. xxi. 20. xxvii. 3. Job, xli. 19. Hesiod expressly tells us, that in the early ages, the arms and instruments of the primitive heroes were composed entirely of brass.

The arms of the early Greeks were heavy, and principally defensive, consisting of an helmet, a breast-plate, and greaves, all of brass; with a shield, commonly of bull's hide, but often strengthened with the metal just mentioned; the shield being a superadded protection for every part. The Locrians, however, under Oilean Ajax, were all light-armed; bows were their principal weapons, and they never engaged in close fight. Mitford's Greece, vol. i. p. 102.

The infantry which composed the Roman legions were of three kinds, the *hastati*, the *principes*, and the *triarii*. Their arms, both offensive and defensive, were in a great measure the same. They wore an head-piece of brass or iron, coming down to the shoulders, but leaving the face uncovered; a coat of mail, generally made of leather, covered with small plates of iron, in the form of scales, or iron rings twisted within each other; greaves for the legs, or so sometimes only on the right leg; an oblong shield, with an iron boss; a sword; and two long javelins. Adams Rom. Antiq. 367. There was also a fourth kind of troops, called *vulvites*, from their swiftness and agility; they were first instituted in the second Punic war. They were assigned no regular post, but fought in scattered parties, wherever occasion might require, usually before the lines. They were equipped with bows, slings, and javelins, a small round shield, a sword, and a helmet of the skin of some wild animal. (Ibid. 368.) What contributed most to render the Romans masters of the world was, that having successively warred against all nations, they constantly renounced their own methods, arms, &c. whenever they met with better. Thus Romulus, during his war with the Sabines, a bold and warlike nation, adopted their broad buckler in lieu of the small Argian buckler, which he had used till that time.

The arms in use among the ancient Britons were slight, and unfit to withstand the Romans in a close encounter; though in light skirmishes, prudently made, the Britons generally gained considerable advantage (Strutt, Manners

and Customs, vol. i. p. 3.). Their young men were not only trained to the use of arms in early youth, but continued in the exercise of them to the very close of age; and were always ready to appear, when called by their leaders into actual service. Their very diversions and amusement were of a martial and a manly call; and the javelin they used in hunting was a principal weapon in the field of war. They had neither helmets, breast plates, nor defensive armour, but a light shield. Cæsar tells us they had a dart or javelin, which they threw from their war chariots to annoy the enemy; with a short spear for the infantry, that had a ball at the nether end filled with lead; this they shook with great violence before the battle, in hope to intimidate the enemy; and again when they engaged the cavalry: to the upper end of it a thong was fixed, that when used as a missile weapon, it might be recovered, and again used in the close encounter. They had also long and broad swords, without points, designed only for cutting, which were slung by a chain over the left shoulder; and occasionally a short dirk fixed in their girdles. The scythes that were sometimes fastened to their chariot-wheels, may perhaps be ranked among their offensive arms.

The ancestors of the Saxons, in their native woods, we are told, transacted no business, public or private, without being completely armed (Pac. De Morib. Germ. § xii.); and the custom of wearing swords on all occasions prevailed in every country where the Germans took possession.

The early Saxons, previous to their arrival in Britain, beside the buckler and the dagger, used a sword bent in the manner of a scythe; but their descendants soon changed it for one that was long, straight, and broad, double-edged, and pointed.

The Saxon infantry were not all furnished with the same offensive weapons; some being provided with spears, others with axes, and not a few with clubs, beside swords, which were common to them all. Their shields were generally of the middle size, for the most part oval, always convex, and having a sharp spike projecting from the center; with which, while they defended themselves, they annoyed their enemies. They fought with their swords and shields, much like the gladiators of the Romans; and in the earliest times had nothing like defensive armour, which they seem to have adopted about the eighth or ninth century. Some alteration in our national arms probably took place on the arrival of the Danes. Their swords were both longer and larger than the Saxon swords; the lance had a slight difference; and they appear to have brought the battle-axe into more general use. Verstegan enumerates the cross-bow as a Saxon weapon, but had no good authority for the assertion; as it neither appears in any ancient history or delineation, that the Saxons ever were acquainted with it. And though they used the common bow when following the chase, they never brought it to the field of action. Their cavalry were armed with greater uniformity than they who fought on foot; carrying in their right hands long spears, and at their left sides a sword. They were also better provided with defensive armour.

The Saxon and the Danish troops were chiefly infantry; and though not entirely for the introduction, we are certainly indebted to the Normans for the more general use of cavalry. In regard to defensive arms among the Normans, both horse and foot soldiers were differently clad; some to support the set battle, and some the lighter skirmishes (Strutt, Man. and Customs, vol. i. p. 96.). The offensive arms the cavalry used were long spears or lances, swords like those of the Saxons, and short dirks or daggers.

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Those of the foot soldiery were a spear, or a bow and arrow, or a sling, with a sword; to whom were added the arcuballarii, or shooters with the cross-bow, an instrument entirely of Norman introduction. By the famous assize of Henry II. the arms of the infantry are expressly ordered neither to be sold nor pledged, nor seized for debt, nor any way alienated, but to be transmitted by every man to his heir. Beside their lances, spears, darts, cross-bows, and slings, which may be called the small arms of the middle ages, the Normans introduced a kind of field artillery, which they used in battle, consisting of various machines of wood, which, by different contrivances and combinations of mechanic powers, threw darts and stones to a considerable distance (See ARTILLERY). To all which they added *spicula ignita*, arrows headed with combustible matter for firing towns or shipping (Henry's Hist. of Britain, iii. 470. 475.). And here we mention, *en passant*, the Greek fire, probably brought to Europe immediately after the first crusade. From this period to the reign of Edward I. our military weapons were but little altered: about this time we date the introduction, or perhaps the proper use of the English long-bow; which, as we have mentioned in a former article (see ARCHERY), rendered our ancestors, in one instance, superior to all the world.

The introduction of chemistry in the thirteenth century gave rise to many useful and curious discoveries, such as would have excited the admiration of a more enlightened age. One of these was the composition of gunpowder, whose ingredients and terrible effects were accurately, though under an humane concealment, discovered by friar Bacon. The art, however, was neither commonly known nor practised; and that of making instruments proper for applying it to the purposes of war, was still less known. See GUNPOWDER.

The exact time when gunpowder and fire-arms were first employed in war by the British nation, is difficult to be discovered. If the metrical life of Robert Bruce may be believed, Edward III. had cannon (*crakks of war*) in his first campaign against the Scots, 1327. The French undoubtedly used them in 1338, as well as Edward, at the battle of Cressy, in 1346. By degrees, the use of cannon became more and more common, so that, in a few years, the consideration that was at first produced by their explosion, was very much abated (Henry, vol. iv. p. 502.). Beside the greater guns or cannon, a smaller kind, called hand cannon, came in use, which were carried by two men, and fired from a rest fixed in the ground. Such, it is supposed, were the four hundred cannon with which the English besieged St. Malo, in 1378 (Ibid. 505.). The invention of gunpowder however, for a long time, made little alteration in the art of war. The Greek fire still continued in occasional employment; and so late even as the time of Elizabeth, the strength of our armies consisted in the archers, who having added halberds to their arms, first fixed them in the ground till they had discharged their arrows, and then rested the impression of the cavalry. The cannon of the fifteenth century were of different kinds, shapes, and sizes; some exceeding large, and others very small, distinguished from each other by different names, and all made of iron. The writ of Edw. IV. for the protection of the kingdom against the Scots, in 1481, enumerates bombardes, cannons, culverines, towellers, serpentine, and other ordnance; together with sulphur powder, saltpetre, stones, iron, lead, and all other materials necessary for charging them (*omnium alias stufuras pro eisdem cannonibus necessariis*. Rym. Fœd. xii. 140.): which reminds us here at the first invention of cannon, not only iron and lead, but quarrels, stones, and even arrows,

were thrown from them. Strutt's Manners and Customs, ii. 32.

The improvements in artillery are, at this distance, neither perceptible nor of much importance. Having stated that mortars and bombs were invented in 1544, by foreigners whom Henry the VIIIth employed (Henry, vi. 599.), we shall refer our readers to the article ARTILLERY.

Fire-arms of a portable construction were not invented till the beginning of the sixteenth century. In 1521, the musket, mounted on a stock, was used at the siege of Parma; and probably soon adopted in England (Henry, vi. 598). Its form, however, was clumsy, and its weight very inconvenient; while the bow, in the hands of an English archer, retained the credit of having, within a determinate range, a steadier aim and a greater execution. See ARCHERY.

The protector Somerset, who knew the importance of fire-arms, had above 3,000 foreigners in his pay, of whom the greater part were musketeers. Andrews' Hist. of England.

The first bayonets were daggers, which, after the soldiers had exhausted their ammunition, they fitted to the bore of their muskets. They were introduced in France about 1673; and among the English grenadiers in the short reign of James the second (Grose, Milit. Hist. ii. 339.). Many such are yet to be seen in the small armoury at the Tower. The use of them, fastened to the muzzle of the firelock, was also a French improvement, first adopted about 1690; it was accompanied, in 1693, at the battle of Marsaille in Piedmont, by a dreadful slaughter (De Limiere, Hist. Louis XIV. vol. vi. p. 88.); and its use was universally followed by the rest of Europe in the war of the succession. See BAYONET.

The pistol had its origin from Pistoye, a town of Tuscany (Moreri Dict. v. il Bayonette); and was introduced into England about the middle of the sixteenth century. Many of the shields, said to have been the spoils of the armada in 1588, have pistols in the center, with little gratings for the aim. They were sometimes introduced at the butt-end of the pike; as well as in the time of Edward VI. at the lower end of the battle-axe. Grose, i. 123.

In the reign of James I. no great alterations were made in our defensive arms; and with regard to those of the offensive kind, all the pikes, except the common pike, grew into gradual disuse; the chief weapons of the infantry were muskets, calivers, pikes, and swords; swords, carabines, and pistols of the cavalry. Under Charles I. our fire-arms seem to have been without improvements, and there was even some inclination to restore the bow. About 1625, Walter Neade presented his majesty with a book, explaining a new exercise for the soldiery, whereby the bow and pike being fastened together, might be used at the same time. The exercise was adopted for trial in the artillery garden, but was afterwards rejected (Neade's double-armed man by the new invention, Lond. 1625, 4to.). The great alteration, when matchlocks were no longer used, took place about the third or fourth year of William III. (Grose, ii. 342.); since which time their efficient use has proved indispensable.

The progress of fire-arms in France was not dissimilar to that in England. It was not till after the accession of Francis the first, 1515, that any considerable change was effected. Between that time, and the death of Henry the third, in 1589, pikes, the ancient weapon of the French infantry, gave place to the arquebuses; while in the cavalry, lances were gradually and reluctantly exchanged for the pistol (Wraxall's Hist. of France, vol. ii. p. 241.). At that period, the Spaniards were far superior to the French in the art of war. No general could emulate the fame of

the duke of Parma, who studied and conducted war as a science to which mathematical, geographical, and even historical aid was indispensable. The infantry of Philip the second and third spread terror over Europe.

In the middle ages, and even so late as the sixteenth century, the chief national weapon of the Scots was the spear, seventeen feet in length. It was undoubtedly formidable, when projected by a steady and complete battalion. But the Scottish troops were deficient in point of discipline. In pitched battles, they might have equal bravery, but seldom succeeded against the disciplined archers.

By the ancient laws of England every man was obliged to bear arms, except the judges and clergy. Under Henry VIII. it was expressly enjoined on all persons to be regularly instructed, even from their tender years, in the exercise of the arms then in use; viz. the long bow and arrows, and to be provided with a certain number of them. 33 Hen. 8.

ARMS, *Arma*, in *Law*, are extended to any thing which a man takes in his hand in his wrath, to cast at or strike another.—So Crompton—*Armorum appellatio non ulique scuta, & gladios, & galeas significat, sed & fustes & lapides*. See *Vl & armis*.

By the common law, it is an offence for persons to go or ride armed with dangerous weapons: but gentlemen may wear common armour, according to their quality, &c. 3 Inst. This is also declared by stat. 1 W. and M. II. c. 2. The king may prohibit force of arms, and punish offenders according to law; and herein every subject is bound to be aiding, stat. 7 Edw. I. None shall come with force and arms before the king's justices, nor ride armed in affray of the peace, on pain to forfeit their armour, and to suffer imprisonment, &c. 2 Ed. III. c. 3.

The importation of arms and ammunition is prohibited, by 1 Jac. II. c. 8. and by 1 W. and M. II. c. 2. Protestant subjects may have arms for their defence. So likewise, arms, &c. shipped after prohibition, are forfeited by 29 Geo. II. c. 16. sect. 2.

It is one branch of the royal prerogative vested in his majesty by statutes 12 Car. II. c. 4. and 29 Geo. II. c. 16. to prohibit the exportation of arms and ammunition out of the kingdom, under severe penalties.

Arms of offence in use among us at present are, the sword, pistol, musket, bayonet, pike, &c.

The arms of the Highlanders are, the broad-sword, target, poniard, and whinyar or dirk, &c.

There are several acts of parliament for disarming the Highlanders: see 1 Geo. I. c. 54. 11 Geo. I. c. 26. 19 Geo. II. c. 39. 21 Geo. II. c. 34. 26 Geo. II. c. 22 and 29.

ARMS of *Defence*. See ARMOR and ARMS.

ARMS, *Fire*, are those charged with powder and ball: such are cannon, mortars, and other ordnance; muskets, carbines, pistols, and even bombs, grenades, carcasses, &c. Fire-arms discharged by hand were first called hand-cannons, hand-culverines, and hand-guns; they afterwards acquired the appellations of hackbuts, arquebusses, muskets, and calivers; and, lastly, their present name of fire-locks.

In the history of the Royal Academy for the year 1707, we have an account of some experiments made with fire-arms differently loaded, by M. Cassini. Among other things, he observes, that by loading the piece with a ball which is somewhat less than the calibre, and only laying a little gunpowder below the ball, and a good deal above it, it will yield a vehement noise, but have no sensible effect or impulse on the ball. This he takes to have been all the secret of those people who pretended to sell the art of rendering one's self invulnerable, or shot-proof.

ARMS, *Bells of*, or *Bell-tents*, denote a kind of tents in

the shape of a cone, where the company's arms are lodged in the field. They are generally painted with the colour of the facing of the regiment, and the king's arms in front.

ARMS, *Past of*, was a kind of combat in use among the ancient cavaliers. See *PASS*.

ARMS, *Stand of*, signifies a musket, a bayonet, a sword, b. lt. and cartridge-box.

ARMS of *Parade*, or *Courtesy*, were those used in the ancient joust, and tournament; which were commonly unshod lances, swords without edge or point, wooden swords and even canes.

ARMS, *to*, a beat of the drum, is a signal to summon the soldiers to their alarm-posts on some sudden occasion.

ARMS denote the natural weapons, or parts of defence of beasts, as claws, teeth, tusks, of elephants, beaks of birds, &c.;—and also the defensive weapons of plants, as thorns, prickles, &c.

ARMS are also used figuratively for the profession of a soldier.—Thus we say, he was bred to arms.—See *FRATERNITY, LAW, PLACE, SUSPENSION of Arms*.

ARMS, or *Armorial Ensigns*, in *Heraldry*, are marks or badges of dignity and honour regularly composed of certain figures and colours, given or authorized by sovereigns, and borne on banners, shields, &c. &c. &c. for the distinction of persons, families, and states.

Concerning the origin and use of arms, or armorial ensigns, many authors, who have thought that comparative antiquity must necessarily decide on the merit of their favourite science, have traced it far beyond the scope of chronology, to the Egyptians, and “the land of darkness.” Diodorus Siculus is cited as an authority, asserting, that armorial distinctions were first adopted by Anubus and Macedo, sons of Osiris, under the emblems of a wolf and a dog. To the Greeks they are likewise attributed, and if the poetic delineations of the “shields” of heroes described by Homer, Æschylus, and Virgil, be not inapplicable to the devices of the middle centuries, with apparent propriety; these, however, were not analogous, being the personal furniture of the chiefs, only embellished according to the fancy of the artist, and allusive to some exploit past or predicted, but neither hereditary nor gentilitary. Some deduce the introduction of arms from the ancient mythology, and consider the hieroglyphics and emblems of Greece and Rome impressed on the reverses of their medals, as the indubitable prototypes of modern armories. It has likewise been supposed, that arms were attributed to individuals, and confirmed to them by the Romans; and it is further urged, that in their code of laws under Augustus, and in that selected by Justinian, the “*Jus imaginum*,” unequivocally referred to those rights, this distinction of families, or the right of having the images and statues of their ancestors, an honour which was allowed to those Romans only whose ancestors had borne some office in the state, as censor, prætor, consul, &c. He who had the privilege of using the images or statues of his ancestors, was termed “*nobilis*;” he to whom it was permitted to have his own statue or image only, was called “*novus*;” and the person who was not allowed to have the image or statue either of his ancestors or of himself, passed under the appellation of “*ignobilis*,” as do the common people amongst us who have no right to armorial ensigns. These images or statues were made either of wood, brass, marble, or wax, painted the better to represent the persons intended, and were dressed out according to the quality of the persons they represented, being adorned with the robes of the offices they had borne, and the marks of their magistracy. These images were usually placed by the Romans in cabinet,

which

which stood in the court before the entrance into their houses; and on solemn days were usually exposed to view, not only that the people might be reminded of the nobility and honours of the family to whom they belonged, but in order to excite the posterity of the possessors to imitate the virtues of their ancestors. When any of the family died, the statues and images were not only thus exposed, but in the funerals were placed on beds, and carried before the corpse, as ensigns of the nobility of the defunct. Thus, at the funeral of Marcellus, Augustus ordered six hundred beds of images to be carried before the corpse; and no less than six thousand are reported to have attended that of Sylla the dictator. The right of keeping and exhibiting the images and statues being hereditary, and allowed proofs and evidences of nobility and ancient descent, they partook so much of the nature of coat-armour, as in some measure to countenance a probability that the latter were contrived and introduced in lieu of the former. The *jus nobilitatis* of the moderns, say the advocates for this suggestion, is nothing else but the *jus imaginis* amongst the Romans; for as they placed the images and statues before the porches and gates of their houses, so our nobility and gentry used to have their banners, helmets, and other armour placed in some conspicuous parts of their castles or mansions, and their armorial ensigns, either cut in stone, or painted on escutcheons, over their gates, not only as monuments of their nobility and ancient descent, but with intent thereby to encourage the beholders to imitate the virtues and bravery of their ancestors. The analogy between this and the subsequent use of armorial ensigns, extends only to the single circumstance of hereditary appropriation. Acquired as they were by actual services to the state, so they were preserved to the descendants of illustrious characters by the sanction of the laws, and thus became a certain species of right and property, which at once endeared them to the possessors, and rendered them objects of honourable ambition. Besides, the pride of the Romans was remarkable, and on every occasion carried to the highest pitch; insomuch that, in case any particular hereditary tokens or marks designed for distinguishing one family from another, and established by public authority, had been used by them, they never would have suffered such pleasing testimonies of family honour and aggrandisement to have sunk into oblivion; but, on the contrary, would have endeavoured to perpetuate the memory of them, by representing some of those honourable badges in the paintings and sculpture of their villas, sepulchral monuments, triumphant arches, columns, temples, or other edifices: whereas no such have ever been hitherto discovered: consequently the difference between the *jus imaginum* of the Romans, and the bearing of coat-armour of later times, is wide and essential. Armorial ensigns are military, but the *jus imaginum* appears to have been a civil institution, established to do honour to such particular families only. Much honour must be attributed to those ensigns which were first adopted by the stipendiary bands of German soldiers; for their chiefs having the power of investing them, considered them not solely with respect to gentilitial distinction, but as personal appendages; and this in the very early centuries. When the Saxons, after their invasion of this kingdom, ratified the partitions of the whole territory, and established the heptarchy, to each principality its peculiar badge was assigned, and borne upon the banners; and it appears, that whenever any of the provincial kings became monarchs of the island, they retained the gentilitial bearing, as personal, not adopting any new device. This, however, applies only to a period prior to 959, when Edgar, surnamed the Peaceable, added to

the "Cross Florettè" four martlets; in 1042, five were used by Edward the Confessor, which remains the general armorial bearing of the Saxon nation.

Whether armorial ensigns were used by the Merovingian kings, whose race became extinct in the person of Childeric the Third in 754, or not till the close of the ninth and commencement of the tenth centuries, who shall determine? The fairest conjecture seems to be, that the tournaments held with such magnificence towards the end of the tenth century, under the auspices of Hugh Capet, were introductory of the more general usage and assumption of arms. No satisfactory account is preserved whether, after the personal use of arms, they were first painted or embroidered on rich stuffs in the form of pennons, or enamelled on shields. The more probable conjecture inclines to the former mode. The victorious William, who had been educated in the courts of Robert and Philip the First, successors of Hugh Capet, had imbibed an early taste for the martial exercises of which France was then the most magnificent and frequented theatre. After his successful enterprise, and establishment on the throne of England, together with his desire of signaling his followers, he encouraged, but under great restrictions, the individual bearing of arms. About the year 1189, it was usual to bear a small shield fastened to a belt, upon which arms were painted; and there is proof of this custom obtaining in England prior to Richard the First, upon whose great seal the shield is charged with three lions passant, or, as some term them, leopards.

The more general use of arms, and that which affords the best information concerning them, was the custom of engraving them on seals for the purpose of ratifying deeds and charters. This mode is said to be introduced by Edward the Confessor from Normandy, where he was educated, and to have been confirmed by him to the royal use. In the year 1095, being the commencement of the croisades, a period the most interesting in the history of heraldry now opens, when all Christendom united in one common and infatuated cause; when even rival princes engaged in the same enterprise, not merely because sanctioned by the church, but rather as being highly delightful to the romantic and warlike genius of that age. The great council of Clermont had determined in that year to recover the holy city from the Saracens, by enlisting the church under the consecrated banner from which they were to derive supernatural assistance. In the following year this immense army began their expedition; and, as a flattering badge, every private soldier wore a cross of red fluff sewed to his surcoat, from which circumstance these achievements were called "croisades." The hereditary use of arms, says Camden, was not established till the reign of Henry III. The last earls of Chester; the Quineys, earls of Winchester; and the Lacies, earls of Lincoln; varied still the father from the son. The Veres and Berkleys altered their paternal coats, "when they had taken up the cross," the phrase of that day for engaging in the holy wars.

The application of arms to the coin of this realm is of great antiquity; the *scutagium* being paid with shewes, a silver coin upon which a shield was impressed (see COIN). The first instances of sculpture of arms upon the effigies placed on sepulchral monuments remain in the Temple Church, London, of the date 1144. The nobility and principal gentry not only continued their armorial ensigns on their shields, but in order to be better known and distinguished, had them depicted on the breasts and backs of the tunics and surcoats which they wore over their armour, as also on the caparisons of their horses. This fashion of surcoats spread over their coats of mail, and hanging down

to their heels, appears by the figure of G. Mfridus, earl of Richmond, who died in 1186, and is so represented in that dress on his seal; the figure also of William de Valence, earl of Pembroke, in Westminster abbey, who died in 1206, has the surcoat charged with armorial ensigns. The custom of embroidering arms upon canopies of state prevailed from the fourteenth century; they were likewise introduced into castles and private houses, as well as churches, painted in compartments upon the wainscot, or stained in glass, and inserted in the windows of the cloister rooms, and painted in the choicest style on vellum rolls. Armorial bearings upon plate were in use as early as the beginning of the thirteenth century, as appears by an inventory of the crown jewels taken in 1334. In the reign of Richard II. the armorial device was no longer confined to the gorgeous array of warriors completely armed, but embossed and embroidered on the common habits of those who attended the sumptuous court. Upon the mantle, the surcoat, and the just-au-corps or bodice, the charge and cognizance of the wearer were profusely scattered, and shone resplendent in tulle and beaten gold. The wardrobe of a nobleman became no small part of his wealth, the articles of which were subjects of testamentary bequest. Even the ladies were as well versed in mantling their hereditary achievements, as in the service of oratory: the sumptuous veils and mantles, which they were employed in embroidering, were made in the form of escutcheons joined together, and were of velvet, satin, and taffete, according to the rank of the person, and were worn as the court dress till the commencement of the sixteenth century; since which they have been used only as the state dress of the officers of arms; from this custom we have the modern phrase "coat arms, or coats of arms."

The escutcheon was now no longer singly charged with the hereditary bearing, but admitted those of the wife by dimidiation or impalement, and of heirs general by quartering. The first that bore arms quarterly in England appears to be John Hastings, second earl of Pembroke, in 1348. Crests and cognizances were multiplied, and a mode of decorating the armories introduced, that of placing the shield of arms between two animals as supporters. Arms were first borne on a shield by king Richard I., on the caparisons for horses by Edward I., and the custom of embroidering them on the just-au-corps, or bodice, by Richard II.

Originally, none but the nobility had a right of bearing arms; but king Charles V. by his charter in 1371, permitted the Parisians "to bear arms;" from whose example the more eminent citizens of other places did the like. The use of arms became more closely connected with the study of genealogy; and when the mode of including in the same escutcheon the armorial bearing of every heir female, with whom an intermarriage had been made, was universally followed, they were the more necessary to each other. By the fully quartered escutcheon, a compendious scheme of connection presented at one view, and a general idea communicated of the comparative claims of each family in the scale of hereditary dignity. To determine the right of introducing the arms of others into the escutcheon, and to distribute them when altered in their proper gradation, opened a new field of professional ability, which required the most diligent application to the laws and confirmed practice of arms. No systematic or elementary treatise, by which the science could have been taught, was made public till the avenues to universal information were laid open by the typographic art. It was confined to the heralds, or painter-stainers whom they employed, who considered it as the mystery of their trade, and therefore

not to be divulged. Henry V. seems to have held a just opinion of the necessity of ascertaining those who were legally appointed to armorial distinctions, and of prohibiting an undue assumption of them: in 1417, the 7th of his reign, he issued an edict directed to the sheriff of each county, to summon all persons bearing arms to prove and establish their right to them. Many claims, examined in consequence of this inquiry, were referred to heralds, as commissioners; but the first regular chapter held by them in a collegiate capacity was at the siege of Rouen, on the 5th Jun. 1420. King Richard III. by his letters patent, dated 2d March 1483, the first of his reign, directs the incorporation of heralds, and established the "College of Arms" on its present foundation, investing them with full powers of summoning those that assumed the arms of others to appear in the earl-marshal's court, and of granting escutcheons to new families. This privilege multiplied the figures of course, and varied the differences. Forms of every description in the infancy of the graphic art, without any exact resemblance, it we may judge from the specimens now remaining, were universally introduced. The creation was exhausted in the representation of the different parts of it, and to Gothic fancy alone we owe the introduction of gryphons, mermaids, wyverns, and harpies. Every invention of art, whether military or mechanic, has been at one time or other a badge of heralbic honour. Arms at present follow the nature of titles, which being the federal marks for distinguishing or families and kindred, as names are of persons and individuals; they also shew who were the founders of towns, castles, churches, ancient abbies, and colleges, by having their arms affixed to them; and it is well known, during a war, that a ship taken carrying the armorial ensigns of an enemy, is declared a prize, though belonging to a power at amity. Arms are also variously distinguished by the heralds under the following heads.

Arms of Dominion, are those which belong to sovereign princes and commonwealths in right of their sovereignty. In regard to such ensigns, it may be observed, that if the person ascending the throne by legal succession be a sovereign, he marshals his arms with those of the dominion to which he succeeds. If he who ascends the throne by legal succession, be of the quality of a subject, he then lays aside his own arms, and uses only those of the dominion to which he succeeds. Those who ascend a throne by election, carry their arms on an escutcheon placed on the center of the arms of the dominion to which they are elected. William, prince of Orange, placed those of Nassau over those of England and Scotland, as an elective king.

Arms of Patronage, are part of the arms of those lords of whom the persons bearing them held in fee, either added to the paternal arms of the person assuming such addition, or borne as feudal arms in order to shew the dependence of the parties bearing them: thus, as the earls of Chester bore *garbs*, many gentlemen of the county bore *garbs* also. The late earls of Warwick bore *chequy* or *blue*, or *chevron ermine*, and therefore many gentlemen of Warwickshire bore *chequy*.

Arms, Feudal, are those annexed to dignified fees, as dukedoms, marquisates, earldoms, &c. and which arms the possessors of those fees carry in order to shew their dignities, in imitation of sovereigns displaying the ensigns of their dominions. In England there have been but few instances of feudal bearings, but there are many in Spain and in Scotland.

Arms of Pretension, are those borne by sovereigns who are not in possession of the dominions to which such arms belong,

long, but who claim or pretend to have a right to those territories; thus the kings of Spain quarter the arms of Portugal and Jerusalem; and England those of France, till lately.

Arms of Concession, are augmentations granted by the sovereign or part of his arms; thus the royal augmentation in the arms of the duke of Rutland, were granted by Henry the Eighth.

Arms of Community, are those of bishopricks, cities, universities, and other bodies corporate. (See *IMPALEMENT*.)

Arms, Coulez, or as the French call them "armes parlantes," or punning arms, alluding to names, a *trivet* for Trevet, *three herrings* for Herring, &c. These, though some ancient precedents exist, were not common till the commencement of the seventeenth century, when they prevailed under the auspices of king James I.

Arms Paternal and Hereditary, are such as belong to a particular family, and which no other has a right to assume.

Arms of Succession, are those taken by inheriting certain fiefs or manors, either by will, entail, or duration; as we find that Hubertus de Burgo, earl of Kent, who bore for his arms "gules seven lozenges vairé," granted the manor of Elmore in the county of Gloucester, in 1274, to Anselmus de Guise, at the yearly rent of a clove-gilliflower in acknowledgment of the gift, with the concession of his coat-armour: whereupon the said Anselmus de Guise bore the coat with a canton, or charged with a mullet pierced fable; and which arms have been continued by the family, and are now borne by the baronet of that name.

Arms of Alliance, are such as when an heir's marries, her issue quarter her arms to shew their maternal descent. By this means the memory of many ancient and noble families, extinct in the male line, is preserved and conveyed to posterity; which is the principal reason of marshalling several coats in one shield.

Arms of Adoption, are those which you take from another family quarterly with your own. The last of a family may by will adopt a stranger to take his surname, arms, and estate, thereby to continue to the world his name and family after his decease; permission for which is obtained by petition to his majesty for his royal licence and authority to comply with the request of the testator, and the sign manual is then recorded in the college of arms.

A test of the antiquity of a coat of arms is in general its simplicity; a single ordinary, or two at most, constituting the most noble.

Arms, in Falconry, denote the legs of a hawk, from the thigh to the foot. See *HAWKING*.

Arms, King of. See *KING OF ARMS*.

Arms, Herald at. See *HERALD*.

Arms, Pursuivant at. See *POURSUIVANT*.

ARMSON, in *Geography*, a town of Germany, in the circle of Westphalia, and county of Verden, seven miles east-south-east of Verden.

ARMSTRONG, JOHN, in *Biography*, was born in the year 1709, at Cattleton in Roxburghshire, where his father was minister, under whom he received the rudiments of his education. Being intended for the practice of medicine, he was sent to Edinburgh, and in 1732, took the degree of Doctor, and published for his thesis on that occasion, a dissertation "De tabe purulenta." He soon after came to London, where his wit procured him the notice of some of the most eminent men of the time; particularly he became acquainted with John Wilkes, who was then rising to celebrity. In 1735, he published "An Essay for abridging the

Study of Physic, with a Dialogue," written with much humour, "between Hygieia, Mercury, and Pluto, relating to the practice of physic, as it is managed by a certain illustrious society;" which gained him credit as a wit, but was probably one of the causes of his being but little noticed as a physician. To repair the injury this might have done him, in 1737, he published "A Synopsis of the history and cure of the Venereal Disease." This was however soon followed by the "Economy of Love," a piece ingenious, and licentious, and calculated entirely to efface any favourable impressions of his talents for the medical profession which his former work might have excited. Its luxuriances were considerably pruned by the author in an edition printed in 1738. But the work for which he is indebted for his fame as a poet, is his beautiful "Essay on the Art of preserving Health," which appeared in 1744. It is written in black verse, and is deservedly esteemed one of the finest specimens of didactic poetry in our language. Indeed he seems to have exhausted his stock of genius in the composition of this chef d'œuvre: his poems on "Benevolence," in 1751; "Taste," in 1753; and "Day," an epistle to John Wilkes, esq. the last of his effusions in this line, scarcely rising above mediocrity. His epistle to Mr. Wilkes was written in Germany, in the year 1761, while he was physician to the British army there; a post for which he was indebted to some of the friends his wit had procured him. In this poem he unfortunately hazarded a reflection on Churchill, which drew from that irritable bard a severe retort in his "Journey." Before this time, viz. in the year 1758, he had published a volume in prose, of "Sketches and Essays," under the name of Launcelot Temple, esq. which was well received. His friend Wilkes contributed some of the essays in this collection. In the year 1763, he returned to London, and found his practice in medicine somewhat increased, through the connections he had formed in the army: but that his calls that way were not very numerous, appears by his being able, in the year 1771, to make a tour through France and Italy, in company with the celebrated artist M. Fuseli. In his journey he met his friend Dr. Smollet, to whom he was much attached. On his return, he published an account of his ramble, under the name he had before assumed of Launcelot Temple, esquire. His last work, a 4to. pamphlet, intitled, "Medical Essays," appeared in 1773. In this he complains of the little attention that had been paid to him, while so many other physicians of inferior abilities had risen to fame and fortune, forgetting that the levity of his own conduct, and not the sickleness or want of discernment of the public, occasioned the neglect. A large portion of his time was spent at Slaughter's coffee-house in St. Martin's lane, where he usually took his meals, and where messages to him were ordinarily directed to be addressed. He died September 1779; and left about 3000 l., a larger sum than his friends supposed he could have amassed out of his very moderate income.

The reputation of Armstrong, as a poet, is almost solely founded on his "Art of preserving Health." Of his style and manner we have the following character by a very competent judge, in an essay prefixed to an ornamented edition of the poem, printed in 1795. "It is distinguished by its simplicity, by a free use of words which owe their strength to their plainness, by the rejection of ambitious ornaments, and a neat approach to common phraseology. His sentences are short and easy; his sense clear and obvious. The full extent of his conceptions is taken in at the first glance; and there are no lofty mysteries to be unravelled by a repeated perusal. What keeps his language from being profane, is the vigour of his sentiments. He thinks boldly,

feels strongly, and therefore expresses himself poetically. Where the subject sinks, his style sinks with it; but he has for the most part excluded topics incapable either of vivid description, or of the oratory of sentiment. He had from nature a musical ear, whence his lines are scarcely ever harsh, though apparently without much study to render them smooth. On the whole, it may not be too much to assert, that no writer in blank verse can be found more free from stiffness and affectation, more energetic without harshness, and more dignified without formality."

He left his fortune by his will to his three nieces, daughters of his brother Dr. George Armstrong; who, after having practised pharmacy successfully several years at Hampstead, at length obtained a diploma constituting him Doctor in Medicine, and came to London, and was made physician to a dispensary for the benefit of infant poor, opened at a house taken for him by the subscribers in Soho square. To aid the design, he published a small treatise on the diseases of children, in which he was supposed to have been assisted by his brother John. The work was well received, and contained some observations on the subject that were new and ingenious. The dispensary, however, did not succeed; and the Doctor died some years after in obscurity.

ARMUA, in *Ancient Geography*, the modern *Sci-bouze*, a river of Africa mentioned by Pliny, emptied itself into the Mediterranean between Aphrodisium and Hippo Regius, south-east of the former, and north-west of the latter.

ARMUS, in *Entomology*, a species of CURCULIO, found in France. It is black; the scutell whitish; wing-cases with denticulated striæ on each side.

ARMUYDEN, or ARNEMUDEN, in *Geography*, a strong sea-port town of Zealand, in the Low Countries, situate on the eastern side of the isle of Walcheren. It was anciently a large place, and divided into the Old and New Town. The convenience of the port, the depth of water, and its nearness to the sea, drew to it much commerce, especially in salt. But it has often been damaged by the sea, and the harbour is now choaked up with sand, so that the sea is made navigable by means of a canal to Middleburg, from which Armuyden is distant about a league to the east. N. lat. 51° 31'. E. long. 3° 42'.

ARMUZA, ARMOZUM, or ARMUZIA, in *Ancient Geography*, a city of Asia, in Carmania, near the promontory Armozum, to which it gave name, as well as to the island of Ormuz. Pliny, and Ptolemy.

ARMY, a large body of soldiers, consisting of horse and foot, under the command of a general, with several ranks of subordinate officers under him.

An army consists of brigades, regiments, battalions, and squadrons, and is usually divided into three corps; which are ranged in three lines. The first line is called the front-line, and part of it forms the van-guard; the second, the main body; and the third, the rear-guard, or body of reserve.—The middle of each line is generally possessed by the foot; the cavalry forms the wings on the right and left of each line; and sometimes they also place squadrons of horse in the intervals between the battalions.

The British army, when it takes the field, is divided into brigades, and these brigades into battalions, squadrons, companies, and troops, both in the infantry and cavalry respectively. The French have lately made a different distribution. Their infantry is divided into half-brigades, each half-brigade consisting of three battalions, and each battalion of nine companies. A company of artillery is attached to each half-brigade, for the management of its field-pieces. The half-brigade are either of the line, or light infantry;

each battalion of those in the line has its company of grenadiers, and each battalion of light infantry one of carabineers. For the arrangement of the army in order of battle, see *Order of BATTLE*.

The number of soldiers is necessarily much smaller, and bears a less proportion to the whole number of the people, in a civilized than in a rude state of society. Among the civilized nations of modern Europe, it has been stated, as the result of long experience, that a prince with a million of subjects cannot keep an army of above ten thousand men, without ruining himself. It was otherwise in the ancient republics: the proportion of soldiers to the rest of the people, which is now about one to a hundred, might then be as about one to eight; and in some of the little Agerian states of ancient Greece, a fourth or fifth part of the whole body of the people considered themselves as soldiery, and would sometimes take the field. The reason seems owing to that equal partition of lands, which the ancient founders of commonwealths made among their subjects; so that every man had a considerable property to defend, and had means to defend it with. Whereas among us, the lands and riches of a nation being shared among a few, the rest have no way of subsisting, but by trades, arts, and the like; and have neither any free property to defend, nor means to enable them to go to war in defence of it, without starving their families. A large part of our people are either artificers or servants, and so only minister to the luxury and effeminacy of the great. While the equality of lands subsisted, Rome, though only a little state, being refused the succours which the Latins were obliged to furnish after the taking of the city in the consulate of Camillus, presently raised ten legions within their own walls: which was more, Livy assures us, than they were able to do in his time, though masters of the greatest part of the world. A full proof, adds the historian, that we are not grown stronger; and that what swells our city is only luxury, and the means and effects of it. Vide Liv. dec. 1. lib. vii.; and Confid. sur des Causes de la Grand. des Rom. chap. iii. p. 24.

In the republics of ancient Greece and Rome, during the whole period of their existence, and under the feudal governments for a considerable time after their first establishment, the profession of a soldier was not so separate and distinct, as to constitute the sole or even the principal occupation of a particular class of citizens. In process of time, however, that industry which produces, and that wealth which follows, the improvements of agriculture and manufactures, provoked the invasion of neighbours, and rendered it necessary for a state, likely and liable to be attacked, to adopt some regular measures for the public defence, more especially as the people, by their natural habits, were incapable of defending themselves. In these circumstances, there seem to be but two methods to which the state can have recourse for its own security: one of these is the introduction of a military force under the denomination of a MILITIA; and the other, the establishment of a *standing army*. The soldiers of this latter description are solely or principally occupied in the practice of military exercises; and the maintenance or pay which the state affords them is the principal and ordinary fund of their subsistence. In a standing army, the character of a soldier predominates over every other; and the mode of their discipline, as well as the constancy of their exercise, renders the soldiers of this class superior to a militia, in whatever manner it may be either disciplined or exercised. This superiority of a well-regulated standing army is attested by the history of all ages. One of the first standing armies of which we have any distinct account, in any well-authenticated history, is that of Philip

of Macedon. His frequent wars with the Thracians, Illyrians, Thessalians, and some of the Greek cities in the neighbourhood of Macedon, gradually formed his troops, which were probably at first militia, to the exact discipline of a standing army, which, as he was seldom, or never for any long time, at peace, he was careful not to disband. With this army he vanquished, after repeated and violent conflicts, the gallant and well-exercised militias of the principal republics of ancient Greece; and afterwards, with very little struggle, the effeminate and ill-exercised militia of the great Persian empire. The fall of the Greek republics, and of the Persian empire, was the first great revolution in the affairs of mankind, which history has circumstantially recorded; and it was the effect of the irresistible superiority which a standing army has over every sort of militia. The fall of Carthage, succeeded by the elevation of Rome, is the second, which may be ascribed to the same cause. From the end of the first to the beginning of the second Carthaginian war, the armies of Carthage were continually in the field, and employed under three great generals, who succeeded one another in the command. These were Hamilcar, his son-in-law Asdrubal, and his son Hannibal. The army led by Hannibal from Spain into Italy, must necessarily have been gradually formed to the exact discipline of a standing army. The Roman armies on the other hand, which Hannibal encountered at Trebia, Thrymenus, and Cannæ, were militia opposed to a standing army; and this circumstance, perhaps, contributed more than any other to determine the fate of those battles. The standing army which Hannibal left behind him in Spain, had the like superiority over the militia which the Romans sent to oppose it, and in a few years, under the command of his brother Asdrubal, expelled them almost entirely from that country. The Roman militia, being continually in the field, became in the progress of the war a well-disciplined and well-exercised standing army; and the superiority of Hannibal was gradually diminished. Asdrubal judged it necessary to lead almost the whole of the standing army which he commanded in Spain, to the assistance of his brother in Italy, but being surprised and attacked by another standing army, in every respect equal or superior to his own, he was entirely defeated. When Asdrubal had left Spain, the great Scipio was opposed merely by a militia, inferior to his own; and having conquered and subdued that militia, his own militia necessarily became, in the course of the war, a well-disciplined and well-exercised standing army. That standing army was afterwards transported to Africa, where it was opposed only by a militia; and in order to defend Carthage, it became necessary to recal the standing army of Hannibal. The disheartened and frequently defeated African militia joined it; and at the battle of Zama, composed the greater part of the troops of Hannibal. The event of that day determined the fate of the two rival republics. From the end of the second Carthaginian war, till the fall of the Roman republic, the armies of Rome were in every respect standing armies: and to these the militias of all the civilized nations of the ancient world, of Greece, of Syria, and of Egypt, made but a feeble resistance. The militias of the barbarous nations defended themselves much better. The Scythian or Tartar militia, and also the Parthian and German militias, were formidable enemies to the Roman armies, and gained considerable advantages over them. In general, however, and when the Roman armies were well commanded, they appear to have been very much superior. Many different causes contributed to relax the discipline of the Roman armies. One of these causes was its extreme severity. Besides, under the Roman emperors, the standing armies of Rome, those especially which guarded the German and Pannonian frontiers, became dangerous to their

masters, by setting up their own generals against them. To remedy this evil, and to render them less formidable, Dioclesian, as some say, or, according to others, Constantine, first withdrew them from the frontier, and dispersed them in small bodies through the different provincial towns, where some of them became tradesmen, artificers, and manufacturers: and thus the civil acquired a predominance over the military character, and the standing armies of Rome gradually degenerated into a corrupt, neglected, and undisciplined militia, incapable of resisting the attack of the German and Scythian militias, which soon afterwards invaded the Western empire. The fall of this empire, which is the third great revolution in the affairs of mankind, distinctly recorded in ancient history, was brought about by the irresistible superiority which the militia of a barbarous has over that of a civilized nation. But the victories which have been gained by militias have generally been, not over standing armies, but over other militias, in exercise and discipline inferior to themselves. Such were the victories which the Greek militia gained over that of the Persian empire; and such were also those which in later times the Swiss militia gained over that of the Austrians and Burgundians. As arts and industry advanced, the authority of the chieftains gradually decayed, and the great body of the people had less time to spare for military exercises. Hence, the discipline and the exercise of the feudal militia gradually declined and sunk to ruin, and standing armies were at length introduced in order to supply its place. When once the expedient of a standing army was adopted by one civilized nation, it became necessary that all its neighbours should follow the example. They found that their safety depended upon their doing so, and that their own militia was altogether incapable of resisting the attack of such an army. The soldiers of a standing army, though they may have never seen an enemy, have nevertheless frequently appeared to possess all the courage of veteran troops, and the very moment in which they have taken the field have been fit to face the hardest and most experienced veterans. A well-regulated standing army, as it is superior to every militia, and as it can best be maintained by an opulent and civilized nation, can alone defend such a nation against the invasion of a poor and barbarous neighbour. Moreover, as a civilized country can only be defended by means of a well-regulated standing army, it is only by means of such an army that a barbarous country can be suddenly and tolerably civilized.

The first standing army that appeared in Europe, after the fall of the Roman legions, was that established in France by Charles VII. A. D. 1445. Such an establishment, however, was so repugnant to the genius of feudal policy, and so incompatible with the privileges and pretensions of the nobility, that during several centuries no monarch was either so bold, or so powerful, as to venture on any step towards introducing it. Charles VII. under pretence of keeping always on foot a force sufficient to defend the kingdom against any sudden invasion of the English, when he disbanded his other troops, retained under arms a body of 9,000 cavalry, and of 16,000 infantry. He also appropriated funds for the regular payment of these; he stationed them in different places of the kingdom, according to his own pleasure; and appointed the officers who commanded and disciplined them. By this measure he occasioned an important revolution in the affairs and policy of Europe. By depriving the nobles of that direction of the military force of the state, which had raised them to such high authority and importance, a deep wound was given to the feudal aristocracy, in that part where its power seemed to be most complete. The institution of standing armies hath since become general; and this can only be attributed to the superiority and success which are

every where observed to attend it. The truth is, the closeness, regularity, and quickness of their movements; the unreserved, instantaneous, and almost mechanical obedience to orders; the sense of personal honour, and the familiarity with danger, which belong to a disciplined, veteran, and embodied soldiery, give such firmness and intrepidity to their approach, as well as such weight and execution to their attack, as are not to be withstood by loose ranks of occasional and newly-levied troops, who are liable by their inexperience to disorder and confusion, and in whom fear is constantly augmented by novelty and surprise. From the acknowledged superiority of standing armies, it follows, not only that it is unsafe for a nation to disband its regular troops, whilst neighbouring kingdoms retain theirs, but also that regular troops provide for the public service at the least possible expence. A standing army adds more than any other force that can be provided to the common strength, and takes less from that which composes the wealth of a nation, or its stock of productive industry. Besides, when the state relies for its defence upon a militia, formed from the mass of the people, such as husbandmen, and artificers, and manufacturers, it is necessary that arms be put into the hands of the people at large. Such a militia, inferior indeed in discipline and force to a standing army, must be supplied by rotation, allotment, or some mode of succession, which replaces fresh draughts from the country; and of course a much greater number will be instructed in the use of arms, and will have been occasionally embodied together, than are actually employed, or than are supposed to be wanted at the same time. The effect of this diffusion of the military character upon the civil condition of the country, becomes a subject of inquiry, peculiarly delicate and important. "To me," says the ingenious archdeacon Paley, "it appears doubtful, whether any government can be long secure, where the people are acquainted with the use of arms, and accustomed to resort to them. Every faction will find itself at the head of an army. Every disgust will excite commotion; and every commotion become a civil war. Nothing perhaps can govern a nation of armed citizens, but that which governs an army—despotism." "I do not mean," continues this writer, "that a regular government would become despotic by training up its subjects to the knowledge and exercise of arms, but that it would ere long be forced to give way to despotism in some other shape; and that the country would be liable to what is even worse than a settled and constitutional despotism, to perpetual rebellions, and to perpetual revolutions; to short and violent usurpations; to the successive tyranny of governors, rendered cruel and jealous by the danger and instability of their situation."

The strength and efficacy of a standing army depend, in mixed governments, on its being submitted to the management and direction of the prince. A popular council, however well qualified for the purposes of legislation, is altogether unfit for the conduct of war; in which success usually depends upon vigour and enterprise, upon secrecy, dispatch, and unanimity, upon a quick perception of opportunities, and the power of seizing every opportunity immediately. The obedience of an army should also be as prompt and active as possible; and it ought, therefore, to be an obedience of will and emulation. Upon this consideration is founded the expediency of leaving to the prince not only the government and destination of the army, but the appointment and promotion of its officers; because a design is then alone likely to be executed with zeal and fidelity, when the person who issues the order, chooses the instruments, and rewards the service. There is, however, a danger to the liberty of a state, that is inseparable from standing armies, which ought not to be concealed nor dissembled, and which has been

thought by some to counterbalance its acknowledged advantages. These properties of their constitution, the soldiery being separated in a great degree from the rest of the community, their being closely linked among themselves by habits of society and subordination, and the dependency of the whole chain upon the will and favour of the prince, however essential they may be to the purposes for which armies are kept up, give them an aspect in no wise favourable to public liberty. The standing army of Cæsar destroyed the Roman republic. The standing army of Cromwell turned the long parliament out of doors. This danger, however, is diminished by maintaining, upon all occasions, as much alliance of interest, and as much intercourse of sentiment, between the military part of the nation and the other orders of the people, as are consistent with the union and discipline of an army. For which purpose, the officers of the army should be selected from the principal families of the country, and be encouraged to establish in it families of their own, as well as be admitted to seats in the senate, to hereditary distinctions, and to all the civil honours and privileges that are compatible with this profession; that by such circumstances of connection and situation they may have a share in the general rights of the people, and their inclination may be engaged on the side of public liberty, so as thus to afford a reasonable security that they cannot be brought, by any promises of personal aggrandisement, to assist in the execution of measures which might enslave their posterity, their kindred, and their country. To prevent the executive power from being able to oppress, says baron Montesquieu, it is requisite that the armies with which it is entrusted should consist of the people, and have the same spirit with the people; as was the case at Rome, till Marius new-modelled the legions, by insisting the rabble of Italy, and laid the foundation of all the military tyranny that ensued. Nothing then, according to these principles, says judge Blackstone, ought to be more guarded against in a free state, than making the military power, when such a one is necessary to be kept on foot, a body too distinct from the people. Like ours, it should be wholly composed of natural subjects; it ought only to be enlisted for a short and limited time; the soldiers also should live intermixed with the people; no separate camp, no barracks, no inland fortresses should be allowed. And perhaps it might be still better, if, by dismissing a stated number, and insisting others at every renewal of their term, a circulation could be kept up between the army and the people, and the citizen and the soldier be more intimately connected together.

Since the general introduction and prevalence of standing armies in Europe, it has also for many years past been annually judged necessary by our legislature, for the safety of the kingdom, the defence of the possessions of the crown of Great Britain, and the preservation of the balance of power in Europe, to maintain even in the time of peace a standing body of troops, under the command of the crown; who are however *ipso facto* disbanded at the expiration of every year, unless continued by parliament. SEE MUTINY BILL.

It is probable, says Andrews (Hist. of Great Britain, vol. i.), that the first standing military force in Britain was that garrison in Dover Castle, which, by resisting the arms of the Dauphin of France, invited by the barons to their succour in their contest with king John, saved the kingdom of England from a foreign dynasty. For, as Camden quotes from an ancient historian, "Sir Hubert de Burgo, when made constable of the castle, considering that it was not for the safety of the fortress to have new guards every month, procured, by the assent of the king, and of all that held of the castle, that every tenant for one month's guard should find his ten shillings, out of which certain persons

persons elected and sworn, both of horse and foot, should receive pay for guarding the castle."

If we advert to the ancient history of this country, we shall find, that by the Saxon laws, every freeman of an age capable of bearing arms, and not incapacitated by any bodily infirmity, was obliged, in case of a foreign invasion, internal insurrection, or other emergency, to join the army: that being one of the three services comprehended under the title of the *trinoda necessitas*: and all such as were qualified to bear arms in one family, were led to the field by the head of that family. Every landholder was obliged to keep armour and weapons, according to his rank and possessions, which he was prohibited from selling, lending, or pledging, or even alienating from his heirs. For their instruction in the use of arms, they had stated times for performing military exercise, and once in the year there was a general review of arms throughout each county. The greater part of the Anglo-Saxon forces consisted of infantry; which seems to have been of two sorts, the heavy and light-armed; and the cavalry was chiefly composed of the thanes, such men of property as kept horses. The Anglo-Saxon mode of drawing up their armies for battle, was in one large dense body surrounding their standard, and placing their foot, with their heavy battle-axes, in the front. The military establishment of the nation underwent a considerable change, when the feudal system was introduced about the year 1086. By this system, all the lands of the realm were considered as divided into certain portions, each producing an annual revenue, denominated a KNIGHT'S *Fee*: and every tenant *in capite*, or person who held from the king land amounting to a knight's fee, was bound to hold himself in readiness, with horse and arms, to serve the king in his wars, either at home or abroad, at his own expence, for a stated time, generally forty days in a year. When this service was accomplished, they were at liberty to return home; but if they remained with the army, they were paid by the king. Persons of this description, unable to serve, were by proclamation directed to find unexceptionable substitutes. Soon after the conquest, the constitutional military force of England consisted of such feudal troops, and of the *Posse Comitatus*, including every freeman above the age of fifteen and under the age of sixty, who were only liable to be called out in case of internal commotions or actual invasions. That this body of men might be ready to take the field, a law, called the assise of arms, was enacted by Henry II., A. D. 1181, in the 27th year of his reign; which law was further corroborated and enforced by the 13th of Edw. I., called the statute of Winchester, 33 Hen. VIII., c. 5. 2 & 3 Edw. VI. In the reigns of Richard II., Hen. VII., and Henry VIII., four military bodies, still existing, were instituted, viz. the SERJEANTS *at Arms*, the GENTLEMEN *Penfioners*, the YEOMEN *of the Guard*, and the ARTILLERY *Company*.

During the troubles under Charles I. the royal army consisted chiefly of regiments raised by the nobility and gentry who adhered to the royal cause, from among their tenants and dependants. After the restoration of Charles II. when feudal tenures were abolished by act of parliament, a national militia was established; which was declared, by an act of parliament, to be under the immediate orders of the king. See MILITIA. Besides these constitutional forces, there were in the English armies and garrisons, at all times from the conquest downward, stipendiary troops, both national and foreigners; the first hired by our kings, with the money paid by persons commuting for their feudal services, and employed in castle guards, foreign garrisons, and protecting the marshes or borders of the kingdom, adjoining to Wales and Scotland; and the latter, paid out of the

privy purse, or living upon free quarters. They were known by the various names of *ruptarii*, *routers*, and *ruyers*, from a German word signifying a horseman or knight; they were also denominated *Brabançons*, *Provençales*, *Coterelli*, and *Flemings*, and were in reality a set of freebooters of all nations, ready to be engaged for hire. These were chiefly called in by our kings in their disputes with the great barons. Since the time of king Edward III., when it became customary for our kings to engage with their subjects, and other persons by indenture, to furnish soldiers at certain wages, most of our armies consisted of stipendiary troops: such was the army raised and commanded by the bishop of Norwich, A. D. 1382, the 6th of Richard II., and that of the 16th of Henry V. These stipendiary forces were, the garrisons and castle guards excepted, kept up only in time of war; and though mercenary, were not standing armies. Their subsistence was drawn from the grants made by parliament, in which their specific numbers were sometimes stipulated. The first standing forces employed by our kings were their immediate body-guards, such as the serjeants at arms, the yeomen of the guard, and the gentlemen pensioners; and yet these were calculated rather for the splendour of a court than the operations of the field. Under the troubles of Charles I., a number of troops were levied by both parties, without any regard to law or custom. Two regiments of guards raised by Charles II. in 1660, one of horse and one of foot, formed the two first corps of our present army; and these were afterwards considerably increased. In 1661, the first regiment, or Royal Scots, were brought back from France, jocularly stiled from its antiquity, "Pontius Pilate's guards;" and there was also, about the same time, an English corps of cavalry in the French service. The revolution caused the military part of the constitution to be new modelled, and the army to be voted from year to year, by the act stiled the *MUTINY Bill*.

The methods of raising the stipendiary, or mercenary troops, were either by commissions, resenbling our present beating orders, authorizing persons to enlist volunteers; or by indenture, which was a practice that began about the latter end of the reign of king Edward III., and in that of Henry V. became general. By these indentures, different persons engaged to provide a certain number of able men, properly armed, to serve the king for a stated time, at a stipulated pay and bounty, then stiled wages and regards: and in these agreements it was usual for the king to advance part of the pay before-hand, afterwards called "Imprest Money," and also to give security for the regular payment of the remainder. For this purpose, king Henry V. pledged all his jewels, which were not redeemed till after his death. Criminals were also sometimes pardoned on condition of serving in the royal army abroad, and finding security to answer any prosecution if called upon at their return. Several of our sovereigns also, under the authority of the royal prerogative, obliged districts, cities, towns, and even individuals, to send men and horses, or to pay contributions for that purpose.

The present mode of recruiting our armies is by engaging volunteers, who are enlisted to serve for an indefinite time, that is, till they shall be discharged, or for a certain time, with an annexed clause, "or during the war." See ENLISTING. Pressing for soldiers was practised much in its present form in the time of queen Elizabeth; and it has been several times occasionally authorized by acts of parliament. This, however, in itself, is but a bad expedient, and in general timidly, partially, and improperly executed.

The army, as it now stands, may date its origin from the restoration; though some of the establishments, formed by Charles II., were taken from corps raised during the

civil wars; such as the first regiment of foot, and the Coldstream regiment of guards, which last came with general Monk from Scotland. The royal regiment of horse guards, commonly called the *Oxford Blues*, is among the first in this establishment. The two troops of horse-guards, embodied by Charles about the same time, and of which the privates were all gentlemen, have been for some years abolished; and in their room have been substituted two fine regiments of cavalry, subject to military discipline like the rest of the army, and called the first and second regiments of *LIFE GUARDS*.

The regular army established by Charles II. consisted at first of little more than 5,000 men, including garrisons abroad. In 1684, the standing army amounted to 8,000 men; that on the Irish establishment having been at the same time augmented to 7,000. During the two succeeding reigns the army was much increased, as the nation was engaged in continental wars. Under Geo. I., in 1717, the forces voted by parliament amounted to 16,000 men. The standing army was much augmented during the following reign, on account of foreign wars and internal disturbances. Every successive war has augmented the establishment of the army in proportion to our acquisition of foreign territory. At the conclusion of the American contest, the forces were reduced to about 40,000 men for Great Britain and Ireland: and the peace establishment, in 1802, consisted of 128,999 men, including 17,000 cavalry, six regiments of colour in the West Indies, amounting to 4,158 men, and the foreign corps of Swiss, &c. estimated at 5,530. For the different kinds of troops, see *CAVALRY*, *FENCIBLES*, *FOOT*, *GRENADIERS*, *GUARDS*, *INFANTRY*, *INVALIDS*, and *MARINES*, &c. For the arrangement of an army in an engagement, see *ORDER OF BATTLE*.

An army sometimes acquires different appellations from the services in which it is employed. Thus, a *covering* army is that which covers a place, by lying encamped or in cantonments for the protection of the different passes which lead to a principal object of defence. An army is said to *blockade* a place, when, being well provided with heavy ordnance and other warlike means, it is employed to invest a town for the direct or immediate purpose of reducing it by assault or famine. An army of *observation*, is so called, because by its advanced positions and desultory movements it is constantly employed in watching the enemy. Such a body of troops is employed by besiegers to prevent relief being brought into a place, or the siege being raised by the enemy. An army of *reserve* may not improperly be called a general depôt for effective service. In cases of emergency, the whole, or detached parts of an army of reserve are generally employed to recover a lost day, or to secure a victory. It is also sometimes used for the double purpose of secretly increasing the number of active forces, and affording the aid necessary according to present exigency, and of deceiving the enemy with respect to its real strength. A *flying* army is a strong body of horse and foot, usually commanded by a lieutenant-general, which is always in motion, both to cover its own garrisons, and to keep the enemy in continual alarm. Smith's *Wealth of Nations*, vol. iii. ch. 1. part 1. Robertson's *Charles V.* vol. i. p. 112. Paley's *Princ. of Mor. & Pol. Philosophy*, vol. ii. p. 425. Montefq. *Sp. of Laws*, vol. i. p. 229. Blackst. *Com.* vol. i. p. 415. De Lolme's *Const. of Eng.* p. 429, &c. Grose's *Milit. Ant.* vol. i.

ARMY, Naval, is a number of ships of war, equipped and manned with sailors and marines, under the command of an admiral, with other inferior officers under him.

ARMY, Royal, is an army marching with heavy cannon; capable of besieging a strong, well-fortified city.

For the diseases incident to armies, see *DISEASE*, *CAMP*, *GARRISON*, *HOSPITAL*, *SOLDIER*, &c.

ARNA, in *Ancient Geography*, a town of Italy, in the eastern part of Umbria, opposite to Perugia and near the Tiber, mentioned by Silius Italicus, l. viii. v. 458.; now known under the name of "La Civitella d'Arno."

ARNA, or *Arne*, a small territory of Greece, in Thessaly, so called from its metropolis. Piny places it in Phthiotis, a district of Thessaly. Strabo says, that Homer gives the name of Arna, or Arne, to Araxophium in Beotia, annexing to it the epithet *πελυαζίδου*, on account of its abundance of grapes. It is said to have derived its name from Arne, the daughter of Cæolus, by whose son Beotius it was built.—*Arna* was also a town of Asia Minor, in Lycia, called by some authors Xanthus.—Also, a town of Spain, on the right of Bætis, between Hispals to the south-west, and Corduba to the north-east.—Also, a town of the island of Andros, in the Archipelago.

ARNAB, in *Zoology*, the name of the hare (*Lepus*) among the Arabs.

ARNÆA, in *Entomology*, a species of *PAPILIO* (*Nymph. gem.*), found in Surinam. The wings are slightly indented and brown; posterior pair bluish, with five ocellated spots beneath. Fabricius. *Obs.* This author suspects that the insect figured by Cramer, under the specific name *Lea*, may belong to this species.

ARNAK, in *Ichthyology*, one of the Arabian fishes of the *RAJA* genus, described by Forkael in his *Faun. Arab.* p. 9. n. 13. The body is roundish and silvery; tail without fins, and armed with two spines. Fork. Gmelin. The teeth are granulate.

ARNALDIA, in *Physic*, a slow malignant kind of disease, frequent formerly in England; the most distinguishing symptom whereof was a falling of the hair.

Authors are much at a loss for the nature and kind of this disease, which appears to have been peculiar to our country. From the description given of it in an ancient chronicle, Mollerus concludes it to have been a species of the venereal disease, as that distemper appeared in those days in this country.

ARNAU, in *Geography*, a town of Bohemia, in the circle of Konigingratz, on the Elbe.

ARNAUD DE VILLA NOVA, so called from Villeneuve, the place of his birth, in *Biography*, a philosopher and physician of extraordinary talents, born about the middle of the thirteenth century, studied at Paris and Montpellier, and further improved himself by visiting the different schools in Italy. He then travelled to Spain, where he acquired a knowledge of medicine, and of their language, from the Arabian physicians. He here acquired so much reputation, that a sect was formed in the country, called from him "*A nol-distæ*." He is said to have had such faith in astrology, as to predict from the aspect of the stars the termination of the world, which he supposed would happen by the year 1376. He was a great chymist, and wrote several treatises on the subject. While in Spain, he became acquainted with Raymond Lully, who call's him his master. At Paris, he had given his opinion so freely on theological matters, particularly of the monks, and of the mass, that the faculty of theology there condemned fifteen of his positions, one of which was, "that the works of mercy and of medicine were more acceptable to God than the sacrifice of the altar." To avoid the consequences of their censures, and finding the Inquisition were proceeding against Apono, for taking similar liberties with religion, he retired to the court of Frederic of Aragon, who had formerly been his friend, and there wrote his treatise concerning the government of health, and his commentaries on the *Schola Salernitana*. He is supposed to have died about the year 1312. In 1313, pope Clement wrote

wrote a circular letter, adjuring every one under their apostolical obedience, to discover and send to him a treatise on the practice of physic written by Arnaud which he had promised to give his holiness, but was prevented, he supposed, by his death. *Friend's Hist. of Phys.* vol. ii. p. 251. — His works, which were numerous, were collected and printed at Lyons in folio, 1520; and again at Basle, 1585, with notes by Nicolas Tolerus. Eloy has given a catalogue of the treatises in his *Dict. Hist.* among them we find, “*Expositiones visionum quæ sunt in somniis, ad utilitatem medicinæ;*” “*Remedia contra maleficia;*” “*De conservanda juventute, et retardanda senectute;*” and others “*ejusdem farinae;*” but many of them are on more familiar and useful subjects. He complains in several parts of his works, of the interference of the clergy in the practice of physic, to the great detriment of the professors of the art, as well as of the art itself. The evil however continued to increase, notwithstanding the attempts of the popes to check it, until after the revival of letters.

ARNAUL, in *Geography*, a fortified island on the western coast of the hither peninsula of India, commanding the entrance of the Augaffyah or Mandavee river, between Bombay and Surat.

ARNAULD, ANTONY, in *Biography*, an eminent lawyer, was born at Paris in 1560. As advocate to the parliament of Paris, he was distinguished for his eloquence and probity, and consulted by persons of distinction on the most important affairs. His pleadings against the Jesuits in favour of the university of Paris, in 1594, which are famous, were published in 8vo. at Paris in 1594, and in 12mo. in 1717. He also published another work against the Society, in 1602, and “*Advice to Louis XIII.*” in 8vo. in 1615. He died in 1619; and several of his sons acquired great celebrity. *Nouv. Dict. Hist.*

ARNAULD, D'ANDILLY, the eldest son of the preceding, was born at Paris in 1588. In several posts of distinction which he occupied at court, he employed his influence in support of justice and virtue; and such was his character, that Balzac said of him; “*he was neither ashamed of the Christian graces, nor vain of the moral virtues.*” At the age of fifty-five, he retired to Port-Royal, and devoted himself to religious studies. He died at the age of eighty-five, having retained the full vigour both of his body and mind. Besides other works, his “*Translation of Josephus,*” said to be more elegant than faithful, was printed at Paris in folio, in 1667, and in five volumes 12mo. in 1672; and at Amsterdam, in two volumes folio, in 1681. His “*Apogetic memoir for the house of Port Royal,*” was written in 1654; “*Memoirs of his life by himself,*” were printed in two volumes 12mo.; and “*A Poem on the life of Christ,*” was printed in 1685, 12mo. *Nouv. Dict. Hist.*

ARNAULD, HENRY, brother of the preceding, abbot of St. Nicholas, and afterwards bishop of Angers, was born at Paris in 1597. For his services to the family of the Barbarini, in 1645, on occasion of their disputes with pope Innocent X., they struck a medal in honour of him, and erected his statue in their palace at Rome. From the time of his appointment to the see of Angers, in 1649, to his death in 1692, he left his diocese only once, which was for the purpose of reconciling the duke of Tremouille to his son. He is said to have appealed the queen mother when she was about to punish the inhabitants of Angers for their revolt in 1652, by saying to her at the communion, “*Receive your God, who, when he was dying on the cross, pardoned his enemies.*” It is reported concerning him, that the surest title to his favour was to have offended him. His whole time was devoted to study, religious exercises, and the affairs of his diocese; and being exhorted by a friend to allow himself one day for relaxation, he replied, “*I shall willingly do it,*

if you can find a day in which I am not a bishop.” Although he attained the advanced age of 95, his death was considered as premature, and he was lamented as the father of the poor, the comforter of the afflicted, and the best of bishops. His “*Negotiations*” at the court of Rome, and in other courts of Italy, containing many curious remarks, were published at Paris, in 1748. *Nouv. Dict. Hist.*

ARNAULD, ANTHONY, an eminent Jansenist, was the twentieth child of the advocate of the same name, and born at Paris in 1612. Having first studied the languages and philosophy in the college of Calvi, and afterwards theology in the college of Sorbonne, he was, in the year 1643, admitted a member of the Sorbonne. In the dispute between the Jesuits and Jansenists, concerning frequent communion, Arnauld took an active part; and in 1643 published his famous book on “*The Practice of communicating frequently—Traite de la frequente communion.*” The frequent celebration of the Lord's Supper was strenuously recommended by the Jesuits as the most certain and infallible method of appeasing the deity, and obtaining plenary remission; but the Jansenists, and also many other learned and pious doctors of the Romish communion, censured and condemned this mode of proceeding, whilst they rejected the intrinsic virtue and efficient operation, called the “*opus operatum,*” attributed to the sacraments; and maintained that the act of receiving the sacrament of the Lord's Supper can be profitable only to those whose minds are prepared by faith, repentance, and the love of God, for that solemn service. Arnauld's treatise on that subject gave great offence to the Jesuits; and their enmity against him was increased by the books written by him in defence of the Jansenists, on the subject of grace. In 1656, he was excluded from the faculty of divinity of Sorbonne, against the judgment of seventy-two doctors of this faculty; and from this time he withdrew into solitude, where he remained twelve years, and employed himself in writing curious treatises in various branches of science. When the persecution of the Jansenists was suspended by pope Clement IX. in 1669, Arnauld returned to Paris, and was respectfully received both by the pope's nuncio, and by Louis XIV. At their request he defended the Catholic faith against the Calvinists; but his enemies succeeding in bringing him into suspicion with the king, he thought it prudent to retire. Accordingly he left the kingdom in 1679, and took up his residence in the Netherlands, where he essentially served the cause of the Jansenists, and gained over by his eloquence and sagacity the Romish congregations in Holland to their party. In this retreat he also wrote “*An Apology for the Clergy of France, and the Catholics of England,*” in reply to the “*Politics of the Clergy of France,*” written by Jurieu, a Protestant minister, and published at the Hague; and this reply produced from the pen of Jurieu, a piece of keen satire, entitled “*L'Esprit de M. Arnauld.*” His “*Reflections philosophical and theological,*” were produced by Malbranche's treatise “*On Nature and Grace;*” and in a work, “*On true and false Ideas,*” he attacked the philosophical doctrine advanced by this author in his “*Search after Truth.*” His “*Practical Morality of the Jesuits,*” was levelled against this fraternity; and he also attacked father Simon on the inspiration of the scriptures, and wrote in defence of the propriety of translating the scriptures into the vulgar tongue. Notwithstanding all the zeal of Arnauld in vindication of the Catholic faith, his orthodoxy was suspected; and in 1690, a canonical warrant was issued against him, under the contemptuous and illiberal description of “*One Arnauld,*” by the superiors of the several monastic fraternities at Liege. Arnauld, however, persevered in his attachment to the church, notwithstanding the charges of heresy with which he was reproached; and in his last moments he received the sacrament from the hands of his priest,

priest, though he had only two days before celebrated mass. He retained his faculties to the advanced age of 82 years, and died at Brussels, on the 8th of August, 1694. His heart was carried, at his particular request, to Port Royal, and there it was honorably deposited. Arnauld possessed a vigorous and active mind; his memory was tenacious, his literature various and extensive: he excelled as a logician; and in theology and ecclesiastical history he was deeply read; and he was well acquainted with polite literature. His genius was original and inventive; and he is said to have taught in philosophy, opinions similar to those of Des Cartes, before his writings appeared, and to have maintained the doctrines of Janfenius several years previous to the publication of that prelate's book on grace. Although Arnauld suffered persecution with the Janfenists whilst he lived, it has been a problem of no easy solution ever since his death, whether he was not an heretic. His writings are chiefly controversial, and bear evident marks of a strong intellect and lively fancy. In polite literature and philosophy, he published "A general and rational Grammar," illustrating the universal principles of language, reprinted with notes by M. Duclos in 1756; "Elements of Geometry;" "The art of Thinking;" "Reflections on the Eloquence of Preachers;" "Objections to the Meditations of Des Cartes;" and "A treatise on true and false Ideas." On the subject of grace, his principal works are "Reflections philosophical and theological," and translations of several pieces of Augustine. In the controversy against the Protestants, he wrote "The perpetuity of Faith;" "The overthrow of Christian Morality by the Calvinists;" "The impiety of Calvinistic Morality;" "An apology for the Catholics;" "The Calvinists convicted of impious tenets in Morals;" and "The Prince of Orange, a new Absalom, a new Herod, a new Cromwell," which was extensively circulated through various courts of Europe by Louis XIV. Against the Jesuits, his most famous work is "The practical morality of the Jesuits," in eight volumes, to which several learned Janfenists are supposed to have contributed; it was republished at Amsterdam in 1742. His writings upon the holy scriptures are "Difficulties proposed to M. Steyaert;" "Defence of the New Testament of Mons;" "The translation of the Missal into the vulgar tongue, authorized by Scripture and the Fathers;" and an "History and Harmony of the Evangelists." After his death M. Quefnel published, in nine volumes, his "Letters" and several "Posthumous Pieces," among which is the "Dissertation on the method of Mathematicians," vindicating his mode of writing, and justifying, in certain disputes, the use of terms commonly thought harsh.

Arnauld was at the head of that learned body of Janfenist writers, known by the denomination of "Messieurs de Port Royal," who passed their days in literary pursuits, and pious exercises, in the retreat of Port Royal, a mansion situate at the distance of six leagues from Paris, originally a monastery, and afterwards a sanctuary of letters. Gen. Dict. Nouv. Dict. Hist. Mosheim's Eccl. Hist. vol. iv. p. 272. vol. v. p. 181. 208. 219. 251.

ARNAULD, GEORGE, son of an eminent surgeon at Paris, applied himself, during the latter part of his life, almost exclusively to the cure of ruptures, in which he acquired considerable knowledge. On account of some accident occurring while he practised midwifery, occasioned, as it was supposed, by mismanagement, he removed from Paris to London, where he continued to reside the remainder of his life. In 1748, he published "Dissertations on Hernias, or Ruptures, in two parts," in 8vo. In these he gives directions for enabling persons afflicted with ruptures, to avert the danger usually consequent to that accident. He supposes that one eighth part of our species suffer from this complaint, which, though perhaps an exaggerated account, shews its fre-

quency, and how necessary it is to direct the attention of surgeons towards making improvements in its treatment. He gives the signs by which the different kinds of ruptures may be distinguished, and clear and distinct directions for managing them. He relates cases of cures effected by him after a gangrene had taken place, by cutting out the mortified part of the intestine. In 1763, he published "Plain and easy Instructions on the Diseases of the Bladder and Urethra," in 12mo. in which he highly commends the use of bougies. In his "Memoires de Chirurgia," published in 1768, in 2 vols. 4to. he gives the whole of Dr. Hunter's treatise on the "Hernia congenita," with additional observations, from inspection of a case that fell under his notice; also further observations on ruptures, and observations on aneurisms. We have, by the same writer, "Remarks on the composition, use, and effects of the extract of lead of Goulard, and of his vegeto-mineral water," 1770, 12mo. Biblioth. Chirur. Haller.

ARNAUT BELIGRAD, in *Geography*, a town of European Turkey, in the province of Albania, 40 miles north-east of Valona.

ARNAUTS, in *Military Language*, denote Turkish light cavalry, whose only weapon is a very crooked sabre. Some such are in the Russian service.

ARNAY LE DUC, in *Geography*, a town of France, and principal place of a district, in the department of the Cote' d'Or, and chief place of a canton in the district of Beaune, 25 miles south-west of Dijon, and 24 south of Semur en Auxois. The place contains 2543, and the canton 11,550 inhabitants: the territory includes 267½ kilometres and 20 communes. N. lat. 47° 7'. E. long. 4° 26'.

ARNDAL, a small town of Norway, in the diocese of Christianland, and district of Nidanassahn, seated on a rock in the middle of the river Nid, and remarkable for a good wharf or landing-place. The houses stand mostly on the declivity of the rock, and the others are built on piles in the water. The inhabitants pass from house to house by means of bridges of boats. The town is commodiously situated for trade; and many ships are employed in the transportation of timber. The church stands near the summit of the rock, and there is an ascent to it from the houses by steps hewn in the rock. In the neighbourhood of this place are many iron mines.

ARNDORF, a town of Germany, in the circle of Bavaria, and principality of Saltzbach, four miles east of Kemnat.

ARNDT, JOHN, in *Biography*, an eminent Protestant divine, was born at Balleustadt, in the principality of Dessau in Germany, in 1555. In consequence of a vow which he made when he was sick, whilst he was prosecuting the study of medicine, he devoted himself to divinity; and was successively minister of Quedlinburg, and at Brunswick. His fame, as a preacher, excited jealousy among his brethren; and being charged with errors, he escaped persecution by retiring to Illeben; and in 1611, the duke of Lunenbourg gave him the church of Zell, and appointed him superintendent of all the churches in his duchy. The charge against him was occasioned by a book which he published at Jena, in 1605 and 1608, intitled "True Christianity;" asserting that many of the irregularities subsisting among Protestants were owing to a mistaken notion of the efficacy of a speculative faith, unproductive of good works: he laid great stress on the contrary doctrine; and intermixed some mystical ideas and expressions, borrowed from the writings of Bernard, Thomas a Kempis, and other ascetics. He thus gave offence to several of his brethren, and particularly to Osiander, a divine of Tubingen, who attacked him in a treatise, intitled "Judicium Theologicum." By Osiander, and others, it was alleged against him, that his style was infected with the jargon of Paracelsus, Weigelius, and other mystical chemists,

chemists, who pretended, by the power and ministry of fire, to unfold the secrets of nature and the mysteries of religion. Although he seems to have manifested his inclination towards the opinions of these fantastical philosophers, he was declared by many grave and pious divines exempt from any errors of moment, and universally allowed to be a man of exemplary integrity and piety. Arndt died in 1621; and his works have been translated into several modern languages. Gen. Dict. Mosheim's Eccl. Hist. vol. v. p. 337.

ARNDT, JOSHUA, a German divine, was born at Gultrow in 1626, and became professor of logic at Rostock, and preacher, and also ecclesiastical counsellor to the duke of Mecklenburg. He died in 1687, and left several works, particularly "Miscellanea Sacra," 8vo.; "Clavis antiquitatum Judaicarum," 4to.; and "Tractatus de Superstitione." His life, written by his son, was printed at Gultrow in 1697. Nouv. Dict. Histor.

ARNE, THOMAS AUGUSTINE, was the son of Arne, the celebrated upholsterer of King-street, Covent-garden, at whose house the Indian kings lodged in the reign of queen Anne, as mentioned in the Spectator, N^o 50. Arne had a good school education, having been sent to Eton by his father, who intended him for the law. But we have been assured by several of his school-fellows, that his love for music operated upon him too powerfully for his own peace, or that of his companions; for, with a miserable cracked common flute, he used to torment them night and day, when not obliged to attend the school. And he told us himself, that when he left Eton, such was his passion for music, that he used to avail himself of the privilege of a servant, by borrowing a livery, and going into the upper gallery of the opera, which was then appropriated to domestics. At home he had contrived to secrete a spinet in his room, upon which, after muffling the strings with a handkerchief, he used to practise in the night while the rest of the family were asleep; for had his father discovered how he spent his time, he would, probably, have thrown the instrument out of the window, if not the player. This young votary of Apollo was at length obliged to serve a three years clerkship to the law, without ever intending to make it his profession; but even during this servitude, he dedicated every moment he could obtain fairly, or otherwise, to the study of music. Besides practising on the spinet and studying composition by himself, he contrived, during his clerkship, to acquire some instruction on the violin, of Pestling, upon which instrument he had made so considerable a progress, that soon after he had quitted his legal master, his father accidentally calling at a gentleman's house in the neighbourhood upon business, found him engaged with company; but sending in his name, he was invited up stairs, where there was a large company and a concert, in which, to his great astonishment, he caught his son in the very act of playing the first fiddle! Finding him more admired for his musical talents than knowledge in the law, he was soon prevailed upon to forgive his unruly passion, and to let him try to turn it to some account. No sooner was the young musician able to practise aloud in his father's house, than he bewitched the whole family. On discovering that his sister was not only fond of music, but had a very sweet toned and touching voice, he gave her such instruction as soon enabled her to sing for Lampe, in his opera of Amelia. And finding her so well received in that performance, he soon prepared a new character for her, by setting Addison's opera of Rosamond, in which he employed his younger brother likewise in the character of the page. This musical drama was first performed March 7, 1733, at Lincoln's-inn Fields, where Mrs. Barber performed the part of the King; Leveridge, Sir Trufty; Page, Master Arne, who had never

appeared in public; Messenger, Mr. Corfe; Queen, Mrs. Jones; Grideline, Miss Chambers; and the part of Rosamond by Miss Arne. The opera was performed ten nights successively, and with great applause; the last time, for the benefit of Mr. Arne, jun. the composer. Having succeeded so well in a serious opera, our young musician tried his powers at a burletta, and fixed upon Fielding's *Tom Thumb* for that purpose; which, under the title of the *Tragedy of Tragedies*, having met with great success in 1731, he now got it transformed into the *Opera of Operas*, and setting it to music after the Italian manner, had it performed May 31st, at the new theatre in the Haymarket; the part of Tom Thumb by Master Arne, his brother. Princess Amelia and the duke of Cumberland honoured the second representation with their presence; the prince of Wales, the sixth; the youngest princesses, the eighth; and afterwards it had a considerable run.

In 1736, Miss Arne, his sister, now Mrs. Cibber, who had captivated every hearer of sensibility by her native sweetness of voice and power of expression as a singer, first appeared as a tragic actress, in the part of *Zara*, at Drury-lane, where her brother was engaged as composer; and it is difficult to say which of the two received the greatest applause, the actress for her truly interesting person, and pathetic voice and manner, or the musician for his natural and pleasing strains, particularly the *March*, which was encored every night, and remained in great favour throughout the kingdom during many years.

In 1738, Arne established his reputation as a lyric and dramatic composer, by the admirable manner in which he set Milton's *Comus*. In this masque he introduced a light, airy, original, and pleasing melody, wholly different from that of Purcell or Handel, whom all English composers had hitherto either pillaged or imitated. Indeed, the melody of Arne at this time, and of his Vauxhall songs afterwards, forms an æra in English music; it was so easy, natural, and agreeable to the whole kingdom, that it had an effect upon our national taste; and till a more modern Italian style was introduced in the pasticcio English operas of Messrs. Bickerstaff and Cumberland, it was the standard of all perfection at our theatres and public gardens.

In 1742, Mr. and Mrs. Arne went to Ireland, where they remained till 1744; in the autumn of which year he was again engaged as composer at Drury-lane; and on the death of Gordon, the first violin, who was successor to Charke, he accepted of the station in the orchestra of that theatre of leader of the band. His hand was enfeebled by rheumatism, but his skill surpassed that of any performer on the violin who had preceded him.

Mr. Arne and Mr. Boyce were frequently concurrents at the theatres, and in each other's way, particularly at Drury-lane. Arne was aspiring, and always regarded Handel as a tyrant and usurper, against whom he frequently rebelled; but with little effect, except upon his own purse, for he was always a loser when he had oratorios performed in Lent on the same night as Handel. But in his songs for the theatres and public gardens, he was ever triumphant over all competitors. At Vauxhall, particularly, where his ballads, dialogues, duets, and trios, were performed during many years with great applause, and were afterwards circulated all over the kingdom. In the summer of 1745, when vocal music was first added to instrumental, by Mr. Tyers, the proprietor of Vauxhall, Arne's little dialogue of *Colin and Phœbe*, written by the late Mr. Moore, author of fables for the female sex, was constantly encored every night for more than three months successively.

In 1759, this ingenious and popular composer had the degree of doctor in music conferred upon him at Oxford.

And in 1762, quitted his former style of melody, in which he had so well set Comus, and furnished Vauxhall and the whole kingdom with such songs as had improved and polished our natural taste; and when he set the bald translation of Metastasio's opera of *Artaxerxes*, he crowded the airs, particularly in the part of Mandane for Miss Brent, with all the Italian divisions and difficulties which had ever been heard at the opera. This drama, by the novelty of the music to English ears, with the talents of Tenucci, Peretti, and the doctor's scholar Miss Brent, had very great success; and still continues to be represented whenever fingers can be found who are possessed of sufficient abilities for its performance. But in setting *Artaxerxes*, though the melody is less original than that of *Comus*, Arne had the merit of first adapting many of the best passages of Italy, which all Europe admired, to our own language, and of incorporating them with his own property, and with what was still in favour of former English composers.

The general melody of our countryman, if analysed, would perhaps appear to be neither Italian nor English, but an agreeable mixture of Italian, English, and Scots. Many of his ballads, indeed, were professed imitations of the Scots style; but in his other songs he frequently dropped into it, perhaps without design.

Arne never was a close imitator of Handel; and was almost the only English composer of the last century, who did not build his fame on imitations of his works, and who was not proud to hear his admirers say of his compositions—*'tis all Handel!* On which account Arne was never thought by the votaries of their great model to be a sound contrapuntist. However, he had an inward and secret reverence for his abilities, and for those of Geminiani, as well as for the science of Pepusch; but except when he attempted oratorios, theirs was not the merit requisite for him, a popular composer who had different performers and different hearers to write for. In the science of harmony, though he was chiefly self-taught, yet being a man of genius, quick parts, and great penetration in his art, he betrayed no ignorance or want of study in his scores.

The oratorios he produced were so unfortunate, that he was always a loser whenever they were performed. And yet it would be unjust to say that they did not merit a better fate; for though the choruses were much inferior in force to those of Handel, yet the airs were frequently admirable. But besides the great reputation of Handel, with whom he had to contend, Arne never was able to have his music so well performed; as his competitor had always a more numerous and select band, a better organ, which he played himself, and better fingers.

None of this ingenious and pleasing composer's capital productions had full and unequivocal success but *Comus* and *Artaxerxes*, at the distance of twenty-four years from each other. *Rosamond*, his first musical drama, had a few songs in it that were long in favour, and the *Judgment of Paris* many: but except when his sister, Miss Arne, afterwards Mrs. Cibber, sung in them, he never gained any thing by either. *Thomas and Sally*, indeed, as a farce, with very little musical merit, was often acted; and previous to that, *Eliza* was a little while in favour; but the number of his unfortunate pieces for the stage was prodigious! yet none of them were condemned or neglected for want of merit in the music, but words, of which the doctor was too frequently guilty of being the author. Upon the whole, though this composer, who died March 5th, 1778, had formed a new style of his own, there did not appear that fertility of ideas, original grandeur of thought, or those resources upon all occasions, which are discoverable in the works of his predecessor Purcell, both for the church and stage;

yet, in secular music, he must be allowed to have surpassed him in ease, grace, and variety; which is no inconsiderable praise, when it is remembered, that from the death of Purcell to that of Arne, a period of more than fourscore years, no candidate for musical fame among our countrymen had appeared, who was equally admired by the nation at large.

Of near a hundred and fifty musical pieces that were brought on the stage at the two theatres, from the time of his composing *Rosamond*, to his decease, a period of little more than forty years, thirty of them, at least, were set by Arne.

ARNE, MICHAEL, the natural son of Dr. Arne, was brought at an early age on the stage by his aunt Mrs. Cibber, who took great pains in qualifying him for the part of the page in the *Orphan*, and his father also tried to make him a singer; but he was naturally idle, and not very quick. However, he acquired a powerful hand on the harpsichord, and played with neatness and precision some of Scariatti's most difficult lessons. It is recorded with reluctance as a beacon, that his moral character was less deserving of praise than his professional. Always in debt, and often in prison, he sung his first wife to death and starved the second, leaving her in absolute beggary.

ARNE, in *Ancient Geography*, a town of Asia, in Mesopotamia.—Also, a town of the territory of the Erastinians, in the vicinity of Thrace.—Also, a fountain of Peloponnesus, in Arcadia.

ARNE, in *Geography*, a river of Switzerland, descends from the lofty Alps in the vicinity of Mt. Blanc, and forms a junction with the Rhone about a quarter of a league from Geneva; and the two rivers run together for more than half a league before their waters are blended: the stream is broad, and on one side is the brown and muddy Arne, while on the other are distinctly seen the clear, blue, and untainted waters of the Rhone. This river, or rather torrent, is subject to sudden and considerable swellings; and its waters have flowed back on the bed of the river, and in their reverted course turned the mills that are constructed on its banks. The waters of the Arne, when it has deposited the slime with which it is charged, is of the purest quality. Saussure, *Voy. des Alpes*, tom. i. § 13, &c.

ARNEBURG, a small town of Germany, in the circle of Upper Saxony, and old mark of Brandenburg, seated on the Elbe. The principal subsistence of its inhabitants is derived from navigation and traffic in corn, and also in agriculture. From the town of Arneburg are denominated a circle and provincial riding. It is 50 miles west of Berlin. N. lat. 52° 45'. E. long. 11° 59'.

ARNEDO, a sea-port town of Peru, with a good harbour, in the Pacific ocean, 23 miles north of Lima. S. lat. 11° 38'. W. long. 76° 54'.

ARNEE, a town of Hindostan, in the Carnatic, 14 miles S. of Arcot, and 52 N. W. of Pondicherry.

ARNEE, in *Zoology*, a quadruped of the Bos or Ox tribe, a native of India, and which appears to have been first described by Mr. Kerr, in his work on the Animal Kingdom. To Gmelin it was very probably unknown. In the *General Zoology* by Dr. Shaw it is specifically described in these terms: *Bos Arnee*. B. *Cornibus erectis lunatis supra planiusculis rugosis*.—Ox with upright lunated horns, flat and wrinkled on their upper surface. The latter writer observes that this Indian species is known chiefly from its vast horns, which are sometimes seen in museums; and from Indian paintings, in which it is occasionally represented.

In the work of Mr. Kerr, it is said to have been met with by a British officer, in the woods above Bengal; and to have been fourteen feet high, measuring from the hoofs to the top of the horns. It partakes of the form of the horse, the bull, and the deer; and is represented as a bold and daring animal. The figure of this species in the work of

Mr. Kerr, is copied from an Indian painting, and the same figure is again introduced into Dr. Shaw's Zoology. The animal is of a black colour, quite smooth, and without either protuberance or mane.

ARNEMUDEN. See ARMUYDEN.

ARNEN, or ARNEM, in *Geography*, a town of Switzerland, in the Valais, thirty-five miles east of Sion.

ARNESEIO, a town of Italy, in the kingdom of Naples, and country of Bari, seven miles W. S. W. of Andria.

ARNE-SYSSSEL, a district of Iceland, in which is situated the episcopal see of Skaalholt.

ARNEVEL, a town of France, in the department of Sarre; and chief place of a canton, in the district of Sarrebrued. The place contains 502, and the canton 8514 inhabitants: the territory includes 31 communes.

ARNFELS, a town of Germany, in the duchy of Stiria, ten miles south-east of Landspurg.

ARNGITZES, a town of Walachia, forty-two miles S. S. E. of Hermanstadt.

ARNHAUSEN, a town of Germany, in the circle of Upper Saxony and duchy of Pomerania, twenty-four miles east of New Stettin.

ARNHEIM, or ARNEM, *Arnoldi-villa* or *Arenacum*, a large, strong, and populous town of the United Netherlands, the capital of Arnhem or the Veluwe quarter of Guelderland, lies on the north side of the Rhine, at the foot of the Veluwe hills, near the place where the Yssel and the Rhine separate their streams. The streets are regular, the houses well built, the walls are delightfully planted with elm and lime trees, and the town is the usual winter residence of many families, who spend the summer on their estates in the Veluwe, where they enjoy a much more salubrious air than that of the maritime provinces of Holland. The church of St. Walburg is a fine edifice; and that of Eusebius has an excellent chime of bells. Arnheim is fortified with a rampart of earth, paved with brick, and washed on one side by the Rhine, and on the other by a deep fosse, dug by Drusus Nero. This city was founded before the time of Tacitus, who mentions it under the name of Arenacum; and it was fortified and invested with the privileges of a city by Otho III. duke of Guelderland, A. D. 1233. It is thirty miles east of Utrecht, and forty-five south-east of Amsterdam. N. lat. 52° 2'. E. long. 5° 54'.

ARNIBERG, a mountain of Switzerland, in the district of Engelberg.

ARNICA, in *Botany*. Lin. g. 958. Schreb. 1296. Juss. 182. Gært. t. 173. Class. *syngenesia polygamia superflua*. Nat. Ord. *Compositæ discoideæ*. *Corymbifera*. Juss. Gen. Char. *Calyx*, common, shorter than the ray of the corolla; leaflets lanceolate, the length of the calyx, erect. *Cor.* compound, radiate; corollules hermaphrodite in the disk, very numerous; females in the ray about twenty; proper of the hermaphrodite, tubular, erect, five-cleft, equal; female lanceolate, very long, three-toothed, spreading. *Stam.* to the hermaphrodites, filaments very short; anther cylindrical; to the females, filaments subulate, erect; anthers none. *Pist.* germen oblong; style simple, the length of the stamens; stigma biind. *Per.* none; calyx unchanged. *Seeds*, solitary, oblong; down simple, in the hermaphrodites pubescent, long. *Rec.* naked. *Olf.* Corollules of the disk often trifid, with the outer division twice as broad as the others.

Eff. Gen. Char. *Rec.* naked; down simple; corollules of the ray have five filaments, without anthers.

Species, 1. *A. montana*, mountain arnica. Gært. fr. 2. 451. Flor. Dan. t. 63. Woodv. Med. Bot. t. 10. "Leaves ovate, entire, stem-leaves twin, opposite:" the root is woody; stem above a foot high, and not more than half this height in alpine situations, simple, obscurely angular; flowers two

inches in diameter, of a deep yellow, and placed on upright terminal peduncles; calyx cylindrical, composed of rough hairy scales; ligulate florets about fourteen, three-toothed, striated, twice as long as the calyx, hairy at the base; seeds oblong, blackish, hairy, crowned with a straw-coloured down. A native of most parts of the continent of Europe, and of Siberia, flowering in July; cultivated by Miller in 1759. 2. *A. piloselloides*, mouse-ear arnica; "leaves perfectly entire, elliptic, villose; scape one-flowered, woolly; calyx equalling the ray:" the stem and leaves covered with down; leaves two or three inches long, and about half this breadth, hairy, especially on the back, pointed; scape twice as long as the leaves, very woolly towards the top; flower large; calyx tomentose, of the length of the ray; florets of the ray very narrow, of a dark red or purple colour, and male. A native of the Cape of Good Hope. 3. *A. scorpioides*, alternate-leaved arnica. Jacq. Flor. Austr. 4. t. 349. "leaves alternate, toothed." The roots are contorted, and thus supposed to have some resemblance to a scorpion; stems several, from six inches to a foot in height, terminated by a deep yellow flower, of two inches diameter; root-leaves roundish or oval, deeply ferrate, on long foot-stalks; stem-leaves few, nearly sessile, viscid, soft, shaggy. The whole plant has a disagreeable smell. A native of Switzerland, Savoy, Dauphiné, &c. Cultivated by Miller in 1759. 4. *A. doronicum*, Jacq. Flor. Austr. 1. t. 92. A clusii allion. ped. A. siriaca. Villars Dauph. 210. "leaves alternate, subserrate, oblong, rough." The leaves are hairy; stem from four to eight inches high, and never bears more than one flower. A native of the high Alps of the Grisons, Dauphiné, Piedmont, and Austria. 5. *A. maritima*, sea arnica. Aster, helenium maritimum, &c. Gmel. lib. ii. p. 175. "leaves lanceolate, the lower ones ferrate; stem leafy, many flowered." A native of Kamtschatka and North America. 6. *A. crocea*, saffron-flowered arnica; "leaves ovate; repand toothletted, tomentose underneath;" scape one-flowered, with a few linear bractes; root-leaves oval, often heart-shaped, rigid, petioled; florets of the ray furnished with stamens. A native of the Cape of Good Hope. 7. *A. ciliata*, ciliate-leaved arnica; "leaves stem-clasping, ovate, toothed, ciliate, smooth; stem simple, one-flowered." The stem is erect, a foot high, angular, hispid, with white bristles; leaves alternate, lower attenuated at the base, obovate, gash-toothed, ciliate; upper roundish, scarcely toothed, smaller ciliate; flower terminating, red, the size of a small pear. A native of Japan. 8. *A. japonica*, japonese arnica. Thunb. j. 319. "Leaves gash-palmated, toothletted; flowers terminal, sub-binate:" the stem is hollow, round, striated, erect, more than a foot high; leaves petioled, alternate, smooth, lobes gash-pinnatifid, toothed; petioles of the lower leaves long, of the branches broad; stem-clasping, striated, short; flowers peduncled, red, few. A native of Japan. 9. *A. palmata*, palmate-leaved arnica. Thunb. l. c. "Leaves gash-palmated, toothed; flowers panicled:" the stem is two feet high, streaked, erect, smooth; leaves alternate, petioled; lobes of the lower leaves unequal, toothed, the upper undivided, ferrate; flowers terminating, small, yellow. A native of Japan. 10. *A. gerbera*. "Leaves pinnatifid; lobes rounded:" the lobes of the leaves are imbricated backwards, and, when young, tomentose underneath; the scape is surrounded with very slender leaves, and supports one large flower, with a dark purple disk, and a yellow ray, purple underneath. A native of the Cape of Good Hope. 11. *A. coronopifolia*. "Leaves pinnate; divisions linear." This very much resembles the *gerbera*, and is also a native of the Cape. 12. *A. opzrina*. Forst. Austr. n. 299. "Shrubby; leaves lanceolate, callous-crenate, tomentose beneath; peduncles one-flowered, solitary, terminating, scaly." A native of New Zealand.

Medicinal Properties. The only species supposed to possess

these in any considerable degree is the *arnica montana*, the virtues of which have been not extravagantly extolled in Germany. It was first recommended as peculiarly efficacious in bruises, and hence obtained the appellation of *panacea lapporum*; and to this resolvent power its utility in various diseases has been ascribed, particularly in pulmonary complaints, suppressio mensium, hepatic obstructions, &c. Of its use in paralytic and other affections of a similar nature, many testimonials are adduced: nor have its good effects been less praised in rheumatism and dropsy; but it is the extraordinary febrifuge and antiseptic powers of the arnica which have been peculiarly celebrated by Dr. Collin of Vienna. With the flowers of this plant made into an electuary with honey, he informs us, that he cured more than one thousand patients labouring under the different species of intermittent fevers, in the Pazman hospital, from December 1771 to July 1774, and with the watery extract of the flowers he cured thirty quotidians, forty-six tertians, and fifty-eight quartans. In putrid fevers the Doctor employed an infusion of the flowers, with which many hundreds of patients were snatched from the very jaws of death. There are some cases, however, in which the Doctor recommends the roots in preference to the flowers, believing the former to possess more cordial, tonic, and antiseptic qualities; he therefore prescribes it where putridity and debility are more prevalent than fever. It was also found very efficacious in a malignant dysentery, in which he adduces many hundred instances of its successful employment, confirmed by the practice of Dr. Dietl. In thirteen cases of gangrenes, this medicine proved its antiseptic virtue in a still more evident manner. The Doctor gave nine drams of the powder of the flowers of arnica, mixed with a sufficient quantity of honey, in the course of forty-eight hours. Of the infusion in the proportion of one ounce of the flowers to a quart of water, two ounces every two hours. When he employed the root, it was in double this proportion. At first this plant is apt to occasion vomiting or uneasiness at the stomach, so that it is necessary to begin with small doses. See Woodv. Med. Bot. vol. i.

Propagation and Culture. 1, 2, 3, 4, 5, the European species, are hardy, and require a moist situation. They may be propagated by parting the roots in autumn when the stalks begin to decay, or by the seeds sown in autumn soon after they are ripe, for those sown in the spring often fail; but if the seeds are permitted to scatter, the plants will often come up of themselves, and require no other care than keeping them clean from weeds. The other species must be kept in pots under a frame, or in a dry stove. They may be increased by seeds, cuttings, or parting the roots, and must be treated as other plants from the Cape of Good Hope. See Martyn's Miller's Dict.

ARNICA. See DORONICUM.

ARNICÆ, in *Entomology*, a species of STAPHYLINUS, found on the *Arnica*, and described by Scopoli. It is black, the thorax and antennæ ferruginous; legs testaceous. Inhabits Europe.

ARNICÆ is also a species of MUSCA that inhabits Europe, and is said to be found chiefly on the disk of radiate flowers, and especially on that of *Arnica montana*. It is described by Linnæus in his *Fauna Suecica*; and by Scopoli. The wings are hooked, grey, and spotted with black.

ARNIS, in *Geography*, a small island of Denmark, in the duchy of Sleswick, in the gulf of Schely.

ARNISÆUS, HENINGUS, in *Biography*, a celebrated philosopher and physician, born at Halberstadt in Lower Saxony, taught medicine at Helmstadt the beginning of the seventeenth century, where he acquired such reputation that he was invited to Denmark, and made physician and counsellor (archiater) to the king. In 1610, he published "Ob-

servationes aliquot Anatomicæ," in 4to. In dissecting a woman who died the sixth day after being delivered of her first child, he saw, he says, the ossa pubis separated from each other, and the ossa ilia from the sacrum, and hence accounts for the greater difficulty with which women part with their first, than with their subsequent children: "quia articulatio tum primum solvitur." Later observations have however shewn us, that this separation of the bones of the pelvis is of very rare occurrence, and when it does happen to any considerable degree, occasions incurable lameness. The following year he published, "De partus humani legitimis terminis." This he fixes at the end of the ninth, or the beginning of the tenth month, though he admits a certain latitude, that is, that as the fœtus may be perfect and fit for exclusion some weeks earlier, so it may sometimes be detained in the uterus beyond that period.

He wrote also several political works, which are still esteemed. His book "De autoritate principum in populum semper inviolabili," was printed in 1612; and his "Reflectiones politicæ," in 1715. To this work he intended making additions, which were never completed. He was industrious in his endeavours to acquire information, and for this purpose travelled over France and England. Haller. Bib. Chir. Gen. Dict.

ARNISSA, in *Ancient Geography*, a town of Greece, in Macedonia.

ARNO, anciently *Arnus*, a river of Italy, rises in the Apennine mountains, in the duchy of Tuscany; passes by Florence, divides Pisa into two parts, and enters the Mediterranean, in the gulph of Genoa, twelve miles north of Leghorn, and four below Pisa, to which it is navigable for small vessels. It receives in its course the Sieva, the Pesa, and the Elfa.

ARNO is also a river of Abyssinia, which falls below Emfras, into the lake Tzana.

ARNOBIUS of Africa, in *Biography*, a Christian divine, flourished about the beginning of the fourth century, and taught rhetoric, in the reign of Dioclesian, at Sicca in Africa, with great reputation. At this time, he was a blind and zealous idolater; but he afterwards became a convert to Christianity, and a distinguished advocate in its defence. The manner of his conversion is thus related by Jerom in his chronicle, at the twentieth year of Constantine, or the year of Christ 326. "Arnobius, a rhetorician, is famous in Africa; who, while he taught the youth rhetoric at Sicca, and was yet a heathen, was admonished in his dreams to embrace Christianity. But when he applied to the bishop of the place for baptism, he rejected him, because he had been wont to oppose the Christian doctrine. Whereupon he composed an excellent work against his old religion, and thus at length, as by hostages of his piety, he obtained the seal of the covenant." Dr. Lardner questions the genuineness of this passage; and he alleges, that Arnobius himself doth not any where ascribe his conversion to dreams; that Jerom does not elsewhere mention or even hint at this circumstance; that in Jerom's catalogue, Arnobius is said to have flourished in the time of Dioclesian; and that Arnobius says of himself, that he wrote 300 years, more or less, since the rise of Christianity, and about 1050 years since the foundation of Rome, or according to the common computation, in the year of our Lord 297 or 298. Besides, it is improbable, that Arnobius, if he wrote his work when he was a catechumen, as Jerom in the above cited passage intimates, should speak of himself as a Christian, which he does, and that a catechumen should undertake the defence of a religion, of which he was at the same time learning the rudiments. Upon the whole, we may conclude, with Cave and others, that Arnobius became a convert to Christianity in the time of the Dioclesian persecution, and in consequence

of observing the fortitude with which the Christians endured their sufferings.

Arnobius's work "*Adversus Gentes*," or "*Against the Gentiles*," was probably written some time after the commencement of Diocletian's persecution, about the year 305 or 306; for he speaks in it of the afflictions endured by the Christians, as if they were actually suffering at the time of his writing. This work, which consists of seven books, is a valuable defence of Christianity. It shews that he was acquainted with the Jewish scriptures, and with the books of the New Testament; though he did not think fit to quote them expressly in writing against the Gentiles. It evinces the learning and piety of the author; and though it contains a mixture of Pagan errors with Christian doctrines, and though some passages are obscure, and the style, which is strong and nervous, is harsh and unpolished, it may be read with pleasure and advantage. It is much to the honour of this rhetorician, who possessed a very considerable share of the learning of Greece and Rome, that he embraced the Christian religion in a state of persecution, and that he employed his talents in its defence. His summary of the Christian religion is as follows: "We Christians are men that worship the great Lord of the universe, according to the direction of Jesus Christ. If you examine it, you will find nothing else in this religion: this is the sum of the whole affair: this is the scope and design of all our religious offices: to this supreme Lord we all bow down; him we worship with united prayers; to him we present holy, and innocent, and honourable requests, fit to be heard by him." The arguments, by which he proves the truth and divine original of Christianity, are deduced from its excellence; from the amiable and perfect character of its author; from the miracles of our Lord himself and those of his disciples; from the great effect of the Christian religion in softening the tempers and amending the manners of its votaries, and sowing the seeds and principles of benevolence, peace, and friendship among mankind, and in rescuing them from idolatry and a false worship; from the extensive progress and influence of the Christian doctrine, inasmuch that there were then Christians, in all countries, as Syria, Persia, Scythia, Africa, Spain, Gaul, &c.; from its having been embraced under the greatest difficulties and discouragements by men of all ranks, as by orators, grammarians, rhetoricians, lawyers, physicians, philosophers, and the greatest wits, as well as by men of low condition and inferior attainments; from the absurdity of supposing that so many people should on a sudden, without any good reason, change their former opinions and customs, and forsake the religion of their ancestors, and thus expose themselves to singular danger and severe suffering; and from the character and situation of the first witnesses of Christianity, who had no interest to induce them to falsify, and who, by withholding their testimony, might have avoided many sufferings, and lived quietly and comfortably among their neighbours: so that they must have been fully persuaded of the truth of the things which they related. By such solid and convincing arguments did this Christian rhetorician and apologist vindicate the truth of our holy religion more than 1500 years ago. He has likewise examined and well refuted some of the principal objections against Christianity. To the Christian religion he bears this honourable testimony: "It trusts to its own evidence, and stands firm upon its own foundations, whether any man embrace it, or not." Of the time and manner of Arnobius's death we have no account. Among his disciples we may reckon the learned Lactantius. His treatise "*Adversus Gentes*," was first printed at Rome, in fol. in 1542; at Basil, in 1546 and 1560; at Paris, in 1580; at Antwerp, with Canter's notes, in 1582, 8vo.; at Cologne, in 1604; at Leyden, with various notes, in 1651, 4to.; and

at the end of Cyprian's works, at Paris, in 1666. *Lactantius's Works*, vol. iv. p. 1—22. *Cave Hist. Lit. t. i. p. 161.* *Fabr. Bib. Lat. l. iv. c. 3. t. ii. p. 289.*

ARNOBIUS the Younger, or of Gaul, a Christian divine, lived about the year 461, and published brief Commentaries upon the 150 Psalms. He took part with the Pelagians in the disputes on predestination, against the followers of Augustine. His work was dedicated to Leontius, bishop of Arles, and Ruficius, bishop of Narbonne; and printed at Basil, in 1522; by Erasmus, at Cologne, in 1532; and by Laurentius de Barré, at Paris, in 1609; and in the *Bibl. Patrum* of Paris and Leyden. *Fabr. Bib. Lat. t. ii. p. 292.*

ARNODI, in *Antiquity*, the same with RHAPSODI. The word is compounded of *αρνος*, a lamb, which was their usual reward; and *ωδν*, song or singing.

ARNOLD of Brescia, in *Biography*, an Italian monk, was a native of Brescia, but in his youth travelled to France, where he became a disciple of Abelard, and probably imbibed some of his notions concerning the Trinity and the Sacraments, that were repugnant to the orthodox creed. On his return to Italy, he assumed the monastic habit, and taught some doctrines that were deemed heretical. His heresy, however, was chiefly of a political kind. Having perceived the discords and animosities, the calamities and disorders, that sprung from the overgrown opulence of the pontiffs and bishops, he was persuaded that the interest of the church and the happiness of nations in general required, that the clergy should be divested of all their worldly possessions, and of all their temporal rights and prerogatives. He, therefore, maintained publicly, that the treasures and revenues of popes, bishops, and monasteries, ought to be solemnly resigned and transferred to the supreme rulers of each state; and that nothing was to be left to the ministers of the gospel but a spiritual authority, and a subsistence drawn from tithes, and from the voluntary oblations and contributions of the people. This doctrine was eagerly embraced by the laity; and it was recommended by the extensive erudition, irreproachable character, singular authority, and vehement zeal of the proposer. Arnold was honoured as a patriot, and the inhabitants of the diocese of Brescia revolted against their bishop. The church was alarmed, and the reforming monk and his doctrine were condemned in the council of Lateran, A. D. 1139, by Innocent II. Arnold fled from persecution to Switzerland, and found an asylum at Zurich, where his doctrine was at first received with applause; but at length he was obliged to leave Switzerland, and after the death of Innocent II. in 1151, he returned to Italy, and set up the standard of ecclesiastical reform and of civil freedom at Rome. His bold harangues on the inalienable rights of men and Christians, roused the populace, and produced tumults and seditions, which terminated in the emancipation of the inferior clergy from the despotic yoke of the cardinals, and in a change of the civil government of the city. Arnold, in fact, possessed the chief power in Rome during ten years, while the Popes "either trembled in the Vatican, or wandered as exiles in the adjacent cities." On the accession of Adrian IV., Arnold and his followers were driven from Rome, and found protection at Otricoli in Tuscany. After the coronation of Frederic Barbarossa, pope Adrian preferred complaints to the emperor against Arnold; and he was seized by cardinal Gerard, brought to Rome, and condemned by the prefect of the city to suffer death. Accordingly, in 1155, he was burnt alive; or, as Mosheim says, crucified, and afterwards burnt; and his ashes were thrown into the Tiber, lest the people should worship them as sacred relics. Arnold was undoubtedly of an impetuous and turbulent spirit, and his proceedings were imprudent and violent: but one of his

biographers has not truly observed, "that he lived in an age which provoked reform." "With his atheism," says Gibbon, "his sect was dispersed," though "his memory still lived in the minds of the Romans." But Mosheim says, that "this violent reformer, in whose character and manners there were several things worthy of esteem, drew after him a great number of disciples, who derived from him the denomination of *Arnoldists*; and, in succeeding times, discovered the spirit and intrepidity of their leader, as often as any favourable opportunities of reforming the church were offered to their zeal." Mosheim's *Ecl. Hist.* vol. iii. p. 119. Gibbon's *Hist.* vol. xii. p. 291, &c.

ARNOLD, NICHOLAS, was born at Lesna in Poland, in 1618; and after having studied in several universities, and visited England in 1644, was chosen professor of divinity at Franeker in Friesland, in 1652; which post he occupied till his death in 1680. He is the author of several tracts against the Socinians; particularly, "A Refutation of the Catechism of the Socinians;" "A Commentary on the Epistle to the Hebrews;" and "Lux in Tenebris," printed at Leipzig in 1698, 8vo., and explaining passages adduced by the Socinians in favour of their system. *Gen. Dict.*

ARNOLD, GODFREY, a German divine, and celebrated ecclesiastical historian, was born at Annaberg, in the mountains of Misnia in Saxony, in 1666, and studied in the university of Wittenberg, where he acquired reputation by his personal conduct and literary improvement. In 1697, he was appointed professor of history at Gießen, but disapproving of the forms of admission required in the German universities, he resigned his office, and in 1698 retired to Quedlinburg. In 1700, he removed to Alstedt, where he became chaplain to the duchess dowager of Eisenach. Being obliged to leave this city, in 1705, he was invited to Brandenburg by the king of Prussia, and preferred to the office of pastor of the church of Werben; and in 1707, his Prussian majesty appointed him pastor and inspector of the churches of Perleberg, and afterwards historiographer to that court. Here he died in 1714. He was considered as the patriarch of a sect of German mystics, called "Pietists." Besides many other works, he wrote in German, "A History of the Church, and of Heresies;" "Historia Ecclesiastica et Hæretica," printed at Leipzig in 1700, 8vo. which incurred the reproach of his being a defender of heretics; and in Latin, "The History of Mystic Theology." The rigid Lutherans have treated him with peculiar severity; and Mosheim represents his history, "as the production of a violent spirit, and dictated by a vehement antipathy against the doctrines and institutions of the Lutheran church;" he acknowledges, however, that "he became at last a lover of truth, and a pattern of moderation." *Gen. Dict.* Mosheim's *Ecl. Hist.* vol. v. p. 325.

ARNOLD of *Hildesheim*, an historian of the thirteenth century, flourished under the emperors Philip and Otho IV. His "Continuation of the Chronicles of the Slavonians by Helmoldus," is chiefly valuable in its relation to Slavonia. It was published at Lubeck in 1659; and by Meibomius in the "Opuscula Historica," printed at Helmstadt in 1660. Dupin.

ARNOLD of *Villanova*. See ARNAUD.

ARNOLD, SAMUEL, Mus. D. an eminent musical composer, received his musical education at the Chapel Royal, St. James's, partly under Mr. Gates, and partly under his successor, Dr. Nares. He manifested early indications of those talents by the cultivation and exercise of which he acquired celebrity in the science to which he was devoted; and his application, as well as subsequent attainments, fully justified the expectations which were formed concerning him both by his parents and preceptors. It is hardly necessary to mention that little lively air, "If 'tis joy to wound a lover,"

which first excited popular attention, as it was soon succeeded by various compositions of a superior kind, which evinced the genius and taste, and established the professional reputation, of Mr. Arnold. About the year 1760, Mr. Beard, one of the managers of Covent Garden theatre, duly apprized of his extraordinary merit, introduced him to the notice of the public, as composer to that house; and in the year 1776, he was engaged by Mr. George Colman, to conduct the musical department at the theatre in the Haymarket. The chief musical pieces that were produced for many years at this theatre, were composed by Mr. Arnold. Having in early life enjoyed the benefit of Handel's direction and superintendance, and having derived from this sublime composer, a taste for sacred music, he diverted his attention from those lighter pieces in which he had gained reputation, to the composition of oratorios; and his performances of this kind served to augment the fame which he had already acquired. In the year 1767, he made choice of the "Cure of Saul," written by the late Rev. Dr. Brown, for the subject of his first effort in the higher style of musical composition. Such was his success, that this production is generally allowed to be the best of its kind since the time of Handel. It was generously presented by the author to the society instituted for decayed musicians and their families; and to that society it proved a very valuable acquisition. The approbation of the public encouraged Dr. Arnold to proceed; and the "Cure of Saul" was soon followed by the oratorios of "Abimelech, the Resurrection," and the "Prodigal Son;" which were performed during several successive Lenten at the theatre-royal in the Haymarket, and Covent-garden theatre, under his own management and direction. About the time of his composing the "Resurrection," he published in score, four sets of Vauxhall songs, most of which are singularly sweet in their melodies, and display in their accompaniments a thorough acquaintance with the characters and powers of the various instruments. Of all his oratorios, says an anonymous writer, the "Prodigal Son" reflects the greatest honour on his talents and judgment. So high, indeed, was the fame of this sacred drama, that in 1773 it was performed with his permission, at the instigation of the late lord North, as chancellor of the university of Oxford. In consequence of his ready compliance with the request made to him for this purpose, he was offered an honorary degree in the theatre, but he preferred obtaining it in the academical mode; and, agreeably to the statutes of the university, he received it in the school-room; where he performed, as an exercise, "Hughes's poem on the power of Music." On this occasion it is customary for the musical professor of the university to examine the exercise of the candidate; but Dr. Hayes, then professor of Oxford, returned Mr. Arnold's score unopened, saying to him, "Sir, it is quite unnecessary to scrutinize the exercise of the author of the Prodigal Son." In 1771, Mr. Arnold married a lady of good family and fortune; and about the same year he purchased "Marybone gardens," which were then a much frequented scene of gaiety and fashion. Here he provided for the entertainment of the public, several excellent burlettas, which were very favourably received.

On the death of the late Dr. Nares, in 1783, Dr. Arnold was appointed his successor as organist and composer to his majesty's chapel at St. James's; and at the grand performances of the commemoration of Handel, in Westminster abbey, the first of which took place in 1784, he was one of the subdirectors, and presented with a medal, which his majesty permitted the subdirectors always to wear, as a testimony of his approbation of their conduct on that occasion. In 1786, Dr. Arnold projected the plan of publishing

lishing an uniform edition of all the works of Handel; and he proceeded as far as the 118th number, enriching his edition with beautiful engravings. He also published, about the same time, four volumes of cathedral music, intended as a continuation of Dr. Boyce's well-known work; three of the volumes are in score for the voices, and one for the organ. In 1789, the Academy of Ancient Music chose Dr. Arnold for the director and manager of this institution; and he conducted it with honour to himself, and with satisfaction to the academicians and subscribers. In 1796, he succeeded Dr. Hayes, as conductor of the annual performances at St. Paul's for the feast of the fons of the clergy; and in this situation he uniformly maintained his distinguished character as a musical professor. Dr. Arnold closed his life, after a gradual decay, in the sixty-third year of his age, on the 22d of October, 1802; and his remains were interred, with every mark of respect, in Westminster abbey. He had five children, of whom two daughters and one son survived him. His son, Mr. Samuel Arnold, is the author of several musical dramas, which have been well received, and of a novel, entitled, "The Creole;" and he is now making rapid progress in the profession of a portrait painter.

Of the abilities of Dr. Arnold as a musical composer, it is needless to add any thing by way of eulogium; the public approbation has anticipated the tribute of applause which the biographer might be disposed to pay to his memory. His oratorios are not unworthy of the disciple of so great a master as Handel; and such was the versatility of his talents, that he not only acquitted himself with high credit in those solemn and august subjects which relate to our religious duties, but in those tender, playful, and humorous compositions which belong to the belt of our public amusements. The "Maid of the Mill," the "Agreeable Surprise," "Ince and Yarico," the "Surrender of Calais," the "Shipwreck," and "Peeping Tom," will continue to delight as long as a sense of harmony subsists. Arnold's "Shunamite Woman," one of his latest productions, possesses the genius of his earlier compositions, with that additional science which he had derived from study and experience.

It may be further mentioned to the honour of Dr. Arnold's character and memory, that the exercise of his professional talents was not confined either to the amusement of the public, or to his own private emolument. Many charitable institutions have derived great benefit from his voluntary and gratuitous assistance. Besides his professional excellencies, and the general benevolence of his disposition, Dr. Arnold possessed many qualities which entitled him to the esteem of those who knew him. "His genius and science," says an anonymous writer, who seems to have known him well, and to have justly appreciated his merit, "procured him a numerous circle of friends, and his social and amiable disposition constantly preserved them. His conversation was pleasant and unaffected; his heart was framed to feel for the distress of others; and his friendship was zealous and sincere."

ARNOLDSGRUN, in *Geography*, a town of Germany, in the circle of Upper Saxony, 4 miles east of Oelsnitz.

ARNOLDSTEIN, or ARLSTEIN, a town of Germany, in Carinthia, 7 miles S.W. of Willach.

ARNON, in *Ancient Geography*, a river, or rather torrent of Palestine, had its source among the mountains of Gilead, in Arabia, traversed the desert, running at first from north to south, and then from east to west, and discharged itself into the lake Asphaltites, or the Dead Sea. By its course it divided the Amorites from the Moabites. This river gave name to a canton of Palestine, situate along its banks, on the other side of Jordan.

ARNON, in *Geography*, a river of France, which runs into the Cher, near Vierzon.

ARNOSERIS, in *Botany*. See LAPSANA.

ARNOSORA, in *Geography*, a town of Italy, in the kingdom of Naples, and province of Principato Citra, 12 miles S.E. of Salerno.

ARNOTA, a town of Wallachia, 18 miles west of Kimmick.

ARNOTTA, in *Botany*, a name given by the peasants of Burgundy, and many other places, to certain roots which they frequently turn up, from five or six inches depth, in plowing the ground. They carefully collect these, and eat them, after roasting in the ashes, or otherwise; by which sort of cooking they acquire the taste of a chestnut, and are found to be a very wholesome and nourishing food. They are blackish on the outside, and white within, and are of the size of a small walnut. They are common in the north of Scotland, and called *arnots*. See BUNIUM.

ARNOTTO. See BIXA.

ARNOYA, in *Geography*, a river of Spain, which runs into the Minho, near Rivadavia, in Galicia.

ARNSBURGH, a town of Germany, in the circle of Upper Saxony, and country of Schwartzburgh Rudolstadt, 3 miles S. E. of Sonderhausen.

ARNSBURG, is also a town of Germany, in the circle and county of Solms-Braunfels, 3 miles N.E. of Muntzenberg, and 6 S.S.E. of Gießen.

ARNSFELD, a town of Germany, in the circle of Upper Saxony, and country of Erzgebirg, 5 miles south of Wolkenstein.

ARNSHAUG, a town of Germany, in the circle of Upper Saxony and district of Neustadt, 1 mile south of Neustadt.

ARNSHEIM, a town of Germany, in the circle of the Lower Rhine, and palatinate of the Rhine, 20 miles N.W. of Worms, and 14 S.W. of Mentz.

ARNSTADT, a town of Germany, in the circle of Upper Saxony, and country of Schwartzburg, on the Gera, 12 miles south of Erfurt. N. lat. 50° 40'. E. long. 11° 3'.

ARNSTEIN, a town of Germany, in Thuringia, and county of Mansfeld, between Mansfeld and Quedlinburg.

ARNSTORF, a town of Germany, in the archduchy of Austria, 6 miles west of Maultern.

ARNTSEE, a town of Germany, in the circle of Upper Saxony, and old mark of Brandenburg, on the side of a deep lake formed by an earthquake in the year 811.

ARNULPH, or ERNULPH, in *Biography*, bishop of Rochester in the reign of Henry I., was born at Beauvais in France, about the year 1040. Having studied at the abbey of Bec, under Lanfranc, archbishop of Canterbury, he came over to England at his solicitation; and passed through the gradations of prior of the monastery of Canterbury, and of abbot of Peterborough, to the see of Rochester. He held this see nine years, and died in 1124, at the age of 84 years. His mind was tinctured in a very considerable degree with the superstition of the age in which he lived. His works are a history of the church of Rochester, known by the title of "Textus Roffensis;" "An epistle on incestuous marriages;" and "An epistle containing answers to divers questions of Lambert, abbot of Munster, especially concerning the body and blood of our Lord." Biog. Brit.

ARNULPHIN, *Arnulphinus*, a coin of the value of a ducat and a half, current in some parts of France in the fifteenth century. Du-Cange.

ARNULPHUS, in *Biography*, an Egyptian by birth, and a magician by profession, lived in the reign of Marcus Antoninus, and deluded the Roman people by his pretended miracles

miracles and incantations. Dion the historian (l. 55.) relates, that in 174, he obtained, by the invocation of Mars and other gods of the air, a shower, which secured to the Roman army the victory in an engagement with the Germans.

ARNWAY, JOHN, a divine of the English church, was born of a good family in Shropshire, in 1601, educated at Oxford, and preferred to the rectories of Hodnot and Ightfield, in his native county, where he was distinguished by his learning and his charity. Upon the breaking out of the civil war, he manifested his loyalty by cloathing soldiers for the king's service, and preaching against rebellion. His zeal in the royal cause exposed him to a variety of misfortunes; his house was plundered, his estate sequestered, and his person imprisoned. After the king's death, he was released from prison, but compelled to leave the kingdom. He continued some time at the Hague; but the penury of his circumstances obliged him to avail himself of an offer to remove to Virginia, where he died in 1653. During his residence at the Hague, he published "The Tablet, or the moderation of Charles I. the martyr;" and "An alarm to the subjects of England."

ARO, in *Geography*, a river of Spain, which runs into the Mediterranean, 2 leagues south from Palamus in Catalonia.

AROANI, in *Ancient Geography*, mountains of Arcadia, north-west of Amilos, inhabited by the Phœnæates.

AROBÉ, by some spelt and pronounced *arrobe*; in Spanish, *arroba*; in the language of Peru, *arrou*: a weight used in Spain, Portugal, Goa, Brazil, and throughout all Spanish America. All these *arobes* are scarcely like each other but in name, being very different in weight, and in their proportion to the weights of other countries. The *arobe* of Madrid, and almost all over Spain, weighs twenty-five Spanish pounds.

AROCELIS, in *Ancient Geography*, a town of Spain, in the county of the Vasconi, north-west of Pompelo.

AROCHA, a river of Italy, in Brutium, the course of which is placed by M. D'Anville from north to south into the gulf of Squilace, between Semirus to the west and Targines to the east.

AROCHE, in *Geography*, a town of Spain, in the province of Andalusia, and country of Seville, on the frontiers of Estremadura, near a chain of mountains to which it gives name, extending along Spanish Estremadura to the frontiers of Portugal, forty-six miles north west of Seville.

AROE, in *Ancient Geography*, a town of Achaia, now called Patras.

AROER, a town of Palestine, on the north bank of the river Arnon, which had belonged to Sihon, king of the Amorites, upon the confines of the country of the Moabites. In the general distribution, it pertained to the tribe of Gad; Numb. xxxii. 34. This was probably the Aruer beyond Jordan, mentioned 1 Sam. xxx. 28. There were other towns of this name, so called from *Arroer* in Hebrew denoting heath, on account of their situation. Reland (t. i. p. 583.) thinks there was a city of this name near Rabbah of the Ammonites, otherwise called Philadelphia, and that it is the Aruer referred to in Josh. xiii. 25. Judg. iii. 33.

AROKHAGE, in *Geography*, the capital city of a country in Asia, to which it gives name, corresponding to the ancient Arachosia, and lying about 100 miles to the south of Candahar. N. lat. 31° 28'. E. lon. 65° 29'.

AROLEC, the name of a weight, in use in some parts of America, and in quantity equal to twenty-five pounds of our weight.

AROLSEN, in *Geography*, a town of Germany, in the circle of the Upper Rhine, and county of Waldeck, near

the river Aar, twenty-nine miles S. S. E. of Paderborne, and thirty-eight W. S. W. of Gottingen. N. lat. 51° 15'. E. lon. 8° 36'.

AROMA, in *Modern Chemical Language*, is applied to a certain subtle attenuated principle, in which the smell of all odoriferous bodies is supposed peculiarly to reside.

The term aroma has superseded that of *spiritus rector*, used by the older chemists down to the time of the modern alterations in chemical nomenclature; but the latter appellation has had a more extended sense; of which, as a part of chemical history, it may be proper to say a few words.

The ancient chemists, who united in a rare degree the opposite qualities of ardent imagination and patient inquiry, supposed that in every animal or vegetable there is a certain *aura*, or spirit peculiar to that single body, and so subtle as only to be perceived by the senses of smell and taste, or by particular effects upon the nervous system of the animal body. This *aura* then exhibits the proper character of that body, and from its great penetrability, exquisite subtlety, and extraordinary volatility, it was termed the *spiritus rector*, or presiding spirit.

If we consider the appropriate and often intense odour possessed by the fragrant or the fœtid vegetables, by musk and other animal juices; the *notus odor* whereby living animals distinguish each other, whereby the hound selects his game or recognizes his master; the narcotic aura of opium; and the sickening and often deleterious effluvia of several of the most formidable poisonous vegetables found in tropical regions; and lastly the subtle matter of contagion which is scarcely evident to any sense, and only known by its terrible effects: when all these circumstances are taken in view, we cannot consider it as a very wild conjecture to suppose something peculiar in the nature and essence of odour independent of all other natural bodies.

The ancient chemists, however, have not limited themselves to general conjecture, but have attempted to analyse the properties of this odorous principle, to give it "a local habitation and a name;" and in so doing they have been carried beyond the sober bounds of rational inquiry, and have advanced opinions which have long been consigned to merited oblivion.

We shall not attempt the unprofitable task of unravelling the mysteries of Paracelsus and other chemists of the same standard, in order to pursue this inquiry; but shall avail ourselves of the learning and admirable judgment of the excellent Boerhaave, to select just so much of these opinions as is necessary to shew how the idea of a *spiritus rector*, which is very general in its nature, has come to be confined almost exclusively to the aroma of vegetables. This spirit, as Boerhaave observes, was supposed "to be lodged by the Creator in a tenacious durable matter, not easily to be dispersed either by air, water, or fire, and called *oil*, by whose *lentor* it is as it were inviscated and prevented from flying off and deserting the body for whose direction it was appointed." This oil, however, is more volatile than the common gross oils, and contains the *spiritus rector* in a very sparing quantity.

The idea and name of *essence* and *quintessence* have a similar origin. The ancient chemists conceived that the four elementary substances of fire, air, earth, and water, contributed to the composition of bodies, and to this was added a *fifth essence* (*quinta essentia*) extremely small in quantity, but rich in efficacy, which by its own particular virtue imparted odour, colour, taste, and inherent characteristic qualities.

Having formed this theory, an apposite illustration was requisite,

requisite, and none appeared so much to the purpose as the products obtained by the distillation of some of the aromatic vegetables. The following example which Boerhaave gives is very clear and intelligible: suppose cinnamon "which is an aromatic of a most fragrant smell and pleasant taste; on distilling a pound of this with boiling water, there will arise a milky odorous savoury liquor, to the bottom of which settles a little ruddy fragrant oil, strong of the virtue of the cinnamon, and such the first liquor was. After separating the liquors, let the remaining bark be distilled with a second water, upon this will arise a limpid watery juice of an acid taste, a faint smell, and affording none of the marks of cinnamon, &c." The inference which the author would draw from this is obvious; the *spiritus rectior*, or distinguishing characteristic of the cinnamon, resides in the water and oil, the products of the first distillation; and the remaining substance of the bark consists only of the common vegetable principles, is inert in its nature, inodorous, insipid, and incapable of producing those effects upon the nervous system of living animals which it exhibited before distillation. Again, if the distilled water separated from the oil be exposed to the air, the whole place will smell of cinnamon, and the water will after a while become insipid, and lose all its aromatic virtue, yet without suffering a greater loss of weight than common water would have done under similar circumstances; and also if the fragrant oil be exposed to the air, it will gradually lose its odour, but will remain nearly of the original weight: and from these facts it is inferred, that the *spiritus rectior* is extremely small in quantity, when separated from those substances with which it is naturally combined.

The example of the aromatic vegetables corresponding so well in these important particulars with the theory of a peculiar aroma or essential spirit, we ought not to be surprised to find the opinion of Paracelsus and the older chemists, divested of its mysticism and extravagance, supported by such respectable authorities as Boerhaave, Macquer, Beaumé, and many other excellent chemists; and the processes for obtaining the *spiritus rectior* have long formed a regular part of the practice of chemistry.

As the extraction of the aroma of vegetables makes an interesting branch of vegetable chemistry, we shall give the process and the remarks of the celebrated Beaumé, whose long experience as a pharmaceutical chemist entitles him to the highest attention.

"To prepare the *spiritus rectior* of thyme, take any quantity of this plant fresh gathered and flowering, put it in an alembic, and moisten it with a very small quantity of water (which addition however is not requisite where a succulent plant is employed). Distil with a water bath in a very gentle heat, not equal to that of boiling water, and a perfectly clear odorous water will arise. When about half an ounce of this liquor to the proportion of a pound of the plant has distilled over, stop the operation, and this liquor is the *spiritus rectior* of thyme. If however the process be continued till the plants be perfectly dry, a larger quantity of liquor comes over, and this is called *essential water of thyme*.

In like manner may be prepared the *spiritus rectior* of all other aromatic or acrid plants. This preparation is not used however in medicine, probably from being too expensive, and from not differing very materially in properties from the distilled essential water, which is yielded in much larger quantities, and prepared by the addition of more water to the plants before distillation.

If the liquid *spiritus rectior* be kept even in well closed bottles, it becomes mouldy and viscid in a year or two, but

the same effect takes place much more rapidly when exposed to the air.

The quantity of aroma furnished by the several odorous plants differs greatly: those that have a high and penetrating scent, but yield little essential oil in distillation, such as the tuberose, jasmine, jonquil, &c. are said to give the greatest proportion of *spiritus rectior*, but in so volatile a state that it cannot be procured in union with water in the usual way. The intermede of alcohol or fixed oil, is required in this case.

If the aroma be considered as a separate principle, there can be no plea for denying its production when the pungent acrid vegetables are submitted to distillation. Thus, mustard-seed, distilled with the precautions above mentioned, yields an intensely pungent aqueous liquid, in which the sensible qualities of mustard are certainly very much condensed, and it would be called by the older chemists the *spiritus rectior* of mustard.

We shall treat more fully of these processes under the articles *Distilled Waters of Pharmacy*, *Distilled Spirits*, and *Oil Essential*.

Even the inodorous plants, such as lettuce or borragé, when distilled with care by a very gentle heat, may be made to yield a liquor in which an odour peculiar to each plant may be selected, and this may be termed the aroma of these vegetables.

By the process of *cobobation*, or re-distilling the first liquor over fresh materials, the aroma appears to be condensed in a much smaller bulk of watery menstruum, and at the same time the liquor becomes supersaturated with the aromatic essential oil of the plant. This is shewn in a striking manner in the preparation of that exquisite oriental perfume, the *Attar of Roses*. That most speedily fatal of all known poisons, the *LAUREL Water*, is another example of the same; the aroma of the laurel has a sudden and violent operation on the nervous system of living animals; now if laurel leaves are distilled in a gentle heat with a small quantity of water, the first product is a clear liquor holding all the aroma in solution, smelling powerfully of the plant, and possessed of a poisonous quality, whilst the remaining leaves are insipid and inert; but if the same liquor be again distilled with fresh leaves, it receives all the aroma of this second quantity, becomes proportionably stronger, and acts with more energy on the living body; and thus by repeating the process, so much of the aroma is condensed into a small bulk of water, that the peculiar qualities of laurel may be exhibited in the most striking manner, unincumbered with the common vegetable materials of which the leaf itself is composed.

The extraction of the aroma of plants is the basis of the art of perfumery, an art in which there is much room for the exercise of skill and ingenuity, and to the senses at least it is one of the most agreeable branches of technical chemistry. We have mentioned that the aroma of some exquisitely scented flowers, such as the tuberose, jasmine, or honey-suckle, though most potent to the senses, is of so extremely volatile a nature that it cannot be prepared by common distillation with water; and if it does reside in an essential oil, the quantity of that oil is so minute as not to be extracted in the usual processes. The perfumers have therefore adopted a very ingenious method of fixing the aroma in expressed oils without the assistance of any but the gentlest heat. The oil which is used is either oil of ben or the purest olive oil, both of which are entirely scentless. The process is the following: the flowers whose aroma is to be extracted, the jasmine flowers for example, are thickly spread upon flakes of wool, previously soaked

in the fixed oil, then are inclosed in tin boxes, and suffered to remain till the flowers begin to decay and lose their texture and colour. They are then removed, fresh flowers are added, and the maceration repeated till the fixed oil becomes richly impregnated with the jasmine scent. The wool is then pressed, and the fragrant oil separated from the flowers is put in closely-stopped bottles, and sold under the name of *essence* of jasmine, or whatever other flower was employed. Care is taken during the operation to pick the flowers carefully. These essences therefore consist of a fixed oil saturated with the aroma of the plant, and if these essences are digested in pure alcohol, the oil remains insoluble in this liquid, but yields to it the aroma; and thus the scent alone is transferred to the spirit. By this method a spirituous water is prepared for the toilette, scented with these delicate and exquisite perfumes.

The chemical nature of aroma may be considered as still unknown to us; that is to say, we are still ignorant whether the powerful scent of a plant resides in some substance of so delicate a nature as to have eluded our research, or whether it is only an inherent quality in some known part of the plant (and if this is the case, probably it is the essential oil), which by being volatilized in the air is able to reach our olfactory organs.

Most chemical writers have brought the instance of the inflammable gas, which, in sultry evenings, is often found to hover round the fraxinella when in full blow, as an example of aroma in the purest form in which it is ever procured. This would certainly be an interesting subject for chemical examination, if we could flatter ourselves that the means which chemistry affords were at all equal to the task; but what chemist could yet flatter himself with the hopes of discovering the nature and composition of scented air, or finding a means of separating the odorous principle of the syringa that sickens with its fragrance, from the breeze that conveys it to his senses; or of distinguishing by chemical tests the inconceivably minute portion of the aroma of musk that loads with its oppressive scent an extensive chamber, from the dreadfully active effluvia which spreads disease and pestilence?

The most powerful argument in favour of the peculiar nature of aroma distinct from that of essential oil, seems to be the circumstance which we have just mentioned, namely, that the quantity of aroma emitted by several of the most fragrant flowers, and which is indicated by the extent of atmosphere saturated as it were with perfume, is not in the least degree commensurate with the quantity of essential oil which any process of art can extract from them. We shall forbear, however, to enter further into this inquiry, but as we may surely infer from the examples of effluvia, of galvanism, and of contagion, that the organs of sensation in the living animal are more delicate analyzers than the tests and re-agents of the chemists, they certainly ought to be considered as at least equally conclusive.

A very few words will be sufficient on the subject of the different species of aroma which have been supposed to be detected by various chemists. So many of the parts and products of living vegetables are in a certain degree volatile in an atmosphere of moderate warmth, that the aroma which is equally volatile may readily combine with all or any of them. The gas of the fraxinella has been already mentioned as one example of gaseous aroma; the pungent vapour of the cruciform plants has been found by late experiments to contain sulphurated hydrogen, which probably afflicts the volatilization of the aroma, and furnishes another example of the gaseous. The watery aromas and the essential or oily aromas are almost indistinguishably intermixed in

the products of the distillation of plants, in the old methods of obtaining the spiritus rector which have been already described. All the pure essential oils also contain aroma as a characteristic ingredient, though the intensity of this principle varies not only in different oils, but in the same species at different seasons; and, as we have mentioned, is almost entirely lost by long exposure to the air; but whether this change takes place by an actual loss of the aromatic principle, or by some internal chemical change, has not yet been ascertained. Lastly, various odorous plants yield an aromatic liquor which is slightly acid; the nature of this acid is not sufficiently known, but it has been suspected to be similar to the benzoic. Some further notice will be taken of this subject under the other articles belonging to vegetable matter, and that of *VEGETABLE ANALYSIS*.

Aroma is by some particularly applied to denote myrrh.

AROMA Germanicum, is a denomination given by Platerus to elecampane. Some writers give the title *aroma Germanicum* to juniper berries, on account of the great effect they are in among that people, for their spicy, warm qualities; in which respect they are by many preferred to ginger itself. *Aroma philosphorum* is used by some for saffron. Others give the appellation of *aroma philosphorum* to Paracelsus's aropl.

AROMATA, in *Ancient Geography*, a mountain of Asia Minor, in Lydia. Strabo.

AROMATA, Gardesau, a promontory and town of Ethiopia. It was, according to Ptolemy, the most eastern point of Africa. Here terminates the kingdom of Adel and the Barbaria of the Periplus; and here the coast of Ajam or Azaria commences.

AROMATIC, AROMATICUS, is understood of a drug, plant, or the like, which yields a brisk fragrant smell, and a warm spicy taste.

The word is formed of *αρωμα*, which is compounded of *αρι*, *very*, and *οδμη* or *οσμα*, *smell*.

AROMATIC Plants, in *Gardening*, are such as possess a fragrant aromatic flavour, combined with a strong odoriferous smell in many of the kinds. Many of these plants are proper to the kitchen-garden, being employed as savoury sweet herbs for various culinary purposes; and some of them are likewise employed for medicinal and domestic uses. The principal sorts necessary to be cultivated in the garden, as aromatics, are the following, being species of several different genera. They consist, according to the authors of the General Dictionary of Gardening, of under-shrubby and herbaceous perennials of many years duration, and of annuals and biennials of only one or two years continuance, which of course require to be raised every year or two from seed.

These are of the first kind: *thymus*, or thyme; *salvia*, or sage; *faturega*, or winter favory; *origanum*, or pot marjoram; *origanum*, or winter sweet marjoram; *hyssopus*, or hyssop; *ruta*, or rue; *rosmarinus*, or rosemary; *lavendula*, or lavender. The above have abiding tops, and continue furnished with leaves, in most cases, all the year round. But the following are herbaceous, and renew their stalks, and some of the other parts, every Spring and summer: *mentha*, or mint; *mentha*, or penny-royal; *melissa*, or baum; *anethum*, or fennel; *tanacetum*, or tansy; *artemisia*, or tarragon; *anthemis*, or chamomile; *mentha*, or peppermint; *ligusticum*, or lovage.

These are of the latter kind: *origanum*, or sweet marjoram; *fatureja*, or summer favory; *scandix*, or chervil; *anethum*, or dill; *calendula*, or marygold; *ocimum*, or basil; *apium*, or parsley; biennial, *carum*, or caraway; *pimpinella*, or anise; *angelica*, angelica, biennial-perennial.

Among the perennial kinds, the principal culinary or pot-herb

pot-herb aromatics are thyme, sage, winter savory, marjoram, mint, penny-royal, tansey, tarragon, and fennel. The others are not used as kitchen or culinary aromatics, but mostly for domestic occasions, as hyssop, balm, chamomile flowers, lovage, rue, and rosemary. And for simple medicinal purposes in a family; the peppermint for distilling; also the lovage and penny-royal occasionally for the same purpose; and the lavender for its flowers, both to distil for lavender water, and to lay among clothes to give them a sweet and agreeable scent; some sorts of sage, common mint, and balm, are also used occasionally by way of tea; and young green mint and tarragon often in fallads. But among the annual and biennial aromatics, the sweet marjoram, summer savory, chervil, dill, marigold, basil, parsley, and coriander, are the principal sorts to cultivate for culinary uses, &c. The caraway and anise are cultivated in some instances for seeds, both to use in the kitchen, and for distilling; also sometimes the coriander seed, but more generally the two former; and the angelica, principally for the young tender shoots of its stalks which are used in confectionary, to candy as a vegetable sweetmeat, and the seeds for medicine; some of these annual aromatics are also in some cases used to give flavour to fallads, as chervil, coriander, basil, &c.; the young leaves being used in small quantities to mix with some principal fallad herbs. See the description of each under its respective genus.

All of them, except the basil, are mostly of hardy growth, so as to succeed in any common soil and situation. The perennial sorts continue several years in the same plants, among which some are durable, both in root and top, and remain green for use all the year, as thyme, sage, winter-savory, marjoram, hyssop, rue, rosemary, &c.: the others are perennial only in root, and annual in stalk, as the mints, penny-royal, tansey, tarragon, fennel, chamomile, &c. and furnish their respective produce for use only in the spring, summer, and autumn.

All the perennial aromatics are easily raised, either by slips, off-sets, parting the roots, or by seed, and may be planted in spring, summer, or autumn, in beds or borders at from six to ten or twelve inches asunder; but the annual and biennial kinds, continuing in the former only one season, and in the latter only till the second year, must be raised every year or two, from seed in the spring, in any compartment of common earth in the open ground, except the basil, which being tender, must be raised in hot-beds, in order to be transplanted in May or June; most of the others generally remain where sown in the natural ground, but may be occasionally transplanted, the sweet marjoram and summer-savory in June, &c. and likewise the angelica, as being of large growth, in summer. As some of these only afford their useful parts at particular seasons, as mint, balm, penny-royal, tarragon, sweet marjoram, &c., they should be cut and preserved at such times for winter use, as about July and August. But for the marigold, chamomile flowers, and those of lavender, as well as sage-tops, marjoram, hyssop, and such like, which often stand the winter, autumn may be better, as they will then be ready in case of a severe winter. Parsley generally furnishes proper supplies of green leaves all the year; basil and dill only in summer; chervil and coriander, principally in summer and autumn, of the spring and summer sowings; or if some of each be also sown in August, they will continue green all winter, but the coriander will require a little protection in that season; and the caraway, anise, and angelica continue only in summer and autumn.

In regard to the general culture of these plants, the perennial sorts being planted in beds or borders, continue there,

as has been observed, several years, and only require to be kept clean from weeds in the summer and autumn, and to be cut down and the decayed stalks removed at the latter season; and in spring to give the beds, &c. a neat dressing by clearing off all weeds and litter, and then loosening the ground a little between the plants; and in some close running kinds, as mint, &c. to spread some earth thinly over the general surface; and when any particular sorts appear in a declining state, to make a fresh plantation in the proper season: as to the annual sorts, they only require to be kept clear from weeds during their growth and continuance, and that fresh supplies be raised every year from seed.

AROMATIC Confection. See CONFECTIO Aromatica.

AROMATIC Powder. See PULVIS Aromaticus.

AROMATIC Spirit. See AMMONIACAL Preparations.

AROMATIC Tincture. See TINCTURA Aromatica.

AROMATICUS CALAMUS. See CALAMUS.

AROMATICS, in Pharmacy. The Materia Medica contains a number of vegetable substances which possess a fragrant penetrating smell, a strong pungent taste, and a considerable stimulating power on the system in general. These are called *aromatics*, and their characteristic properties appear to depend chiefly, if not entirely, on an essential oil, which, when extracted from the vegetable, exhibits all its aromatic power in a very concentrated form.

The aromatic property is found in combination with a variety of other vegetable principles, many of which modify its effects on the constitution. The simple operation of the aromatic principle appears to be stimulant in a considerable degree; but the effect of several of the essential oils differs so entirely from that produced by common stimulants, that we cannot include these substances under a single class without very great limitation.

As the class of *aromatici* is distinguished entirely by certain properties of smell and taste, in each of these circumstances it approaches by insensible gradations upon the limits of other classes.

The aromatic or fragrant smell of nutmeg, peppermint, or rosemary, would be denied by none; but the strongly odorous or graveolent scent of wormwood or rue would be classed by many organs with the fetid; the odorous principle, however, in each of these substances appears to reside in the essential oil. In taste, likewise, the aromatic, when powerful, proceeds to the acid, and all the essential aromatic oils, when uncombined, produce very acrid, and sometimes even caustic or corrosive effects on the tongue, so as to destroy the surface of the part which they touch, even by a very short application. The vegetables, or parts of vegetables, that contain the aromatic principle, are chiefly the following.

1. *The Spices*, those exquisite productions of the tropical regions, which, besides being highly useful in medicine, form the most grateful condiments for the table. The power of habit in accustoming the constitution to excessive quantities of the hottest stimulants, and to substances that produce powerful local effects, is in few instances more striking than in the manner in which these valuable vegetable productions are employed by the inhabitants of the countries to which they are indigenous. In many of the spice-bearing plants various parts of the same vegetable are richly impregnated with the aromatic principle, as in the instance of the mace and nutmeg, productions of the same plant, or the leaves and bark of the cinnamon.

2. *The aromatic barks and woods*, such as the canella, orange peel, sassafras, and many trees of the fir tribe. In many of these the aromatic is combined with the astringent and the bitter principles, and this union is often of singular

service in the formidable bowel complaints so common in tropical climates.

3. *The fragrant herbaceous plants*, such as the lavender, mint, thyme, &c. Among this very extensive class of aromatic vegetables are included all the fragrant pot-herbs employed for culinary purposes in climates not blessed with the spices that require a burning sun. From this class also are procured several of the perfumes and other agreeable scents for the toilette.

4. *The resinous aromatics*, such as the Mecca balsam, myrrh, capivi balsam, frankincense, Cnio turpentine, and many others. The strong smelling resins and balsams, when submitted to distillation, yield a very large quantity of essential oil in which their characteristic properties of smell and taste reside, whilst the residue is hard, brittle, almost without odour, and insipid. The graveolent and foetid gums have the same character.

The aromatics are used very largely in pharmacy in a great number of forms and combinations, both on account of their proper stimulating cordial properties, and as powerful auxiliaries in a variety of instances. Their strong and agreeable smell and taste render them peculiarly proper for concealing and correcting those of the more nauseous and unpalatable medicines. As the essential oil to which the aromatics appear to owe their properties is soluble largely in spirit of wine, and partially in water, they are very conveniently employed under the forms of *Distilled SPIRITS* and *Distilled WATERS*.

AROMATICA, in *Ornithology*, the Gmelinian name of the species of COLUMBA, or pigeon, called by Brisson, *Columba viridis Amboinensis*; le pigeon verd d'Amboine, by Buffon; and aromatic pigeon, by Latham; from the latter of which Gmelin adopts the name *aromatica*. It is, as the synonyms imply, a native of the island of Amboyna; and is about ten inches and a half in length, or the size of the common turtle. The general colour is olive-green; back bay or chestnut; on the wing a double bar of black, edged with pale yellow; quill feathers black, with yellowish margins. Gmel. &c. The bill of this bird is greenish; the upper part of the head is grey, darkest behind; the sides, throat, neck, breast, belly, rump, upper tail coverts, and tail, olive-green, but inclining to yellow on the neck and breast; the under parts of the tail black at the base, and dirty white at the end; the under tail coverts dirty yellowish white; wing coverts, like the back, chestnut; and the legs and claws either grey or red; for Dr. Latham describes them of a grey colour, and in Les Planches elumines of Buffon, they are painted red.

AROMAZ, in *Geography*, a town of France, in the department of Jura, and chief place of a canton in the district of Orgelet, fourteen miles south of Orgelet.

ARON, PETER, in *Biography*, a voluminous writer of music in the sixteenth century, was a native of Florence, of the order of Jerusalem, and a canon of Rimini. He appears to have studied music as a profession under the patronage of Leo X., in whose pontificate he was admitted into the papal chapel at Rome. His most considerable work, in which there is little that is new, was intitled, "Toiscanello della Musica," and first printed at Venice in 1523, and with additions in 1539. This is divided into two books: the first containing a penagyric on music, an account of its inventors, definitions of terms, &c.; the second, an impartial account of the genera of the ancients, a decalogue or ten precepts concerning counterpoint, an explanation of proper terms, and directions for dividing the monochord, upon the principles of Guido Aretino. Burney's Hist. of Mus. vol. iii.

ARON, in *Geography*, a town of Persia, in the province of Irak, two leagues from Caehan.

ARONA, a small town of Italy, in the Milanese, belonging to Piedmont; seated on the side of a hill, near the west coast of lake Maggiore, the environs of which are exceedingly fertile, and supply wines that are much valued. Above it rises a ruined castle: two promontories project into the lake at this spot; the eastern is crowned with the castle of Anghiera, and gives name to this valuable province, which, in 1397, was erected into a county by the emperor Wenceslaus, and has since been transferred to the king of Sardinia. In doubling the promontory of Arona, the lake again enlarges, and forms a bay.

ARONABABAD, a town of Persia, in the province of Irak, twenty leagues south of Ispahan.

ARONCHES, a town of Portugal, in the province of Alentejo, walled and defended by a castle, and containing about 600 inhabitants; 95 miles east of Lisbon. N. lat. 38° 58'. W. long. 6° 14'.

ARONDE, a river of France, which runs into the Oise, opposite to Compeigne.

ARONDE, in *Fortification*. See DOVE-TAIL, and QUEUE d'Aronde.

ARONDELLE, and HARONDELLE, in *Ornithology*, the French synonymous names of the STERNA tribe; terns or sea-swallowers of English writers. See STERNA. The term *Aronde* is also applied in a general manner to the species of TRIGLA described by Linnæus under the name of *volitans*. This is one of the flying-fishes of our naturalists; and in the classification of Natural History by Lacépède, forms a new genus, which he called *Dactyloptere*. See TRIGLA *Volitans*.

ARONIA, in *Botany*. See ORONTIUM.

ARO *Orchis*. See GALENGAL.

AROO, in *Geography*, a town of the Russian empire, in the Ukraine, on the river Oca, eighty leagues north of Moscow. N. lat. 51° 48'. E. long. 38° 13'.

AROOSI, a territory of Abyssinia, being the southernmost division of Maitsha, on the west side of the Nile, inhabited by the Abyssinians, a kindred of the Agow. It is bounded on the north by the river Kelti, and on the south by the Assar; the Aroossi running through the middle of that district. This little territory is described by Bruce (vol. iii. p. 560), as by far the most pleasant which he had seen in Abyssinia, and perhaps, he says, it is equal to any thing which the east can produce. The whole is finely shaded with the acacia vera, or Egyptian thorn, that yields the Gum Arabic, which seldom rises above fifteen or sixteen feet high, and then spreads wide at the top, so that the branches of different trees touch each other, and under a vertical sun afford a cool, delicious shade. Below these trees the ground is chiefly covered with lupines; and wild oats grow up spontaneously to a prodigious height and size, and have, when ripe, the appearance of canes. The inhabitants make no use of the grain, though the taste of the meal, when made into cakes, is very good. The soil of this country is a fine black mould, like that of our gardens. Aroossi is finely watered with small streams.

AROPH, a term used by Paracelsus, to denote a medicine endued with a power of breaking or dissolving the stone in the human body. In which sense, *aroph* amounts to the same with *litontripctic*. Van Helmont assures us, that he was possessed of the *aroph*; and from his account, it seems to have been a preparation of saffron and rye-bread, digested with spirit of wine, in a horse-dung heat, and at length distilled. Vide Cnoeffel. in Ephem. Acad. N. C. dec. 1. an. 4. obs. 109.

AROPH

AROPH *Paracelsi*, is also a name given to a kind of chemical flowers, elegantly prepared by sublimation, from equal quantities of *lapis hematitis* and *sul ammoniac*; said to be of great efficacy in quartan agues, the *plica polonica*, and hypochondriac diseases. This is also called *aroma phisophoruna*.

AROPH is also used to denote **MANDRAGORA**.

AROSBAY, in *Geography*, a town of the East Indies, on the coast of the island of Madura, near Java. S. lat. 9° 30'. E. long. 114° 30'.

AROSIA, *Western*. See **WISTEROS**.

AROSIA, *Eastern*, or *Ostra Aros*, the ancient name of Upsala.

AROSIS, a river of Persia, which bounded Persia on the west, and separated that province from Susiana.

AROUANS, one of the islands which are near the mouth of the river of the Amazons in South America.

AROU-HARISI, in *Zoology*, according to Thüvenot, the name of the Rhinoceros in the East Indies.

AROUKORTEKEN, in *Geography*, a country of Tartary, near the great wall of China.

AROURA, a Grecian measure, of fifty feet.

AROURA was more frequently used for a square measure, the half of the plethron. The Egyptian *aroura* was the square of a hundred cubits. *Arbuth. tab. 9.*

AROW, ISLANDS OF, in *Geography*, a cluster of small islands in the Indian ocean, situate north-east of Timorland, and nearly south of the coast of New Guinea. South lat. from 5° to 7°. E. long. 137°.

AROY, a river of South America, flowing from the lake Cassipe in the province of Paria, and discharging itself into a river of this name.

ARPAD, **ARADUS**, or *Rouwadde*, in *Ancient Geography*, an island situate on the coast of Syria. See **ARADUS** and **ROUWADDE**.

ARPAGIUS, or rather **HARPAGIUS**, formed from ἀρπαζει, *rapiō*, I snatch, in some ancient inscriptions, signifies a person who died in the cradle, at least in early youth. The Romans made no funerals for their arpagii.—They neither burnt their bodies, nor made tombs, monuments, or epitaphs for them, which occasioned Juvenal to say,

“ —Terra clauditur infans,
Et minor igne rogi.”

In after-times it became the custom to burn such as had lived to the age of forty days, and had cut any teeth; though these they also called ἀρπακτοι, or ἀρπαγμανοι, q. d. *rapti, ravisibet*. The usage seems to have been borrowed from the Greeks; among whom, Eustathius assures us, it was the custom never to bury their children either by night or full day, but at the first appearance of the morning; and that they did not call their departure by the name of death, but by a softer appellation, ἡμερα ἀρπαγη; importing that they were ravished by Aurora, or taken away to her embraces.

ARPAIA, in *Geography*, a town or village of Italy, in the kingdom of Naples; and Principato Ultra, six miles west-south-west of Benevento; supposed to be the ancient *Caudium*.

ARPAION, or **ARPAJOU**, a town of France, in the department of the Seine and Oise, and chief place of a canton, in the district of Corbeil; 16 miles south of Paris. The place contains 2,093, and the canton 13,826 inhabitants: the territory includes 147½ kilometres and 19 communes.

ARPA-SOU, a river of Persia, between Erivan and Tauris.

ARPEGGIO, **ARPEGGIATURA**, in *Music*, is playing the sounds of a chord in a rapid manner upwards and downwards, after each other, instead of striking them together. In doing this on keyed instruments, the fingers of each hand

must be kept on to preserve each sound, till its turn comes for the key to be struck again. The word arpeggio is derived from *Arpa*, the harp; upon which instrument the sounds of a chord are usually struck in succession, by beginning at the lowest. There are as many kinds of arpeggio as sounds in a chord, or changes in their succession. The violin family having but four strings, and the viol family six, can only arpeggio four or six sounds; and from the convexity of the bridges of these instruments, there is no other way of playing chords with a bow, but in arpeggio.

The abbé Feyton says very truly, that the harmonies arising from a single string or sound, when first discovered, gave birth to arpeggio; or perhaps long before that, it was suggested by the section of the canon, or division of the monochord. The musical reader will find the examples of several kinds of arpeggio in the *Music Plates*.

ARPENBURG, in *Geography*, a town of Germany, in the circle of Upper Saxony, and old mark of Brandenburg, nine miles south of Saltzwedel.

ARPENT. See **ACRE**.

ARPHAXAD, in *Scripture History*, the third son of Shem, and father of Salah, was born in the second year after the flood, A. M. 1658, and died A. M. 2096, aged 438 years. Gen. xi. 12. &c. He was distinguished above the rest of his brethren, by having the patriarchal line continued through him. Arphaxad is placed by some in Arrapachitis, a province of Syria, towards the north part of the country; but others fix him, with his family, in Chaldæa, where we find his descendants till the time of Abraham. Some, who consider as one and the same person Arphaxad and Cainan, who is inserted between him and Salah in the Septuagint version, suppose him to be the founder of the monarchy of China. Some Mahometan authors make Arphaxad both a prophet and an apostle, and lodge the chief sovereignty over the nations of the world in his descendants.

ARPI, in *Ancient Geography*, a town of Italy, in Apulia, between Luceria and Sipontum. It was anciently called *Argos Hippium*, and afterwards Argyrippa, the capital of a kingdom founded by Diomedes after the siege of Troy; in the time of Livy it was large and populous, and furnished Hannibal with 3000 armed men. It is now in ruins, about fourteen miles west of Manfredonia, in the province of Capitanata, and kingdom of Naples.

ARPII, a people placed by Ptolemy in Lower Mysia. They inhabited the coast at the northern mouth of the Ister, at the entrance of the Bosphorus. Their capital was called **ARPIIS**.

ARPINAS, **JOSEPH CÆSAR D'**, in *Biography*, commonly called *Josquin*, a famous painter, was born at the castle of Arpinas in Naples, in 1560. After receiving some instruction from his father, who was an artist, he was sent, at the age of thirteen, to Rome, where he waited upon the painters in the Vatican, and at intervals sketched figures on the pilasters, which astonished the other artists. Under the patronage of Gregory XIII. he enjoyed the means of further improvement, by being employed first in the ornaments of the Vatican, and afterwards in history painting; and his bold and free manner was much admired. At Naples he painted the cupola of the Chartreux; and returning to Rome in 1560, he began to paint the great hall of the capitol in fresco. Clement VIII. distinguished him by his protection, and made him a knight of the order of Christ; and in a journey to France with cardinal Aldobrandini, in 1600, he was created knight of the order of St. Michael, by Henry IV. Arpinas, notwithstanding the honours that were conferred upon him, was of a discontented and querulous temper; and fell out both with Caravaggio his rival, and with Anibal Caraccio.

Carachio. He declined a duel with the former, because he was not a knight; and wishing to measure swords with the latter, Carachio presented his pencil, and said to him, "With this I defy you." He died at Rome, at the advanced age of eighty years. Notwithstanding the fire and elevation which distinguished some of his compositions, his colouring was cold, and his attitudes stiff and forced, so that his name now scarcely exists, in the list of great artists. Although his school was much frequented, he seems to have left no eminent disciples. His best performances are the pieces of Roman history in the capitol; and one of his capital works is his "Battle between the Romans and the Sabines." Arpinus also engraved in aqua fortis. *Nouv. Dict. Hist.*

ARPINO, in *Geography*, a town of Italy, in the kingdom of Naples, and country of Lavora, ten miles north of Casano. This was the ancient *Arpinum*, situate to the left of the river Liris, and south of Sora, and famous for being the birth-place of C. Marius and Cicero, two citizens, who, as Pompey said in a public speech, each in his turn preserved Rome from ruin. It was a city of the Samnites, which, upon its submission to Rome, acquired the freedom of the city, and was inserted into the Cornelian tribe. The territory of Arpinum was rude and mountainous, and Cicero (*Ad Attic. ii. 11.*) applies to it Homer's description of Ithaca, *Odyss. ix. 27*:

— τῆρχ' ἀλλ' ἀγαθὴ κρηταίφος, &c.

" 'Tis rough indeed, yet breeds a generous race."

Cicero's family seat was about three miles from the town, in a situation extremely pleasant, and well adapted to the nature of the climate. It was surrounded with groves and shady walks, leading from the house to a river, called *Fibrenus*, which was divided into two equal streams, by a little island, covered with trees, and a portico, contrived both for study and exercise, whither Cicero used to retire, when he had any particular work on his hands. "The clearness and rapidity of the stream, murmuring through a rocky channel; the shade and verdure of its banks, planted with tall poplars; the remarkable coldness of the water; and above all, its falling into a cascade into the nobler river Liris, a little below the island," give us the idea of a most beautiful scene, as Cicero himself has described it. The house, Cicero says, was small and humble in his grandfather's time, according to the ancient frugality, like the Sabine farm of old Curius; but his father beautified and enlarged it into a spacious and handsome habitation. It is now possessed by a convent of monks, and called "the villa of St. Dominic." The villa of Marius was about twelve miles distant from Arpino; and on the spot now stands the only convent of the austere order of La Trappe in Italy. Its present name is "Casa Mari."

ARPIS. See **ARPII**.

ARPONIUM, in *Ancient Geography*, a town of Italy, in Magna Græcia, which, as Diodorus Siculus informs us, was pillaged by the Brutians, during the war of the slaves.

ARQUA, or **ARQUATO**, in *Geography*, a village of Italy, in the P. duan territory, about three miles from Bataglia, famous for having been the residence and burial-place of Petrarch. N. lat. 45° 43'. E. long. 11° 43'. There are two other places of this name; one in the March of Ancona, on the frontiers of Abruzzo, and another in the duchy of Milan, situate on the Scrivia.

ARQUE, a town of France, in the department of the Straits of Calais, and chief place of a canton in the district of St. Omer, half a league south-east of St. Omer.

ARQUEBUSADE WATER. See **AQUA Vulneraria**.

ARQUEBUSS. See **HARQUEBUSS**.

ARQUENON, in *Geography*, a river of France, which passes by Jugon, in the department of the north coasts, and

runs into the English channel about 13 miles north of that town.

ARQUES, a town of France, in the department of the Lower Seine, and chief place of a canton, in the district of Dieppe, one league south-east of Dieppe. It is seated on a river of the same name, which runs into the English channel near Dieppe.

ARQUES is also a town of France, in the department of the Aude, and chief place of a canton, in the district of Limoux, three leagues south-east of Limoux. The place contains 488 and the canton 5743 inhabitants: the territory includes 275 kilometres and 10 communes.

ARRA, in *Ancient Geography*, now called *Maara*, a town of Asia, in Syria, which was formerly large and well-peopled, but is now reduced to a small place under the government of Aleppo; the territory of which is very fertile in grain and good fruit.

ARRA-BIDA, in *Geography*, a high mountain of Portugal, in Alentejo, on the frontiers of Algarva, forming part of the Sierra or mountain of Calderaon, and seeming to be a branch or continuation of the Spanish chain to the north of Madrid, called by some the mountains of Idubeda, which enters Portugal near the town of Guarda, and pursues its former course to the south-west. It is chiefly calcareous, and affords beautiful marble.

ARRACAN, **ARACAN**, or **ARRAKAN**, a maritime country of the vast peninsula which separates the gulf of Bengal from the Chinese sea, borders on the south-east province of British India, is separated on the east from the Birman empire by a range of lofty mountains called Anoupecc, and bounded on the north by Meckley, or the country of the Muggaloos, the Cassy of major Rennell, on the south by the flat lands of Pegu, and on the west by the bay of Bengal. This country is called by the Bengal Hindoos, who have settled in it, *Rossam*, whence, probably, Rennell has derived the name *Rossham* which he has given to it. The Mahometans settled in Arracan call it *Rovingaw*; and by the Persians it is denominated *Rekan*. The proper natives of the country, who use a dialect of the Birmah language, call their country *Yee-Kein*; and by the people of Pegu, the inhabitants are named *Takain*. From Islamabad, N. lat. 22° 20'. E. long. 91° 55'. the coasts of Arracan and Pegu take a south-south-east course to Cape Negrais, the extreme point of Pegu to the south-west, in N. lat. 16° and E. long. 94° 27'. Pennant (*Outlines of the Globe*, vol. iii.) says, that the kingdom of Arracan stretches along the coast to an extent of 200 miles; others make its length above 500 miles, and its breadth from 20 to 200 miles. Its topography, however, is still obscure. According to Symes (*Embassy to Ava*, vol. i. p. 243, &c.), Arracan, or *Yee-Kein*, stretches south-south-east from the river Naff, the boundary that divides it from the territories of the India company, as far as Cape Negrais, where the ancient Pegu empire commenced. The range of lofty mountains called Anoupecc-toumiou, or the great western hilly country, nearly encircles it. From the quarter of Bassien and Negrais, Arracan can only be invaded by water, through the many rivers that intersect the country adjacent to the sea. From the side of Chittagong, entrance into Arracan must be effected by a march along the sea-beach, which is interrupted by several channels, that chiefly owe their waters to the action of the tide. Arracan thus displays a great space of coast, very disproportionate to the internal extent. Cheduba and Ramree, called by the Birmans *Magou Kioun* and *Yamgee Kioun*, are extensive and highly cultivated islands, which, with Arracan and Sandoway, form four distinct provinces, and comprehend the whole of the Arracan empire. The ancient government

government of Arracan has never been so completely conquered as to acknowledge vassalage to a foreign prince. It experienced, however, in the two last centuries, the usual convulsions to which all states, and those of the eastern world in particular, are liable. The Moguls on the west, and the Peguers on the east, had, at different periods, carried their arms into the heart of the country. The Portuguese, sometimes as allies, and at other times as open enemies, gained an establishment in Arracan, which decayed only with the general ruin of their interests in Asia. Arracan, however, though often exhausted, was never wholly consumed; it always rose from its own ashes, a free and independent nation.

In 1783, Mind-ragee, who siled the throne of the Birman empire, subdued the country, and annexed it to the conquests of his father Alompra, consisting of Pegu, and the coast of Siam, as far as the port of Merghi, in N. lat. 12° 20'. In this conquest, the booty most highly valued was an image of Gaudma, the Boodh of the Hindoos, made of burnished brass. There were also five images of Rakufs, the demon of the Hindoos, of the same metal, and of gigantic stature; these were accounted valuable, as they were guardians to the sanctuary of the idol. All the spoils taken at Arracan were of brass, among which was a large gun, thirty feet long, two and a half in diameter at the muzzle, and the calibre ten inches; it was mounted on a low truck carriage, supported by six wheels, and had several shot of hewn stone fitted to the calibre. The surrender of Cheduba, Ramree, and the Broken Isles, followed the conquest of Arracan. Many of the Mughs, or ancient inhabitants of Arracan, so called from being subjects of the Great Mogo, preferred flight to servitude, and took refuge in the Dumbuck hills, on the borders of the province of Chittagong, and in the deep forests and jungles that skirt the frontier, where they formed themselves into independent tribes of robbers, that have since created infinite vexation to the Birmanis, and to this day commit merciless depredations on the persons and property of their conquerors. Many settled in the districts of Dacca and Chittagong, under the protection of the British flag; whilst others accepted the oath of allegiance, and bowed their necks to slavery, rather than abandon their country and their household god, to whom the sectaries of Budhoo are much attached. Arracan, with its dependencies, was afterwards constituted a province of the Birman empire; and a Maywoon, or viceroy, appointed to govern it. The reduction of Arracan was completed in the short space of a few months. The country is fertile, abounding with well-watered meadows and pasture lands; the soil luxuriant; the mountains are green through the year, though in winter, that is from August to October, the weather is for the most part wet and stormy; and the contiguous islands uncommonly fruitful. The population is estimated at between two and three millions. It produces great quantities of rice, cocoa-nuts, bananas, oranges, and many other kinds of excellent fruit. The rice is produced in such abundance, that it might be improved by proper policy into a lucrative branch of commerce. The trade of Arracan has never been very considerable; it is confined to salt, bees' wax, elephants' teeth, and rice. Articles of foreign importation are introduced into other parts of the Birman empire by way of Arracan, and carried over the mountains on the heads of coolies, or labourers: such as European broad-cloth, hard-ware, coarse Bengal muslins, Cossambuzar silk handkerchiefs, china ware, and glass; cocoa-nuts are also brought from the Nicobar islands, and bear a very high price; and merchants carry down silver lace, precious stones, and some other articles, to no great amount. Pos-

session of Arracan and the adjacent islands was a very desirable acquisition to the Birmanis, as it afforded protection to their boats, which, navigating in the north-west monsoon through the channel and along the coast, make an annual voyage from Bassien, Rangoon, and Martaban, to Chittagong and Calcutta, where they dispose of the produce of their countries, and in return bring back cloth and commodities of India. Elephants and buffaloes are very numerous, and are used instead of horses. The forests are infested with tigers. The natives of Arracan do not differ from those of China and Siam, except in their colour, which is somewhat blacker. They are fond of large flat foreheads, and, in order to obtain them, they apply a plate of lead to the foreheads of their children immediately after their birth. They have large open nostrils, small sparkling eyes, and ears so long that they rest upon their shoulders. They eat without disgust mice, rats, serpents, and putrescent fish. Their women are tolerably fair, and their ears equally long with those of the men. Buffon's Nat. Hist. vol. iii. p. 81. See *BIRMAN Empire*.

ARRACAN, the capital of the above country, is seated most singularly in a valley, surrounded with vast and craggy mountains; and these are assisted by art, so as to be made the most substantial fortifications. The entrances are cut through the solid rock, as are also the gates of the city. The precipitous face of the mountains serves for walls; besides which, it has a citadel and other artificial defences. The city is said to be fifteen miles in circumference, and to contain 160,000 inhabitants. The royal palace is very magnificent, and highly adorned and enriched with works of massy gold. Pennant.

ARRACAN is also the name of a river, which divides the above country by several canals, and discharges itself into the bay of Bengal, about fifty miles below the capital. Its banks are bounded by woods and plantations, that are animated, says Pennant, by the gambols of the monkey tribe, or the gay flights of numbers of peacocks. Dr. Buchanan says (Symes's Embassy to Ava, vol. ii. p. 413), that the Arracan river is not so considerable as has been supposed, but takes its rise in hills at no great distance to the north. He adds, that the river coming from Thibet, which is supposed to be that of Arracan, is in fact the Keenduem, or great western branch of the Ava river. Pennant (Outlines of the Globe, vol. iii.) says, that this river is the Tocofannæ of Ptolemy, and that it is faintly traced beyond the capital. A few miles below Tellakee, at the western foot, says Symes (Emb. to Ava, vol. i. p. 244.), the river, till then a streamlet that rises in the hills, becomes navigable from the influx of the sea; in two tides a boat reaches the fort of Arracan. From the fort to the sea, the river expands into a noble sheet of water, well adapted for trade and the reception of shipping.

ARRACHEE, in *Heraldry*, is understood of representations of plants forcibly torn up by the roots, with their roots hanging at them.

In this sense, *arrachee* amounts to the same with what is otherwise called *eradicate*, or *erased*. Nisb. Her.

ARRACIFES, *Cape of*, in *Geography*, is situated on the coast of the Cafres in Africa, about sixty leagues from the Cape of Good Hope.

ARRACIFFE, a port-town of Brazil, in the captainship of Pernambuco, esteemed the strongest in Brazil. The port consists of a suburb, in which are some large houses, and repositories for stores: and it is built upon a narrow passage, with a cattle to defend the entrance. Nevertheless, James Lancaster, with seven English vessels, made himself master of the town and castle in 1595, and obtained immense plunder:

plunder: but since that time the Portuguese have rendered it almost inaccessible to enemies. S. lat. 8° 20'. W. long. 36° 10'.

ARRACK. See ARAC.

ARRACOURT, in *Geog. vly*, a town of France, in the department of the Murte, and chief place of a canton, in the district of Chateau Salins, five miles south of Chateau Salins.

ARRADEZ, a town of Africa, in the kingdom of Tunis, famous for its baths. See RHADES.

ARRADON, a town of France, in the department of Morbihan, and chief place of a canton, in the district of Vannes, three miles south-west of Vannes.

ARRAGON, derived either by corruption from *Taraconenfis*, the name of the Roman province of which it formed a part, or from the little stream called Arragon, which falls from the Pyrenées into the Ebro, is a province of Spain, bounded on the north by the Pyrenean mountains, on the west by Navarre and the two Castiles, on the south by Valencia, and on the east by part of Valencia and Catalonia. Its extent from north to south is about 210 miles, and in breadth about 120. The country is, in general, mountainous, dry and sandy, badly cultivated, and thinly peopled; but it is interspersed with delightful fertile vallies, which are well watered, and produce corn, wine, oil, flax, fruits of different sorts, and some saffron. Arragon breeds a great number of sheep and cattle; its rivers abound with fish, and its forests with game. The mountains are said to have formerly yielded gold, silver, and other metals; but they now afford, probably on account of the indolence of the inhabitants, little besides iron. The principal rivers, besides the Ebro, which traverses the province from north-west to south-east, are the Cinca, anciently Cinga, the Gallego, Isuela, Xalon, and Xiloca. The metropolis is Saragossa; and the other chief towns are Balbastro, Jaca, Huesca, Calatayd, Daroca, and Aleanitz. The principal inhabitants of this country, in ancient times, were the Celtiberians, and they have been always deemed active, hardy, enterprising, courageous, and fond of liberty, but proud and positive, and bigotted in their religion. Marcellus, after a short war, taxed them at 600 talents of gold. When they fell under the dominion of the Goths, they frequently revolted, and made valiant and repeated struggles for the preservation of their liberty. On the irruption of the Moors, these people retired into their inaccessible mountains for the enjoyment of their freedom and independence; and there they erected, for their own security, a form of government, to which they submitted by common consent. Arragon was first erected into a kingdom by Don Sancho the Great, king of Navarre, who died in the year 1035, in favour of his son, Don Ramiro. He was succeeded by his son, Don Sancho Ramirez, who added to his own dominions part of Navarre, and obtained several advantages against the Moors of Saragossa and Huesca; but was at length mortally wounded at the siege of the latter of these places, in 1094. The kingdom devolved on his son, Don Pedro, who, after defeating the Moors in the plain of Alcaraz, took possession of Huesca, A. D. 1096. He was succeeded in the year 1104 by his brother, Don Alfonso, who, by the display of his martial virtues, obtained the surname of "the Warrior." Having reduced Tudela, and obtained a signal victory over the Moors, he laid siege to Saragossa, and compelled it to capitulate, after a long and obstinate defence, A. D. 1118. He dispossessed the Moors of several other strong places, and defeated them in several battles; but in his attempt to reduce Fraga, the capital of a Moorish government, he provoked an engagement, in which he was overpowered with great slaughter; and this defeat affected him so much that

within eight days he died of grief. After his death the monarchies of Arragon and Navarre were separated; and Don Ramiro, brother to the late king, ascended the throne of the former kingdom. But in 1137, after a short reign, he abdicated the government in favour of Don Raymond, count of Barcelona, to whom he married his daughter and heiress, Petronilla. Don Raymond dying in Piedmont, in 1162, was succeeded by his eldest son, Don Alfonso, who enjoyed the sovereignty of Catalonia, in conjunction with the realm of Arragon. Alfonso having, in 1166, confirmed the liberties of the clergy and nobility in an assembly of the states at Saragossa, soon after, viz. in 1168, collected a powerful army, commenced a war with the Moors, and drove them out of all the places which they held in that territory, which is now called Arragon. Alfonso closed a reign, rendered illustrious by many military exploits, at Perpignan, in 1196; and the crown of Arragon devolved on his son, Don Pedro II.; who, in 1203, paid a visit to the pope at Rome, acknowledged himself a vassal to the holy see, and continued to pay an annual tribute of 250 double pistoles. His premature death, in an action with the papal troops before Muret, A. D. 1213, was followed by great confusion and tumult, both in Arragon and Catalonia; but at length his son, Don Jayme, was proclaimed and acknowledged as his successor. This prince, being threatened by the pope with excommunication for his vices, assumed the cross, and actually embarked at Barcelona for the Holy Land, A. D. 1268; but he was driven back by a tempest, and returned to his own dominions. After a defeat by the rebellious Moors of Valencia, he fell sick, resigned the crown, took the habit of a Cistercian monk, and penitently bewailing the ill example he had given to his family and subjects, expired in 1276; upon which the crown descended to his son, Don Pedro III. Pedro, having subdued the Moors of Valencia, and composed the tumults of Catalonia, engaged in an expedition against the isle of Sicily, which he conducted with great spirit and success, and in consequence of which he was, with universal applause, proclaimed king of Sicily. The pope, Martin IV. who took part with his competitor, Charles, excommunicated Don Pedro, and proceeded to give away his kingdom, as a fief of the holy see, to Charles de Valois, son of king Philip the Hardy, and to publish a crusade against the deposed king of Arragon. In 1284, the king of France took the cross, and assembled a very large army in order to seize and secure the possession. During this contest, Don Pedro died, in 1285, and left the crown of Arragon to his son Don Alfonso, and that of Sicily to his second son, Don Jayme. Alfonso, having entered into a treaty for the marriage of princess Eleanor, daughter of Edward I. of England, was suddenly taken ill during the magnificent preparations that were made for this purpose at Barcelona, and died in 1291. His brother, Don Jayme II. succeeded him; and after having conciliated the affection of his subjects by many popular acts, he died much regretted, A. D. 1326. His son and successor, Alfonso IV., pursued the conduct of his father, and closed his life and reign, in the year 1336, much beloved and lamented; and on account of the gentleness of his administration, he was surnamed "The Kind." His son, Don Pedro IV. commenced his reign with all the anxieties of royalty; but protracted it to a very advanced period, and died in the year 1386, with the character of having been in many respects the wisest, and in many more the worst king that ever sat upon the throne; and of having been better obeyed, and much less beloved, than any of his predecessors. He was succeeded by his son, Don Juan, whose death, in 1395, occasioned great confusion in the

the kingdom of Arragon. After the death of his successor, Don Martin, duke of Montalban, there occurred an interregnum, occasioned by disputes about the succession of the crown. The titles of several claimants were examined by nine judges appointed for this purpose; and at length the majority determined in favour of Don Ferdinand of Castile, who was the son of Donna Leonora, the eldest sister of the two last kings; and the rest also acquiesced. Accordingly, he was proclaimed king, A.D. 1412, and in 1413 solemnly crowned at Saragossa. At his death, in 1416, he was succeeded by his son, Don Alonso V., who, in 1443, became sole and absolute master of the kingdom of Naples; and was afterwards esteemed the great arbiter of peace and war through all Italy. He died in 1468, respected as the greatest prince that ever sat upon the throne of Arragon (See ALPHONSO V.). Don Juan II. succeeded to his hereditary dominions; and after a reign of 21 years, Arragon, with its dependent dominions, was united to the crown of CASTILE, A.D. 1479, under his son Don Ferdinand, who confirmed the laws and privileges of the kingdom of Arragon, in Saragossa, Barcelona, and Valencia. *Mod. Un. Hist.* vol. xvii. p. 83—268.

ARRAGONITE, in *Mineralogy*, *Arragon spar*, Kirwan. *Arragonit*, Werner. The colour of this mineral is either greyish, or greenish white, or pale mountain green; in the center it is often of a violet blue, or brownish red. It occurs only crystallized; and its varieties may be referred to the following forms.

1. A perfect equiangular, six-sided prism (*Arragonite prismatique* of Haüy).
2. A six-sided prism, two opposite faces of which are the largest, and correspond with the two sides of a dihedral summit that terminates the prism (*Arragonite cuneolaire* of Haüy).
3. A rounded mass, deeply striated (*Arragonite cylindroïde* of Haüy).

The crystals are small, or of moderate size, often grouped in crosses; their faces are very rarely even and smooth, being generally striated longitudinally, and sometimes concave.

The lustre is vitreous, and varies from little shining to very brilliant.

The fracture is lamellar, but often so indeterminate as to pass into the imperfect conchoidal. The inside of the crystals often presents distinct, minute, wedge-shaped concretions, which give that fibrous appearance by which this mineral is characterized.

It is almost semi-transparent, and possesses a double refraction like calcareous spar; is considerably hard, brittle, easily broken: *sp. gr.* 2.94.

Arragonite is entirely soluble with effervescence in nitrous or muriatic acid. Before the blowpipe, it splits and crackles, and at length is calcined like calcareous spar; when pulverized and sprinkled on a hot coal, it gives out a reddish phosphorescent light.

This mineral was named by the celebrated Werner, because it was first discovered in Spain, on the borders of Arragon and Valencia, where it is imbedded in lamellar and fibrous gypsum; it has since been found in the Pyrenæes, and at Leogang in the country of Salzburg, in a shattery argillaceous rock, or in quartz, accompanied by calcareous spar and pyrites.

The crystals belonging to the first variety, present occasionally a singular kind of composition, being found to contain internally a second prism, the axis of which crosses that of the former nearly at right angles, and is engaged in its very substance in such a manner as to produce no alteration in its external figure. This arrangement appears in the

fracture of the crystal, at the crossings of the striæ; or in a kind of mosaic, representing four triangles united round a common point, upon making a vertical section of the whole prism; of these triangles, two opposite ones are nearly colourless, and the other two are violet.

The repeated analyses of Klaproth, Vauquelin, and Thenard, have discovered nothing in the arragonite but lime and carbonic acid, in the same proportions as calcareous spar; yet the crystalline structure of these two substances is wholly dissimilar. The primitive form of calcareous spar is a rhomboid; the arragonite is divisible only in two directions; the inclination also of the joints in the latter is about 116°, but in the former only 104° 28'; a circumstance worthy of special attention, as it is the only instance known in which the geometrical and chemical analyses of crystallized bodies are at variance. *Mineralogie de Brochant*, v. i. p. 576. *Haüy Traité*, &c. v. iv. p. 337.

ARRAI, in *Geography*, a town of Japan, in the province of Tootomi or Jentsju.

ARRAIATIO *peditum*, the ranging or arraying of foot-soldiers.

ARRAIGN, or ARAIGN, in *Law*, signifies to set a thing in order, or in its place.

It is derived from the French *arraisonner*, i. e. “ad rationem ponere, to call a man to answer in form of law;” which comes from the barbarous Latin *adrationare*, i. e. *placitare*.—In which sense, to arraign a criminal, is *ponere eum ad rationem*. Thus he is said to arraign a writ of novel disseisin, who prepares and fits it for trial before the justices of the circuit. To arraign the assize, is to cause the demandant to be called to make the plaint, and to set the cause in such order as the tenant may be forced to answer to it. A prisoner is also said to be *arraigned*, when he is indicted, and called to the bar of the court, to answer the matter charged upon him in the indictment.

But no man is properly arraigned, except at the suit of the king, upon an indictment found against him, or other record, wherewith he is to be charged: and this arraignment requires, that the prisoner appears to be tried, and holds up his hand at the bar, for the certainty of the person, and makes a sufficient plea to the indictment. 1 *Inst.* 262, 263. The prisoner is to hold up his hand only in treason and felony; but this is only a ceremony: if he own that he is the person, it is sufficient without it.

It was laid down in the ancient books, that the prisoner, though under an indictment of the highest nature, must be brought to the bar without irons, or any manner of shackles or bonds; unless there be an evident danger of an escape, and then he may be secured with irons. But in *Layer's case*, A.D. 1722, a difference was taken between the time of arraignment, and the time of trial; and accordingly, the prisoner stood at the bar in chains during the time of arraignment. Prisoners are now generally tried in their irons, because taking them off is usually attended with great pain and trouble. When the prisoner is at the bar, and confesses that he is the person named, the indictment is to be read to him distinctly in the English tongue, that he may fully understand his charge. After which it is to be demanded of him, whether he be guilty of the crime, of which he stands indicted, or not guilty. By the old common law, the accessory could not be arraigned, till the principal was attainted, unless he chose it, and waived the benefit of the law; in which case, principal and accessory might, and may still, be arraigned, and plead, and also be tried together. But if the principal had never been indicted at all, had stood mute, had challenged above 35 jurors peremptorily, had claimed the benefit of clergy, had obtained a pardon, or had

had died before attainder, the accessory, in any of these cases, could not be arraigned; for "non confitit," whether any felony was committed or not till the principal was attained; and it might happen, that the accessory should be convicted one day, and the principal acquitted the next, which would be absurd. The law still continues, that the accessory shall not be tried, so long as the principal remains to be tried hereafter. But by stat 1 Ann c. 9. if the principal be once convicted, and before attainder, i. e. before he receives judgment of death or outlawry, he is delivered by pardon, the benefit of clergy, or otherwise, or if the principal stands mute, or challenges peremptorily above the legal number of jurors, so as never to be convicted at all; in any of these cases, in which no subsequent trial can be had of the principal, the accessory may be proceeded against as if the principal felon had been attained; for there is no danger of future contradiction. And upon the trial of the accessory, as well after as before the conviction of the principal, it seems to be the better opinion, and founded on the true spirit of justice (Foster, 355), that the accessory is at liberty (if he can) to controvert the guilt of his supposed principal, and to prove him innocent of the charge, as well in point of fact, as in point of law.

When a criminal is arraigned, he either stands *mute*, or *confesses* the fact; which circumstances may be called "incidents" to the arraignment; or else he *pleads* to the indictment. For the law, as it formerly existed, and now subsists with regard to standing mute, see MUTE. Upon the prisoner's simple and plain *confession* of the indictment, the court hath nothing to do but to award judgment; but it is usually very backward in receiving and recording such confession, out of tenderness to the life of the subject; and will generally advise the prisoner to retract it, and plead to the indictment. For another species of confession, see APPROVEMENT. For the plea of the prisoner, or defensive matter alleged by him on his arraignment, if he does not confess, or stand mute, see PLEA. For the solemnity of the arraignment, and trial of a prisoner, see Dalt. c. 185. p. 515. An attainder of high treason has been reversed for the omission of an arraignment. In an action of slander, for calling one thief, the defendant justifies that the plaintiff stole goods, and issue is taken thereon; if it be found for the defendant, in B. R. and for felony in the same county where the court sits, or before justices of assize, &c. he shall be forthwith arraigned upon this verdict of 12 men as on an indictment. 2 Hale's Hist. P. C. 151.

AR-RAKIN, in *Geography*, a small town of Asia, in Arabia Petrea, in the district of Al-Bkaa, probably the ancient Petra, the capital of a country called Sela in the bible, and Adriana by the emperor Adrian. Most of the houses are cut in a rock, whence the name, *rakin* denoting to cut, and *ra* a town.

ARRAN, a province of Persia, situated between Georgia, Aiderbeitzan, and Shirwan, and surrounded by mountains.

ARRAN, or *Arr-inn*, i. e. the island of mountains, one of the Scottish islands, situated in the Firth of Clyde, between the main land of Ayrshire and the coast of Kintyre, and forming part of the county of Bute. This island is about twenty-three miles long and nine broad, and contains about 7000 inhabitants, who chiefly occupy the parts near the coasts: the interior mountainous part being for the greatest part uninhabited. The chief place is the village of Ranza; and the parishes are two, viz. Kilbride and Killmore. The principal mountains are Goatfell, Goatfield, Gaolbheinn, or the mountain of the winds, nearly 3000 feet high, composed of immense piles of moorstone, clothed with lichens and mosses, and inhabited by eagles and ptarmigans;

Buin-bharrin, or the sharp-pointed; Ceum-na-Caillich, or the steep of the Carline or old hag; and Grianan-Athol, inferior to none in ruggedness. The lakes are loch Jorfa, where salmon come to spawn; loch Tana; loch Na-Jura, on the top of a high hill; loch Machrai and loch Knoe-zacharbai, abounding with large eels. The chief rivers are Abhan-mhor, Moioa-mhor, Slondrai-machrei, and Jorfa, of which the two last are remarkable for abundance of salmon. From the mineralogy of this island, published by Mr. Jamefon in 1798, 8vo., it appears to be a mountainous region; the southern parts, however, present low and cultivated grounds: the base is chiefly sand-stone and granite, the former traversed by veins of basalt. Near Lamash, and also near to Brodie wood, there is an extensive vein of pitchstone, of a greenish colour, and the black also occurs. There is also granitic, composed of quartz, felspar, and hornblende; micaceous schistus likewise abounds; but there is little coal. The bays of this island are those of Lamash, Brodie, and Ranza, where ships of any burthen may safely ride in all weathers; and it is surrounded with fisheries of various denominations. The climate is severe; nevertheless in summer the air is salubrious, and many invalids resort hither on that account, and for the purpose of drinking the whey of goats' milk. The men are strong, tall, and well made; they speak the Erse language; but have laid aside the ancient habit. Their diet consists chiefly of potatoes and meal, with an occasional addition, in winter, of the dried flesh of sheep or goats. Their farms are leased for nineteen years; and each farm is commonly possessed by a number of small tenants, who are jointly and severally bound for payment of the rent. The arable land is portioned out by lot, and to each portion or ridge the occupier annexes his mark; and this species of farm is called "run-rig," i. e. ridge. All the tenants join in ploughing. The pasture and moor-land annexed to each farm are common to all the occupiers. All the farms are open, and inclosures are unknown. The produce of the island is chiefly oats and barley; its live stock milk-cows and other cattle, horses, sheep, and goats. Hogs have been lately introduced. The herring-fishery is beneficial. The exports are black cattle, horses, and barley, herring nets, and thread formed of the flax that is sown here. The women manufacture the wool for the clothing of their families, dress and spin the flax, set the potatoes, make butter, some of which is exported, and cheese for their own use. The inhabitants are sober, religious, and industrious; in summer they prepare peat for fuel; before and after harvest, they are employed in the herring fishery; during winter the men make herring nets, and the women spin their linen and woollen yarn. In spring they till their grounds; and in autumn they collect and burn fern for making kelp. Among the quadrupeds of this island, such as otters, wild cats, shrew mice, rabbits, and bats, flags, which were formerly numerous, are now reduced to few; and among the several species of birds, such as eagles, hooded crows, wild pigeons, black game, grouse, ptarmigans, itares, daws, green plovers and curlews, are partridges, which now inhabit the island, and prove the advancement of agriculture. The government of the island is the same with that of the county of Bute; and besides, justice is administered at the baron's baily court, who may fine as high as 20s. decide in matters of property not exceeding 40s. imprison for a month, and put delinquents in the stocks for three hours, but only in the day time. From the immense cairns, monumental stones, and many relics of Druidism, this island must have been very considerable in ancient times. Little is known concerning this island, till the time of Magnus, the Barefooted, the Norwegian victor, who probably included

Arran in his conquests of Kintyre. Acho, one of his successors, laid claim to it 1263, together with Bute and the Cumrays, and having subdued the first, was defeated in a bloody engagement at the village of Largs, facing the island of Bute, and obliged, after the loss of 16,000 men, to give up his conquests. Arran was the property of the clan. Robert Bruce, with several of his followers, found an asylum here in their distress. About the year 1334, this island seems to have formed part of the estate of Robert Stewart, afterwards Robert II. In 1356, it was ravaged by Donald, earl of Ross, and lord of the isles. It was still the property of James II. and was given by his successor James III. as a portion to his sister, who married Thomas lord Boyd, created earl of Arran. On the disgrace of that family, the countess was divorced; and both the lady and island were bestowed on sir James Hamilton, in whose family, with the exception of a few farms, it now continues. Pennant's Journey through Scotland, vol. ii. 172. 184.

ARRAN, or *Arrin*, the name of two clusters of islands near the west coast of Ireland, the largest of each of which is called Arranmore, i. e. the great Arran. The north isles of Arran are near Donegal, in W. long. 8° 25'. N. lat. 55°. and in one of them a town called Rutland has been built for the herring fishery. The south isles are on the coast of Galway, between W. long. 9° 30', and 9° 43'. N. lat. between 53° 1', and 53° 7' 30". They are three in number, and shelter the entrance of Galway bay. They are very fruitful, and produce a small kind of oats without any husk. They are also remarkable for the stoutest calves in the county. Mr. Young mentions that they are set for 2000l. per ann. In Arranmore several Irish saints were buried, and it is still held in veneration by the neighbouring peasantry. In this island also, on a high cliff over the sea, is Dun Aengus, a circle of monstrous stones without cement, capable of containing 200 cows. This is supposed to have been one of the Mandræ or inclosures of monastic buildings, common in the seventh and eighth centuries. Dr. Beaufort's Memoir. Young's Collect. Ledwiche's Antiquities of Ireland.

ARRANGEMENT, or RANGEMENT, the disposition of the parts of a whole, in a certain order. The modern philosophy shews us, that the diversity of colours of bodies depends entirely on the situation and arrangement of the parts, which reflect the light differently; the diversity of tastes and smells on the different arrangement of the pores, which render them differently sensible; and the general diversity of bodies on the different arrangement of their parts. The happy arrangement of words makes one of the greatest beauties of discourse.

ARRANGEMENTS, *Philosophical*, a title given by the ingenious J. Harris, esq. to an excellent commentary on the *Categories* of Aristotle: it is just as happy a simplification of *Logic*, as his *Hermes* is of *Grammar*. Both these valuable books, so well calculated to convey sensible and precise notions of logic and grammar, might be very usefully and compendiously exhibited in the forms of a logical and grammatical tree, after the manner of genealogical tables.

ARRAPACHITIS, in *Ancient Geography*, the most northern province of Assyria, according to the distribution of Ptolemy. It was watered by the Gyndas. The towns are unknown.

ARRAS, in *Geography*, a city of France, and capital of the department of the fraits of Calais, situate on the Scarp; before the revolution, the metropolis of the province of Artois. It was taken by the French king Louis XIII.; and annexed to France, in 1640, by the peace of the Pyrenées. Being seated on a mountain, it is surrounded by quarries, which supply stone for building. It is divided

by a strong wall, a large fosse, and the brook Chinchron, into two parts, called the town and the city, each of which is well fortified. It has four gates, and a strong citadel with five bastions. The great square, in which is kept the principal market, is full of fine buildings, surrounded with piazzas. The lesser market contains the town-house, the tower of which is covered with a crown, with a brazen lion on the top serving for a vane; in the middle of this market is the chapel of the Holy Candie, reported to have been brought by the Virgin Mary above 600 years ago for cure of the diseased inhabitants, and kept in a silver shrine. The cathedral church of Notre Dame is a large Gothic building, with a high tower, in which is a fine clock, embellished with small figures in bronze, representing the passion of Jesus Christ. In this church is a silver shrine, enriched with pearls and diamonds, and containing a sort of wool called manna, which, report says, fell from heaven 1400 years ago in time of drought, and which was carried in procession when rain was wanted. The greatest ornament of Arras is the church of St. Vedast, with a fine steeple, a pulpit of brass in the form of a tree, supported by two bears of the same metal. The chimes play a great variety of tunes. There are eleven parish churches. The tapestry, called *Arras hangings*, derives its denomination from this city. The place contains 19,364, and the canton 29,613 inhabitants: the territory comprehends 70 kilometres and 13 communes. N. lat. 50° 17'. E. long. 2° 56'.

ARRATS, a river of France, which runs into the Garonne, about two miles north-west of Auillard, in the department of the Lot and Garonne.

ARRAY, in *Law*, the ranking or ordering a jury or inquest of men impannelled on any cause. The word may be derived either from the obsolete French, *array, order*; or from *raye, a line, stroke*, &c. Hence, to *array* a pannel, ana. 3 Hen. V. is to set forth the men impannelled one by another. By the statute, every *array* in assise ought to be made four days before. For challenges to the array, see CHALLENGE.

ARRAY, in *Military Language*. See BATTLE.

ARRAYAL DE PORATE, in *Geography*, a town in Brazil, situate on the west side of Para river, below the junction of its two great branches.

ARRAYERS, or ARRAYSERS, ARRATOIRES, in *Military Language*. is used in some ancient statutes, for certain provincial officers, whose duty it was, not only to inspect the soldiers, and see that they were able-bodied and fit for service; but also that they were properly armed, accoutred, and otherwise appointed according to the station and nature of their service. They were likewise to arrange both the cavalry and the infantry into their proper bodies, equivalent to the present divisions of troops, squadrons, companies, and battalions. In some reigns, commissioners were appointed for this purpose; and the form of the commission of array was settled in parliament in the 5 Henry IV.

About the reign of king Henry VIII. or his children, lieutenants began to be introduced, as standing representatives of the crown, to keep the counties in military order; for we find them mentioned as known officers in the statute 4 & 5 Ph. & M. c. 3., though they had not then been long in use; for Camden speaks of them in the time of queen Elizabeth, as extraordinary magistrates constituted only in times of difficulty and danger. But the introduction of these commissions of lieutenantancy, which contained, in substance, the same powers as the old commissions of array, caused the latter to fall into disuse. In this state things continued, till the repeal of the statutes of armour in the reign of king James I. stat. 1 Jac. I. c. 2. 21 Jac. I.

c. 28. After this period, viz. in 1642, king Charles I. opposed his commissions of array to the ordinance of parliament concerning the militia, and thus brought on the agitation of the question which became at length the immediate cause of the fatal rupture between the king and his parliament.

ARRAYOLOS, in *Geography*, a small town of Portugal, in Alentejo; situate upon the declivity of a mountain, and containing about 2000 inhabitants, a large monastery belonging to the canons of St. John the Evangelist, and a monastery of Franciscans. It lies north of Evora, south-east of Montemor, and 6 leagues from Estremoz, in which distance a single village is not seen. The soil is sometimes granite in masses, and sometimes slaty granite. In the vicinity are tracts over-grown with broom; but within a league of Arrayolos the lands are cultivated.

ARREARS, ARREARAGES, ARRERAGIUM, or ARRIERAGIUM, the remains of an account, or a sum of money remaining in the hands of an accomptant. The word is derived from the French *arrearages*, which is formed from *arriere*, behind.

ARREARS is also used more generally for a remainder of rents or monies unpaid at the due time; whether they be rents of a manor, or any thing reserved: called also, in some writers, *arrieraquum firmarum*.

ARREARS, in *Military Language*, denote the difference between the full pay and subsistence of each officer, directed to be paid once a year by the agent. These arrears were abolished in 1797. See PAY.

ARREAU, in *Geography*, a town of France, in the department of the Higher Pyrenées, and chief place of a canton in the district of Begneres, 13 miles south-east of Begneres, and 23 south-south-east of Tarbes. The place contains 980 and the canton 5979 inhabitants: the territory includes 175 kilometres and 19 communes.

ARRENS, a town of France, in the department of the Higher, Pyrenées and chief place of a canton in the district of Argellez, on the Garonne, 8 miles south-west of Argellez.

ARRENTATION, in the *Forest Law*, the licencing an owner of lands in the forest, to inclose them with a low hedge, and small ditch, in consideration of a yearly rent. *Saving the arrentations*, denotes a power reserved to give such licences for yearly rent.

ARREST, in *Common Law*, the apprehending or restraining of one's person, in execution of the command of some court of record, or officer of justice.

The word *arrest* is French, and is used in that language for a decree or determination of a cause debated to and fro: in which sense it seems derived from *arrestor*, *placitum*, the pleasure of the court.

Hence when a person is legally stopped, apprehended, and restrained of his liberty, for debt, &c. he is said to be arrested, or put under an arrest; which is the beginning of imprisonment.

Arrests are either in *civil* or in *criminal* cases.

I. An arrest in a *civil cause*, is defined to be the apprehending or restraining one's person by process in execution of the command of some court or officer of justice. Wood's *Just.* 575. This arrest must be corporal seizing or touching the defendant's body; after which the bailiff may justify breaking open the house in which he is, to take him; otherwise he has no such power, but must watch his opportunity to arrest him. For every man's house is considered by the law as his castle of defence and asylum, in which he should suffer no violation. This principle is carried so far in the civil law, that for the most part, not so much as a common citation or summons, much less an arrest, can be executed upon a man within his own walls. But doors may be

broke open in pursuit of one arrested; otherwise, action of trespass, &c. lies for breaking open a house to make arrest in a civil action. But if it appears a bailiff found an outer door, &c. open, he may open the inner door to make an arrest. Comb. 327. The court of King's Bench has determined, in the case of *Lee v. Gen. Gansel*, that the chamber door of a lodger is not to be considered as his outer door; but that the street door being open, the officers had a right to force open the chamber door, the defendant being in the room and refusing to open it. Cowp. 1. Peers of the realm, peeresses by birth, peers of Scotland, a peeress by marriage, not afterwards having intermarried with a commoner, members of parliament, and corporations, are privileged from arrests, and of course from outlawries. And against them the process to enforce an appearance must be by summons, and distress infinite, instead of a *capias*. Also clerks, attornies, and all other persons attending courts of justice (for attornies, being officers of the court, are always supposed to be there attending), are not liable to be arrested by the ordinary process of the court, but must be sued by *bill* (usually called a *bill of privilege*), as being personally present in court. Clergymen, performing divine service, and not merely staying in the church with a fraudulent design, are for the time privileged from arrests, by stat. 50 Edw. III. c. 5. and 1 Ric. II. c. 16.; as likewise members of convocation actually attending thereon, by stat. 8 Hen. VI. c. 1.; and also ambassadors, or the domestic servants of an ambassador, "really and *bona fide* in that capacity." Suitors, witnesses, and other persons, necessarily attending any courts of record upon business, are not to be arrested during their actual attendance, which includes their necessary coming and returning. A bankrupt coming to surrender, or within 42 days after his surrender (5 Geo. II. c. 30. § 5. Cowp. 156.); witnesses properly summoned before commissioners of bankruptcy, or other commissioners under the great seal (1 Atk. 54.); but not creditors coming to prove their debts (4 Term Rep. 377.); heirs, executors, or administrators (R. M. 1654.), except on personal contracts by themselves (1 T. Rep. 716.), or in cases of *devastavit* (1 Salk. 98.), are exempted from arrests. By stat. 31 Geo. II. c. 10. no seaman aboard his majesty's ships can be arrested for any debt, unless the same be sworn to amount to at least 20l.; but by the annual mutiny acts, a soldier may be arrested for a debt which extends to half that value, but not to a less amount. In an action against husband and wife, the husband alone is liable to be arrested, and shall not be discharged till he have put in bail for himself and his wife (1 Vent. 4. 1 Mod. 8.); and if she is arrested, she shall be discharged on common bail (1 Term Rep. 486. 1 Salk. 115.). No arrest can be made in the king's presence, nor within the verge of his royal palace, extending by stat. 28 Hen. VIII. c. 12. from Charing-cross to Westminster Hall, or within 200 feet from the gate of any of the palaces and houses of the king, or any other house where the royal person shall abide; nor in any place where the king's justices are actually sitting. The king hath moreover a special prerogative (which indeed is very seldom executed) that he may, by his writ of protection, privilege a defendant from all personal, and many real, suits for one year at a time, and no longer; in respect of his being engaged in his service out of the realm. And the king also, by the common law, might take his creditor into his protection, so that no one might sue or arrest him till the king's debt were paid (F. N. B. 28. Co. Litt. 131.); but by stat. 25 Edw. III. ft. 5. c. 19. notwithstanding such protection, another creditor may proceed to judgment against him; with a stay of execution, till the king's debt be paid; unless

unless such creditor will undertake for the king's debt, and then he shall have execution for both. An arrest in the night, as well as the day, is lawful. 9 Rep. 66. And lastly, by stat. 29 Car. II. c. 7. no arrest can be made, nor process served, upon a Sunday, except for treason, felony, or breach of the peace. But a person may be retaken on a Sunday, when arrested the day before, Mod. Caf. 231; or, when he goes at large out of the rules of the King's Bench or Fleet prison, &c. 5 Ann. c. 9. By 13 Geo. I. c. 29. and 5 Geo. II. c. 27. both made perpetual by 21 Geo. II. c. 3. no person can be arrested, or held to bail, on a writ sued out of the superior courts, unless the cause of action be 10*l.* or upwards. And by 19 Geo. III. c. 70. no person can be arrested or held to bail upon process out of any inferior court, for less than 10*l.*, but proceedings are to be had in inferior courts according to the directions of 12 Geo. I. c. 29. extended by 19 Geo. III. to debts under 10*l.* It is now settled, both in K. B. and C. P. that a defendant may be arrested in an action on a judgment for 10*l.* for damages and costs, though the original debt alone were under 10*l.* 4 Term Rep. 570. on the authority of 2 Blackit. Rep. 1274.

When a person is apprehended for debt, &c. he is said to be arrested; and writs express arrest by two several words, *capias* and *attachias*, to take and catch hold of a man; for an officer must actually lay hold of a person, besides saying that he arrests him, or it will be no lawful arrest, 1 Lill. Abr. 96. If a bailiff be kept off from making an arrest, he shall have an action of assault; and where the person arrested, resists or assaults the bailiff, he may justify beating of him. If a bailiff *touches* a man, which is an arrest, and he makes his escape, it is a rescous, and attachment may be had against him. If a bailiff lays hold of one by the hand held out at a window, this is such a taking of him as will justify his breaking open of the house to carry him away.

2. An arrest in a *criminal cause* is the apprehending or restraining one's person, in order to be forthcoming to answer an alleged or suspected crime. To this arrest all persons whatsoever are, without distinction, equally liable, and doors may be broken to arrest the offender; but no man is to be arrested, unless charged with such a crime as will at least justify holding him to bail, when taken. There is this difference between civil and criminal cases; that none shall be arrested for debt, trespass, &c. or other cause of action, but by virtue of a precept or commandment out of some court; but for treason, felony, or breach of the peace, any man may arrest without warrant or precept. Terms de Ley, 54. But the king cannot command any one by word of mouth to be arrested; for he must do it by writ, or order of his courts, according to law: nor may the king arrest any man for suspicion of treason or felony, as his subjects may, because, if he doth wrong, the party cannot have an action against him. 2 Int. 186. In general, an arrest may be made four ways; viz. by WARRANT; by officers without warrant, as by a JUSTICE of the peace, the SHERIFF, the CORONER, the CONSTABLE, and WATCHMEN; by a private person also without warrant; and by an HUE and CRY. Arrests by private persons are in some cases commanded; so that any person who is present when any felony is committed, is bound by the law to arrest the felon, on pain of fine and imprisonment, if he escapes through the negligence of the by-standers. 2 Hawk. P. C. 74. And they may justify breaking open doors upon following such felon; and if they kill him, provided he cannot be otherwise taken, it is justifiable; though, if they are killed in endeavouring to make such arrest, it is murder. 2 Hal. P. C. 77. Upon probable suspicion also a private person may arrest the felon,

or other person so suspected. 30 Geo. II. c. 24. But he cannot justify breaking open doors to do it; and if either party kill the other in the attempt, it is merely man slaughter, 2 Hal. P. C. 82, 83. Every private person is bound to assist an officer, requiring him to apprehend a felon. In order to encourage the apprehending of certain felons, rewards and immunities are bestowed on such as bring them to justice, by several acts of parliament. By 4 & 5 W. & M. c. 8. persons who apprehend a highwayman, and prosecute him to conviction, shall receive a reward of fifty pounds from the public, to be paid them, or if they be killed, to their executors, by the sheriff of the county; to which is added by 8 Geo. II. c. 16. ten pounds, to be paid by the hundred indemnified by such taking. By 6 & 7 W. III. c. 17. and 15 Geo. II. c. 18. persons apprehending and convicting any offenders against those statutes respecting the coinage, shall, if the offence be treason or felony, receive a reward of 40*l.* or 10*l.* if the offence amount only to counterfeiting the copper coin. By 10 & 11 W. III. c. 23. any person apprehending and prosecuting to conviction a felon guilty of burglary, house-breaking, horse-stealing, or private larceny to the value of 5*s.* from any shop, warehouse, coach-house, or stable, shall be excused from all parish offices. By 5 Ann. c. 31. any person for apprehending and prosecuting a burglar, or felonious house-breaker, or, if killed in the attempt, his executors shall be entitled to a reward of 40*l.* By 6 Geo. I. c. 23. persons apprehending and prosecuting to conviction any one taking reward for helping others to stolen goods, shall be entitled to 40*l.* By 14 Geo. II. c. 16. explained by 15 Geo. II. c. 34. any person apprehending and prosecuting to conviction such as steal, or kill with intent to steal, any sheep or other cattle specified in the latter of the said acts, shall, for every such conviction, receive a reward of 10*l.* Lastly, by 16 Geo. II. c. 15. and 8 Geo. III. c. 15. persons discovering, apprehending, and convicting felons and others, being found at large during the term for which they are ordered to be transported, shall receive a reward of 20*l.* Blackit. Com. vol. iii. p. 288. vol. iv. 289. Jacob's Law Dict. by Tomlins, art. *Arrest*.

The method of procuring a man's appearance before a court of justice, is different from that above recited, in most of the countries of Europe, where the forms introduced in the Roman civil law, in the reigns of the latter emperors, have been instituted. The usual practice is to have the person sued, summoned to appear before the court by a public officer belonging to it, a week before the time. If no regard is paid to such summons twice repeated, the plaintiff, or his attorney, is allowed to make before the court a formal reading of his demand, which is then granted him, and he may proceed to execution.

In Rome, the method of seizing the person of a man, against whom a demand of any kind was preferred, previously to any judgment being passed against him, was adopted and continued to be followed after the institution of the prætor's court, to whom the civil branch of the power of the consuls was afterwards delegated; and it lasted till the times of the latter emperors, in whose reigns the Roman civil law underwent those alterations which gave it the form it now has in those codes or collections that are in our possession. In Rome, however, instead of employing a proper officer, and furnishing him with a writ or order for seizing a man's person, every one became a kind of public officer in his own cause, for asserting the prætor's prerogative; and without any ostensible legal licence, or badge of public authority, had a right to seize by force the person of his opponent, wherever he met him. The practice was, that

the "actor," or plaintiff, first summoned the "reum," or person sued, with a loud voice to follow him before the court of the prætor. If the defendant refused to obey this summons, the plaintiff, by means of the words "licet autellari," requested the by-standers to witness the fact, in token of which he touched the ears of each of them; and he then proceeded to seize the person of his opponent by throwing his arms around his neck "oborto collo," and thus endeavouring to drag him before the prætor. If the person sued was, by age or sickness, unable to follow the plaintiff, the latter was directed by the Twelve Tables to supply him with a horse. This method of proceeding was afterwards, though very lately and very slowly, mitigated. In the first place, it became unlawful to seize a man in his own house, as it was the abode of his domestic gods. Women of good family, or "matronæ," were protected from being dragged by force before the tribunal of the prætor. The method of forcibly placing a sick or aged person upon a horse was abolished during the latter times of the republic. Emancipated sons, and slaves who had obtained their freedom, were afterwards restrained from summoning their parents or late masters without the express leave of the prætor, under the penalty of fifty pieces of gold. However, so late as the time of Pliny, the old mode of summoning or carrying by force before a judge continued in general to subsist; though in the time of Ulpian, the necessity of obtaining the express leave of the prætor was extended to all cases and persons; and in the reign of Constantine, the method was introduced of having legal summonses served only by means of a public officer appointed for that purpose. After that time other changes in the former law took place, from which the mode of proceeding now used on the continent of Europe has been borrowed. De Lolme's Constitution of England, ch. 10.

ARREST of judgment, to move or plead in, is to shew just cause why judgment should be stayed, notwithstanding verdict given. Judgment may be arrested for good cause in criminal cases, as well as civil, if the indictment be insufficient. 3 Inst. 210. Motions in arrest of judgment may be made at any time before judgment signed. Doug. 747. Str. 845. Arrests of judgment arise from intrinsic causes appearing upon the face of the record. Of this kind are, first, where the declaration varies totally from the original writ; also, secondly, where the verdict materially differs from the pleadings and issue thereon; or, thirdly, if the case laid in the declaration is not sufficient, in point of law, to found an action upon. If judgment is not by some of these means arrested within the first four days of the next term after the trial, it is then to be entered on the roll or record. See JUDGMENT.

In criminal cases, whenever the defendant appears in person, upon either a capital or inferior conviction, he may at this period, as well as at his arraignment, offer any exceptions to the indictment in arrest or stay of judgment, as for want of sufficient certainty in setting forth either the person, the time, the place, or the offence. And if the objections be valid, the whole proceedings shall be set aside; but the party may be indicted again. A pardon may be pleaded in arrest of judgment; and it has the same advantage when pleaded here, as when pleaded upon arraignment; viz. the saving the attainder, and of course the corruption of blood, which nothing can restore but parliament, when a pardon is not pleaded till after sentence. Praying the benefit of clergy may also be ranked among the motions in arrest of judgment. If all these resources fail, the court must proceed to pronounce the judgment. See JUDGMENT.

ARREST of Inquest, or to plead in arrest of taking the inquest, is to shew cause why an inquest should not be taken. See INQUEST.

ARREST, in Military Language, is the exercise of that part of military jurisdiction, by which an officer is noticed for misconduct, or put into a situation to prepare for his trial by a general court-martial.

ARREST, or Arret, is sometimes used among French writers, in the sense of the Latin word "retiaculum," to signify a small piece of steel, which was formerly used in the construction of fire-arms, to prevent the piece from going off.

ARRESTANDIS bonis ne dissipentur, a writ which lay for him whose cattle or goods are taken by another, who during the controversy makes or is likely to make away with them, and will hardly be able to give satisfaction for them afterwards. Reg. Orig. 126.

ARRESTANDO ipsum, qui pecuniam recepit ad proficiscendum in obsequium regis, &c. is a writ which lay for the apprehension of him that hath taken press-money to serve in the king's wars, and hides himself when he should go. Reg. Orig. 24.

ARRESTMENT, in Scots Law, signifies the securing of a criminal till trial, or till he find caution to stand trial, in what are calledailable crimes. In civil cases, it denotes either the detaining of strangers or natives "in meditatione fugæ," till they find caution "judicio filii;" or the attaching of the effects of a stranger in order to found jurisdiction. But, in the most general acceptation of the word, it signifies that diligence by which a creditor detains the goods and effects of his debtor in the hands of third parties, till the debt due to him be paid or secured. *Arrestment* may be laid on by the authority either of the supreme court, or of an inferior judge. In the first case, it proceeds either upon special letters of arrestment, or on a warrant contained in letters of horning, and it must be executed by a messenger. The warrants granted by inferior judges are called precepts of arrestment, and they are executed by the proper officer of the court. All debts, in which one is personally bound, though they should be heritably secured, are grounds upon which the creditor may arrest the moveable estate belonging to his debtor.

Moveable debts are the proper subject of arrestment; under which are comprehended conditional debts, and even depending claims. But there are certain moveable debts which are not arrestable; such as debts due by bill, future debts, and alimentary debts, including salaries of public officers. If, in contempt of the arrestment, the arrestee shall make payment of the sum, or deliver the goods arrested, to the common debtor, he is not only liable criminally for breach of arrestment, but he must pay the debt again to the arrester. Arrestment is only an inchoate or begun diligence; for perfecting it, there must be an action brought by the arrester against the arrestee, to make the debt, or subject arrested, forthcoming. In all competitions of arrestments, regard is had to the dates, not of the grounds of debt, but of the diligences proceeding upon them. In the competition of arrestments with assignations, an assignation by the common debtor, intimated before arrestment, is preferable to the arrestment; if the assignation is granted before arrestment, but not intimated till after it, the arrester is preferred. See POUNDING.

ARRESTO facto super bonis mercatorum alienigenarum, &c. is a writ which lay for a denizen against the goods of aliens found within this kingdom, in recompence of goods taken from him in a foreign country, after he hath been denied

denied restitution there. This answers to what among the ancient civilians was called *clarigatio*, now barbarously *REPRISALIA*.

ARRETE-NEF, in *Zoology*, a common term among the French for the *Remora*, or sucking-fish; alluding no doubt to the fabulous relations of the ancient poets, who feigned that this fish, which is scarcely more than a foot or two in length, was capable of arresting the progress of a ship in full sail by fastening itself to the bottom of it. See *ECHENEIS remora*.

ARRETIUM VETUS, now *Arezzo*, in *Ancient Geography*, a town of Italy, in Etruria. It was seated on a hill not far from Umbria, and was celebrated for its manufacture of earthen vessels, its wine, a fountain whence were issued oracles, &c. See *AREZZO*.

ARRETIUM Fulvium, a town of Etruria, upon the Arnus, north of the former.

ARRETIUM Fidens, another town of Etruria, south of *Arretium vetus*.

ARRETTED, **ARRECTATUS**, *quasi, ad rectum vocatus*, is sometimes used in our ancient law-books for imputed, or laid to.—As, no folly may be arretted to one under age. It is applied also to a person who is convened before a judge, and charged with a crime.

ARRHA, in *Ancient Geography*, a town of Illyrium. Steph. Byz.

ARRHABON, a river of Asia, in Armenia, had its source in mount Caucasus, and ran into the Cyrus. Strabo.

ARRHABONARI, derived from *αρραβων*, *arrha*, *earnest*, in *Ecclesiastical History*, a sect, in the sixteenth century, who held that the eucharist is neither the real flesh and blood of Christ, nor yet the sign of them, but only the pledge or earnest thereof.

ARRHADA, in *Ancient Geography*, a town of Arabia Deserta. Ptolemy.

ARRHÆ, or *Argentum Dei*. See *EARNEST*, &c.

ARRHAPA, in *Ancient Geography*, a town of Asia, in Assyria. Ptolemy.

ARRAPHON, denotes a skull without sutures, found to be the cause of incurable *CEPHALALGIE*.

ARRHENA, in *Ancient Geography*, a town of Asia, in Armenia Major. Pliny says, that the rivers Tigris and Arsenius ran near one another through this country.

ARRHENOGOGON, in *Betany*, a name given by some to the *parietaria*, or peilitory of the wall.

ARRHEPHORIA, in *Antiquity*, a feast among the Athenians, instituted in honour of Minerva, and Herse, daughter of Cecrops. The word is compounded of *αρραβων*, *mystery*, and *φερω*, *I carry*; on account of certain mysterious things which were carried in procession at this solemnity.

Boys, or, as some say, girls, between seven and twelve years of age, were the ministers that assisted at this feast, and were denominated *αρρηφοροι*.

This feast was also called *Hersephoria*, from Herse the daughter of Cecrops, on whose account it is said to have been first established.

ARRIA, in *Biography*, a Roman lady distinguished by her fortitude and conjugal affection, was the wife of Cæcina Pætus, a man of consular dignity, who died in the 42d year of the Christian æra. Pliny the younger has preserved (*Epist. l. iii. ep. 16.*) several anecdotes, some of which are worth recording. Her husband and her son, who was a very amiable and promising youth, were both seized at the same time with a very dangerous disorder. The son died, but the mother concealed the distressing event from the sick father; and whenever she appeared in his presence, assumed a cheerful countenance, and answered his inquiries respecting the deceased with so much composure and serenity,

that she even prevented the suspicion of his death. When her husband was apprehended, in consequence of having joined Scribonianus in a rebellion against the emperor Claudius, and was conveyed by sea to Rome, Arria wished to accompany him in the same vessel; but being refused, she hired a fishing boat, and followed him. Having arrived at Rome, she determined to die with Pætus; and to the remonstrance of her son-in-law Thrasea, who asked her, "Would you wish that your daughter should accompany me, if I were to die?" she replied, "Yes, provided the dead lived so long and so happily with you as I have lived with Pætus." To those who watched her, and who endeavoured to divert the execution of her purpose, she said, "You may make my death more painful, but cannot prevent it;" and dashing her head against a wall, fell senseless on the ground. Upon her recovery, she calmly said, "I told you that I would find a difficult road to death, if you hindered me from obtaining an easy one." When her husband was ordered to destroy himself, Arria perceiving his hesitation, plunged a dagger in her breast, and then presented it covered with blood to her husband, exclaiming, in words celebrated by the ancients, who did not entertain that horror of self-murder which Christians have derived from better principles, "Pætus, it is not painful." Martial's epigram on this subject is well known; but it is remarked, that he has given an ingenious turn to the speech, which injures its noble simplicity:

"Casta suo gladium cum traderet Arria Pæto,

Quem de visceribus traxerat ipsa suis;

Si qua fides, vulnus, quod feci, non dolet, inquit,

Sed quod tu facies, hoc mihi, Pæte, dolet."

"When Arria pulled the dagger from her side,

Thus to her comfort spoke th' illustrious bride:

The wound I gave myself I do not grieve;

I die by that which Pætus must receive."

Tatler, vol. ii. N^o 72.

Arria, the daughter, who was married to Pætus Thrasea, proposed to imitate this example of her mother, when her husband was condemned to death under Nero; but she changed her resolution upon his request, who desired her to live in order to take care of their daughter. Tacit. *Annal. l. xvi. c. 34.* Gen. Dict.

ARRIACA, in *Ancient Geography*, a town of Spain, between Complutum to the south-west, and Seguntia to the north-east, on the same river with the first of these towns.

ARRIAGA, RODERIC DE, in *Biography*, a learned Spanish Jesuit, was born at Lucrona in 1592, and gained great applause by teaching philosophy at Valladolid, and divinity at Salamanca. Having voluntarily undertaken the office of teaching these sciences in Bohemia, he removed to Prague in 1624, whence he was deputed thrice to Rome by the province of Bohemia, to assist at the general congregations of the order of Jesuits; and after acquiring distinguished reputation in the several offices to which he was appointed, he died at Prague in 1667. Such was the vigour of his mind, that he broke through the trammels of the schools in the investigation of philosophical and theological subjects: but destitute of the right clue to guide his inquiries, he indulged the wildest conjectures in explaining the phenomena of nature, and wandered into the regions of general scepticism, so that he was more successful in demolishing the opinions of others than in establishing any of his own. His works are: "A Course of Philosophy," in one volume folio, printed at Antwerp in 1632, and several times re-printed; and "A Course of Divinity," in eight volumes folio, printed between the years 1643 and 1655, by Balthasar Moret, at Antwerp.

He.

He was prevented from finishing a ninth volume by his death. Gen. Dict.

ARRIAGI, in the *Materia Medica*, a name given by some authors, particularly by Serapion and Avicenna, to a fine kind of camphor.

ARRIAN, in *Biography*, a Greek historian, was born at Nicomedia in Bithynia, where he was priest of Proserpine, and flourished in the second century under the emperors Adrian and the Antonines. After his residence at Rome, he became a disciple of Epictetus, and by his talents and learning he recommended himself to the patronage of Adrian. Having been admitted to the honour of a Roman citizen, he was appointed prefect of Cappadocia, and in this station he distinguished himself by his prudence and valour in the war against the Alani and Massagetae. He was afterwards advanced to the dignities of senator and consul. Like Xenophon, he united the literary with the military character, and devoted a great part of his life to the pursuits of learning and philosophy. Of the numerous historical writings of Arrian, if we except some fragments preserved by Photius and Tzetzes, two only remain. The first is, "The expedition of Alexander the Great, in seven books;" a work in high estimation, not only on account of the accuracy and fidelity that distinguish the detail of facts, but for the simplicity and sweetness of the style in which they are recited. As his knowledge of political and military science was more extensive than that of Q. Curtius, he possessed a sounder judgment, and was less inclined to the marvellous than that historian. His facts were collected from the best authorities, particularly from the memoirs left by Ptolemy Lagus and Aristobolus, who had served under Alexander in his expedition, and who did not publish their accounts till after the death of Alexander, and with no other motive besides that of discovering the truth. His style was formed upon the model of that of Xenophon, and combined simplicity and ease with strength and elegance; so that he was not unjustly denominated the second Xenophon. "This work, says Dr. Robertson, (Hist. Disq. concerning India, p. 24.) though composed long after Greece had lost its liberty, and in an age when genius and taste were on the decline, is not unworthy the purest times of Attic literature." Arrian's "Account of the Affairs of India," in which the history of Alexander is pursued, has been considered by many as an eighth book of the former work; though it has been objected that this book is written in the Ionic, but the former seven in the Attic dialect, and that its facts are chiefly taken from Megasthenes, to whom Strabo allows little credit. Dr. Robertson (ubi supra, p. 344.) says, that the Indian history of Arrian is one of the most curious treatises transmitted to us from antiquity. The first part of it consists of extracts from an account given by Nearchus of the climate and soil of India, and the manners of the natives; and the second contains that officer's journal of his voyage from the mouth of the Indus to the bottom of the Persian gulf. For the elucidation of this curious monument of ancient navigation, see "The Voyage of Nearchus from the Indus to the Euphrates," by Dr. Vincent, 4to. 1797. We may add, that, notwithstanding some particulars, to which objections have been made, and which have been examined by Dr. Robertson and others, the account of Nearchus's voyage, detailed, probably only in part by Arrian, the promontories, the creeks, the rivers, the cities, and the mountains, which came successively in his view, are so clearly described, and the distances of such as were most worthy of notice are so distinctly marked, that M. d'Anville, by comparing these with the actual position of the country, according to the best accounts of it, ancient as well as modern, has been able to point out most of the places which Nearchus men-

tions, with a degree of certainty, which does as much honour to the veracity of the Grecian navigator, as to the industry, learning, and penetration of the French geographer. Mem. de Literat. tom. xxx. p. 132, &c. See also the learned and elaborate work of Dr. Vincent, above cited. Arrian's "Expedition of Alexander" was first printed in Greek, at Venice, in 8vo, in 1535; at Basil, in 1539, 8vo.; at Geneva, by H. Stephens, in 1575, fol.; in Greek and Latin, by Blancard, 8vo. with notes, at Amsterdam, in 1668; by Gronovius, at Leyden, in 1704, fol.; and at Amsterdam, in 8vo., with the notes of Raphaelius and others, in 1757. The book "De Indiciis" has usually been published with the "Expedit. Alex." The "Periplus Ponti Euxini," in a letter from Arrian to Adrian, containing a description of a voyage along the coasts of the Euxine sea, is still extant, and was probably written while Arrian was prefect of Cappadocia. The "Periplus Maris Erythraei" has been ascribed by some to Arrian, but Salmatus is of opinion that it was written in the time of Pliny the natural historian, or a little before his time; and that it could not have been composed by Arrian, and addressed to Adrian, because mention is made of several princes who lived in Pliny's time. M. Tillemont apprehends, that it was compiled by that Arrian to whom Pliny the younger wrote several letters, whom he represents as a man of great abilities and eloquence, and who was considered as an imitator of Demolthenes. But this Arrian, having retired from public employments about the time of Nerva, or the beginning of Trajan's reign, could not have been the same with the disciple of Epictetus. The "Periplus Ponti Euxini," and "Periplus Maris Erythraei," were published together at Basil, in fol.; at Leyden, in 1577; and among the Ancient Geographers, in 4to. by Gronovius, at Leyden, in 1697; and at Oxford, in 1698, 8vo. The "Tactics" of Arrian was written in the 20th year of Adrian. It treats of the order and arrangement of an army; and also the order which Arrian gave for the march of the Roman army against the Alani. His book "On Hunting" was published in Blancard's edition of the works of Arrian: and of his invaluable moral treatise, intitled "Enchiridion," containing the discourses of Epictetus, we have an excellent edition by Upton, printed at London in two volumes 4to., in 1739. Gen. Dict. Fabr. Bibl. Græc. l. iv. c. 8. t. iii. p. 269.

ARRIANA, in *Ancient Geography*, a town of Pannonia Prima, in the district of Norica Ripensis.

ARRIANA, in *Geography*, a village of Africa, two leagues north of Tunis, in which are seen some ruins of ancient Carthage, particularly a long range of the arches of the celebrated aqueduct, all of them entire, seventy feet high, supported by columns sixteen feet square. The channel, that conveyed the water, lies upon these arches, and is high and broad enough for a person of an ordinary size to walk in. It is vaulted, and plastered in the inside with a strong cement, which by the stream running through it, is discoloured to the height of about 3 feet. Shaw's Trav. p. 13.

ARRIB of *Rupes*, in *Commerce*, equal to 100 crores, each crore being 100 lacks, and each lack 12,500l.: so that an arrib is equal to about 125,000,000l.

ARRIBANTRUM, in *Ancient Geography*, a town of Dardania, a country of Upper Mysia. Ptolemy.

ARRIEGE, in *Geography*, a river of France, which rises in the Pyrenées, passes by Foix, Pamiers, Savarden, St. Gabelle, &c. and joins the Garonne about two miles from Toulouse. Gold has been found in several parts of this river near Pamiers.

Arriège gives name to one of the departments of France, formed of the territory called Couzerans, and the Pays de Foix. It is bounded on the north by the departments of Upper

Upper Garonne, and of Aude; on the east, by the departments of Aude, and the Eastern Pyrenées; on the south, by the department of the Eastern Pyrenées, and the Pyrenées; and on the west, by the department of Upper Garonne. Its superficies is about 1,037,533 square acres, or 529,540 hectares; its population consists of about 194,858 individuals; and it is divided into three communal districts. Its chief town is Tarascon.

ARRIENNES, a mountain of France, in the department of the Calvados, remarkable for the resort of birds of prey, such as eagles, falcons, kites, &c. one league from Falaise.

ARRIERE, Fr. denotes the rear.

ARRIERE-BAN, or *Ariere-ban*, in the *French Customs*, is a general proclamation, whereby the king summons to the war all that hold of him; both his vassals, i. e. the noblesse, and the vassals of his vassals.

M. Cafeneuve takes the word to be composed of *arriere*, and *ban*: the *ban*, according to him, denotes the convening of the noblesse or vassals, who hold fees immediately of the king; and *arriere*, those who only hold of the king immediately.

ARRIERE-fee, or *ief*, is a fee dependant on some other superior one.

Arriere-fees commenced at the time when the counts and dukes, rendering their governments hereditary in their families, distributed to their officers certain parts of the royal domains which they found in their provinces; and even permitted those officers to gratify the soldiers under them with parts of the same.

ARRIERE-guard. See REAR-guard.

ARRIERE-vassal, or *tenant*, the vassal or tenant of another vassal or tenant.

ARRIGNO, in *Geography*, a town of the island of Corsica, eight miles east of Calvi.

ARRIGONI, CARLO, in *Biography*, an eminent Italian Lutenist, who arrived in England about the time of the establishment of the Royal Academy, or opera, in 1721, where he accompanied on the lute out of the composer's book or score, during the whole time of Handel's regency. In 1732, he accompanied Farinelli: he had many scholars in singing in the great families of this country, and had the reputation of a good composer. He left England in 1733, and removed to Vienna, where he composed the oratorio of Esther, which augmented his reputation as a good musician.

ARRION, in *Geography*, a town of Persia, in the province of Adir-beitzan, thirty leagues south-east of Tauris.

ARRION, or CARRION, a river of Spain, which runs into the Pisuerga, near its union with the Duero.

ARRO, a river of England, which runs into the Lug, near Léominster, in Herefordshire.

ARROBAS, or AROBAS, in *Commerce*. See AROBE.

ARROE, in *Geography*, an island of Denmark, in the Baltic mountains, but intersected with vallies, and containing three parishes. It lies south of the island of Funen, and west of that of Langeland. N. lat. 54° 55'. E. long. 10° 10'.

ARROE, is also a small island of Denmark, in the Little Belt, west of Funen, and almost contiguous to the east coast of the duchy of Sleswick. It gives name to a Sound on that coast. N. lat. 55° 16'. E. long. 9° 40'.

ARROESKIOBING, a town of Denmark, in the island of Arroë, in the Baltic.

ARROGATION, See ADROGATION.

ARROJA DE ST. SERVAN, in *Geography*, a town of Spain, in the province of Estremadura, three miles south of Merida.

ARROIS, a village of Scotland, in the isle of Mull.

ARRON, or ARON, a river of France, which runs into the Loire near Decize.

ARRONCHES. See ARONCHES.

ARRONDIE, in *Heraldry*, CROSS-arrondie, or rounded, is that whose arms are composed of sections of a circle, not opposite to each other, so as to make the arm bulge out thicker in one part than another; but both the sections of each arm lie in the same way, so that the arm is every where of an equal thickness; and all of them terminating at the edges of the esccheon, like the plain cross.

ARROO, or ARRAU, *Iles*, in *Geography*, islands of that part of Asia called Australasia, lying to the south-west of New Guinea; in S. lat. 6°, and E. long. 135°. Although Pennant classed these among the spicy islands, they produce, according to his account, fago, and not spice. During the dry, or western monsoons, the mancodiatæ, or birds of Paradise, which breed in New Guinea, and reside there whilst the wet monsoon lasts, retire to Arroo; migrating in flocks of 30 or 40, under the conduct of a leader, called by the inhabitants of Arroo, the king: he is said to be black, to have red spots, and to fly far above the flock, which never desert him, but settle where he settles. During their flight they cry like starlings; but when surprised with a strong gale, they croak like ravens, and ascend to the superior regions of the air. They alight on the highest trees, and seem to feed on berries, or on nutmegs and butterflies; and they are either shot with blunt arrows, or caught with bird-lime, or nooses. The bowels and breast-bone being extracted, they are dried with smoke and sulphur, sold for nails or bits of iron, and exported to Banda. The Arroo islands appear, in Arrowsmith's chart, divided into five by intervening straits. The chief product is fago; and the people make expeditions to the main land, where they seize captives, and sell them at Banda. Since 1623, the Arroo isles have been considered as belonging to the Dutch East India Company, and subservient to those of Banda.

ARROS, a river of France, which runs into the Adour near Aire, in the department of Landes.

ARROSOIR, in *Conchology*, a name assigned by modern French naturalists, after Brugière and Lamarck, to a new genus of shells, formed exclusively of the Linnæan *Serpula penis*, and another analogous species figured in the seventy-ninth plate of Favanne's Conchology. The former is the *Penicillus marinus* of Argenville; *Chinese watering-pot* of the English; and *L'Arrosoir de Java* of the French; the latter is also called by them *L'Arrosoir de la Nouvelle Zélande*. See SERPULA PENIS.

ARROTINO, L', in *Sculpture*, a statue in the gallery of the great duke at Florence, representing an old man reeling upon one knee, and whetting a kind of broad knife upon a stone, with his head erect, and, as it were, listening with great attention, but very cautious of being observed. The head and the hair of this piece of sculpture are particularly admired. It is generally thought to have been a peasant, who, being in the field, happened to overhear some of Catiline's accomplices, and discovered them: but the history of that conspiracy, as also of that headed by Brutus's sons, makes no mention of their being detected by a country labourer. Keyser's Trav. vol. ii. p. 21. Leonard Agostini, cited by Gronovius, supposes that this statue represents a Seythian charged by Apollo with the destruction of Marsyas, and that it made part of a group, exhibiting the punishment of this audacious rival of Apollo.

ARROU, in *Geography*, a town of France in the department of the Eure and Loire, and chief place of a canton in the district of Chateaudun, 7 leagues S.S.W. of Chartres.

ARROUKHAGE. See AROKHAGE.

ARROUX, in *Geography*, a river of France, which rises near Arnay-le-Duc, and runs into the Loire, between Digoin, and Motte St. Jean, in the department of the Saone and Loire.

ARROW, in *Arbery*, in the Saxon *ape*, or *apepe*, a missile weapon of offence, slender, pointed, and barbed, made to be cast or shot from a bow. See ARCHERY. Muthew derives it from the Latin *arvus*, because the ancients so frequently made the shafts of their arrows from reeds: Skinner refers us to the Anglo-Saxon *æarp*, *ærvas*; and Junius to the French *arroyer*, because the arrows descended on the enemy like a shower.

The chief of the nations that composed the army of Xerxes had both their bows and arrows made of reeds: the bows, however, of the Lydians were of cornel wood; the arrows of the Indians were pointed with iron; those of the Ethiopians with a sharp stone that they sometimes used to cut their seals with; and the arrows of the Lycians were unfeathered (Herodotus, Polymnia). The Grecians headed their arrows with brass, as well as the Scythians; and from a particular passage in the *Odyssey*, it is supposed, that the heads of the Grecian arrows were fastened on as they were wanted. The ancient Germans generally prefixed pointed stones to their weapons; and Brotier, in his notes on Tacitus, observes, that many such have been discovered in the German sepulchres. Nor is it an uncommon thing to find arrow-heads of flint in the ancient cairns of stone in our own country. (See Gough, *Sep. Mon.* vol. i. p. 18.)

Among the Romans, although the tree called *Cornus* was very frequently made use of for the arrow-shaft, yet the most common material was the reed, which grew in Italy, not only with great strength, but in great abundance, particularly in the Pontine marshes.

The use of the arrow among our early ancestors has been already spoken of (see ARCHERY); the particular material, indeed, of which either the head or shaft was made, has not come down to us; but we can speak of the arrows of the middle ages with a greater degree of certainty.

Roger Ascham thought (*Toxoph.* ed. 1571. f. 166.) that for the pluming of an arrow, the feathers from the wing of a grey goose were preferable to any other: which strongly reminds us of part of a stanza in the well-known ballad of Chevy Chase, where an English archer aimed his arrow at sir Hugh Montgomery:

“The grey-goose wing that was thereon,
In his heartes blood was wett.”

The more ancient ballad, however, reads, *swane-feathers*. In the “*geste of Robyn Hode*,” among Mr. Garrick’s old plays, in the Museum, the arrows of the outlaw and his companions are particularly described:

“With them they had an hundred bowes,
The stringes were well ydyght;
An hundred these of arrows good,
With heedes burnish’d full bryght;
And every arrowe an ell longe,
With *peacocke* well ydyght,
And nooked they with white silk,
It was a femely fight.”

And Chaucer, in his description of the squyers yeoman, says:

“And he was clad in cote and hode of greene;
A shefe of *peacocke* arrowes bryght and shene,
Under his belt he bare full thiriftely,
Well coude he dresse his tackle yemanly:
His arrowes drouped not with fethers lowe,
And in his hande he bare a mighty bowe.”

ProL. to Cant. Tales.

In the wardrobe accmpts of the 28th Edw. I. (p. 359.) is a charge of verdigrease to stain the feathers of the arrows green. Nor are we to suppose that peacock-arrows are only to be found in poetry; a wardrobe accmpt of the 4th Edw. II. furnishes this entry; “*Pro duodecim flechiis*

cum pennis d. p. rous, emptis pro rege de 12 den’.” And Cervate Mulkham mentions that when he wrote, 1631, the peacock feather was sometimes used at the short butt; yet seldom or ever, he complains, did it keep the shaft either right or level. (*Art of Archerie*, p. 91.)

Ascham says, in the composition of an arrow there are three essential parts; the flet or vane, the feathers, and the head. The flet was not always made of the same species of wood, but varied according to the different modes of shooting practised. He commends sound *afb* for military arrows, and prefers it to *asp*, which in his day, as well as in the time of Charles I., was generally used for the arrows of the army: but for pastime he thought none were better than those made of oak, hard-beam, or birch. Occasionally, it should seem the arrow, toward the head, was pierced with brazil, holly, or other heavy wood, to make it fly the steadier. (Mulkham’s *Art of Archerie*, p. 86.)

The arrows at Chevy Chase were drawn to the ear, contrary to the usage of the ancients, as appears not only from many of their reliefs, but the traditionary circumstance of the Amazons parting with the right breast as an impediment to their using the bow. Some of our ancient ballads extend the length of the arrow to an ell; but the cloth-yard appears to have had the preference, and is mentioned not only in the old ballad of Chevy Chase, but by most of our historians, as the particular length of the arrow used by the English archers at the battle of Agincourt, 1415; and by Carew, (*Survey of Cornwall*, p. 73.) 1602, as in use among the Cornish bowmen. (See Strutt’s *Sports and Pastimes*, p. 50.)

Archers generally speak of an arrow weighing so many shillings; but they consider an arrow of an ounce weight to be the best for flight or hitting a mark at a considerable distance. As to the feathers, those of a goose are preferred; it is also wished that the bird should be two or three years old, and that the feather may drop of itself. Two out of the three feathers are commonly white, being plucked from the gander, but the third is generally brown or grey, being taken from the goose, and from this difference in point of colour informs the archer when the arrow is properly placed. (*Archæol.* vol. vii. p. 65.)

Mr. Grose, in his *Military History*, (vol. ii. p. 169.) quotes a curious particular respecting arrow heads from Swinden’s *Hillory of Great Yarmouth*; where the sheriff of Norfolk, in the 42d of Edw. III. being ordered to provide a number of garbs of arrows headed with steel for the king’s use, is directed for the heading of these to seize all the flocks of anchors (*omnes alas ancarum*) necessary for the purpose. Arrows were usually reckoned by the garb or sheaf. For immediate use they were carried in the girdle.

ARROW, for the *Cross-bow*. See BOLT.

ARROW, *Fire*. When the Persians, under Xerxes, encamped on the hill opposite the citadel of Athens, they commenced their attack by shooting against the barricade of wood, which the oracle had declared invincible, arrows wrapped in tow, and fired. (Herodotus, *Urania*.) This, as far as we remember, is the earliest instance of fire arrows on record. Among the Romans they were seldom used. But the warriors of the middle ages frequently fixed phials of quicklime, or other combustibile matter, to their arrow heads, and shot them from the bow; (See *Matt. Paris*, p. 1090, 1091) and in sea-fights they were found particularly serviceable. Even so low as the time of Edward VI. arrows with wild-fire, and arrows with fire-works, are mentioned among the stores at Newhaven and Berwick. (Grose, *Milit. Hist.* vol. ii. p. 270.)

ARROWS, *Whistling*. The use of whistling-arrows, at least in this country, cannot be carried to very high antiquity. It seems probable that they were first used on military occasions,

finns, and especially as signals during the quarrel of the roses. Hall (An. 7. Hen. VIII. fol. 56.) mentions a company of archers who met king Henry VIII. at Shooter's-hill, on a May-day morning, where they discharged their bows in his presence, and the arrows made a loud whistling in their flight, "by crafte of the head." The strangeness of the noise, we are told, surpris'd the king: but this is no proof that the use of the weapon was a novelty. In this case the arrow-head was usually made with horn, rounded at the end and pierced with several holes. See Archæol. vol. ii. p. 58. For the practice of divining by *arrows*, see BELOMANCY.

ARROW, in *Astronomy, Trigonometry, &c.* See SAGITTA.

ARROW, in *Fortification*, is a work placed at the salient angles of the glacis, and consists of two parapets, each forty toises long. The work has a communication with the covert-way, of about twenty-four or thirty feet broad, called *caponier*; and a ditch before it, of five or six toises.

ARROW, in *Geography*, the name of a lough, or lake, in the county of Sligo, in Ireland, which is about eight miles long, full of romantic and woody islands, and of a very irregular form; and also of a river proceeding from the lake, and running northward to Ballydore, where it rushes at once into the sea, breaking over rocks in the most romantic manner, from edge to edge, in many falls for the space of 200 yards, before it comes to the principal one, which is twelve or fourteen feet perpendicular. Beaufort. Young.

ARROW, in *Surveying*, is used for small straight rods, of which there are ten, about a foot or half a yard long, shod with iron ferrils. Their use is to stick into the ground, at the end of every chain, in measuring lines.

ARROWAUKS, or ARWACKS, in *Geography*, a name given to the ancient natives of Hispaniola, Cuba, Jamaica, and Porto-Rico, as well as of Trinidad, who were a mild and comparatively cultivated people, and who seem to have had one common origin, as they speak the same language, possess the same institutions, and practise similar superstitions. Columbus treats of them as such; and the testimony of many contemporary historians confirms his opinion. The Charaibes, or Caribbees, regarded them as the descendants of a colony of Guiana, a race of Indians to whose noble qualities the most honourable testimony is borne by every traveller who has visited them, and recorded his observations. Mr. Bryan Edwards thinks it extremely probable, that all the various nations of this part of the New World, excepting only the Charaibes, emigrated anciently from the great hive of the Mexican empire. But at what period such emigrations were made; whether the Charaibes were previously possessed of the widely extended coast that bounds the Atlantic, or, in posterior ages, accidentally found their way thither by sea from the continent, are points concerning which, as it is impossible to determine, it is in vain to inquire. Mr. Edwards has given a particular detail of their persons and corporeal endowments, their intellectual faculties and dispositions, their political institutions, and their religious rites. See his History of the West Indies, vol. i. p. 60. &c.

ARROW, *Elf*. See ELF-arrows.

ARROWSIKE, in *Geography*, an island in the district of Maine, in America, separated from Parker's island by a small strait. It is within the limits of George-town; and contains nearly one-third of its inhabitants, and has a church. It comprehends about 20,000 acres of land.

ARROW, *Magical*, a sort of weapon very common among the barbarous inhabitants of Lapland, and many other of the northern climates; and supposed to possess very strange virtues.

ARROW, *Wildfire*. See WILDFIRE.

ARROW-head, in *Botany*. See SAGITTARIA.

ARROW-beaded Grass. See TRIGLOCHIN.

ARROW-root, *Indian*. See MARANTA.

ARRUCI VETUS, in *Ancient Geography*, a town of Spain, in Bætica, near the mountains.

ARS NOTARIA. See ART.

ARS *Theffalica*, *Theffalian art*, is used by *Ancient Writers*, for a species of magic, whereby it is pretended, they could draw the moon and stars out of heaven.

It was denominated *Theffalian*, from its supposed inventors, the people of Theffaly.

ARS, in *Geography*, a town of France, in the department of the Creuse, and chief place of a canton in the district of Aubusson; five miles north-west of Aubusson.

ARS, a town of France, on the south-west coast of the island of Ré, two leagues west of St. Martin de Ré. N. lat. 46° 12'. W. long. 1° 37'.

ARS, a river of Spain, which runs into the sea near cape Finisterre, in Galicia.

ARSA, in *Ancient Geography*, a town of Spain, in Bætica, to the north-east.

ARSA, a town of Hispania Tarragonensis, in the territory of the Edutians. Ptolemy.

ARSA, a country of India, on this side the Ganges, between the rivers Indus and Hydaspes. According to Ptolemy it had two cities, viz. Ifaguras or Ithaguras, and Taxila or Taxilea.

ARSACIDÆ, in *Ancient History*, a denomination given to the kings of Parthia, commencing with Arfaces I., the founder of the Parthian monarchy, and terminating with Artabanus, who was put to death by order of Artaxerxes, after the Parthians were subdued by the Persians. The most probable account of this period, which is somewhat perplexed, is as follows. In the reign of Antiochus Theos, king of Syria, Arfaces, a Bactrian, excited the Parthians to shake off the Macedonian yoke, and to establish the national independence. This happened about the year before Christ 250. The success of Arfaces induced the Parthians to elevate him to the throne, and he fixed his residence at Hecatompolis. Seleucus Callinicus, the successor of Antiochus, attempted to recover the Parthian provinces; but he was defeated in a great battle by Arfaces, and made captive; and this event was by the Parthians commemorated at the commencement of their independence; and its anniversary celebrated with great solemnity for many ages. Having possessed himself of Hyrcania and some neighbouring provinces, he was at length killed in battle against the king of Cappadocia, after a prosperous reign of about thirty-eight years. Blair, in his Chronology, dates his death at the year before Christ 245. However this be, he left behind him a great reputation throughout the east; and his successors the Parthian kings all took his name, as the Roman emperors did that of Cæsar. The empire founded by him proved an impenetrable barrier against the Romans, in their attempts to extend their dominions eastward. After various events (see PARTHIA), Artabanus IV. succeeded to the throne; and his prosperity had elated him so much, that, first of all the Parthian monarchs, he assumed the double diadem, and the title of the "Great King." But his power was of no long duration. Ardshir Babegan, or Artaxerxes, excited the Parthians to revolt against him; and in a desperate battle he was defeated, taken, and soon after put to death, in 226. Blair refers this defeat to the year 229, and Playfair to 222. By this event, the Parthian empire, which had subsisted under the "Arsacidæ" 475 years, was finally overthrown, and once more transferred to the Persians. The family of the "Arsacidæ,"

faciæ," however, was not extinguished in Artabanus, but continued to reign in Armenia, till the time of the emperor Justinian, holding that kingdom of the Persian monarchs, to whom the "Arsaciæ" of Armenia were tributaries. *Anc. Un. Hist.* vol. viii. p. 120. vol. ix. p. 210.

ARSACIDES, *Land of*, in *Geography*, high land, covered with wood, situate north of New Britain, in that part of Asia called Australasia, forms a part of the islands of Gower, Carteret, and Simpson, seen by captain Carteret in 1767, observed by M. de Bougainville in 1768; and seen by M. Surville in 1769, who called it the Archipelago of the Arsacides. This land forms some part, at least, of the Solomon islands, which were first recognized by the English; though the discovery of them is claimed by M. Fleurieu, and other French writers, in favour of French navigators. These islands were visited in 1788, by Mr. Shortland, and called by him New Georgia. See *SOLOMON ISLANDS*.

ARSÆ, in *Ancient Geography*, a people of Arabia Felix, according to Ptolemy.

ARSAGALITÆ, a people of India, placed by Pliny beyond the Indus.

ARSAGO, in *Geography*, a town of Italy, in the Milanese, four leagues north of Milan.

ARSAMAS, a town of Russia, in the community of Neshnei Novogorod. It is the capital of the district of Arsamias, situate on the river Tesh, falling into the Ocea, and on the road from Moscow to Altracan, 120 leagues south-east from the former, and 200 north-west from the latter.

ARSAMATIAS, in *Ancient Geography*, a river of Armenia, over which the Parthians compelled the Romans to build for them a bridge. Lipsius has, without sufficient reason, corrected the text of Tacitus, and called it Arsanias.

ARSAMOSATA, *SIMSAT*. See *ARMOSATA*.

ARSANE', a town of Palestine, in which Afa, king of Israel, was buried, according to Josephus, *Ant.* l. viii. c. 6.

ARSANIAS, **ARSEN**, a river of Asia, which had its source in the mountains east of the Euphrates, and passing through a small lake, traversed the south-west between the mountains, passed by Arsamofata, and discharged itself into the Euphrates to the south-west of that city. Pliny, Dion, Plutarch, and Tacitus, mention this river; and the latter says, that it ran between Tigranocerta and Artaxata.

ARSARATHA, a town of Asia, in Armenia Major. Ptolemy.

ARŠCHIN, in *Commerce*, a long measure used in China, to measure stuffs; of the same length with the Dutch ell, which is two feet eleven lines.

ARŠCHOT, in *Geography*. See *AERŠCHOT*.

ARSE-verse, in *Antiquity*, a term, or formula, inscribed on doors, to prevent fire. It is said to be of Tuscan origin, where the word *arse* signifies *avert*, and *verse*, *fire*. *Pitisc. Lex. Ant.*

ARSEMINI, in *Geography*, a town of the island of Sardinia, seven miles south-west of Cagliari.

ARSEN, in *Ancient Geography*, a river of the western part of Arcadia, which ran from the north-east to the south-west, and discharged itself into the river Ladon.

ARSENA, a name given by Strabo to the lake Arethusa in Armenia Major.

ARSENAL, a royal or public magazine, or place appointed for the making and keeping of arms, necessary either for defence or assault. The Romans had arsenals in all the frontiers of their empire.

The arsenal of Venice is the place where the galleys are built and laid up. This is a fortification of between two and three miles in compass; on the ramparts are many little

watch-towers, where centinels are stationed. Like the arsenal at Toulon, it is both a dock-yard, and a repository for naval and military stores. Here the Venetians build their ships, cast their cannon, make their cables, sails, anchors, &c. —The arsenal of Paris is that where the cannon or great guns are cast. It has this inscription over the gate:

"*Ætna hæc Henrico vulcania tela ministrat,
'Tela Gigantum debellatura furores.'*"

There are arsenals or store-houses appropriate to naval furniture and equipments.—At Marseilles is the arsenal for the galleys; and at Toulon, Rochefort, and Brest, are those for the men of war.

ARSENARIA, in *Ancient Geography*, a Roman colony of Africa, in Mauritania Cæleriensis. This town was an episcopal see. It corresponds to the modern ARZEW.

ARSENIAT. See *ARSENIC*, § 10.

ARSENIC, *Arzenique*, Fr. *Arzenik*, Germ. *Arzenicum*, Lat. *Αρσενικον*, *Αρσενικον*, Theophr. & Dioscorid.

Arsenic is a brittle acidifiable metal, of a bluishwhite colour, easily tarnishing by exposure to the air: it does not melt, but volatilizes by a gentle heat, exhaling copious white fumes, with a peculiar alliaceous or garlic smell; it is soluble in nitro-muriatic acid, and is precipitable in the form of a light orange-coloured powder by sulphuret of ammonia, or of a green colour by ammoniated copper.

§ 1. *Ores of Arsenic.*

Besides the ores of arsenic properly so called, this metal is found in combination with silver, copper, iron, lead, cobalt, antimony, and lime, all of which will be treated of in their proper places: at present we shall confine ourselves to those substances which, by the common consent of mineralogists, are arranged as ores of arsenic.

Sp. I. Native Arsenic. *Arsenic testacée*, Born. *Arsenic natif*, Haüy and Brochant. *Gediegener arzenick*, Emmerling, &c. *Arsenicum nativum*, Werner. *Arsenicum nigrum*, *Cobaltum testaceum*, *Fliegenstein*, *Scherbenkobelt*, &c. of the older writers.

Its colour when newly broken is a very light lead-grey, often passing into tin white; but the surface, by a short exposure to the air, becomes yellow, then blackish grey, and finally almost black.

It is found generally in mass, more rarely disseminated; in kidney-shaped or clustered masses, or in plates, or curious, branched, bearing impressions, &c. Externally it is rough or granular, with little or no lustre; internally it is little shining, with a metallic lustre.

Its fracture is sometimes fine-grained, uneven, or curved lamellar; more rarely radiated or bundled. It flies when broken into indeterminate blunt-edged fragments, sometimes in the form of plates. It is also frequently composed of distinct concretions, either testaceous, concentric, or kidney-shaped.

It acquires a polish by friction, and emits an alliaceous odour; is half-hard and brittle. It rings when struck by a hard body.

Sp. gr. according to Brisson 5.724 . . . 5.763; according to Kirwan 5.67.

Before the blow-pipe native arsenic fuses without difficulty, giving out a copious, white, alliaceous fume; by an increase of heat it takes fire, burns with a bluish flame, and is wholly dissipated. It deposits on the charcoal, or any cold substance that is presented to it, a white powder, which is oxyd of arsenic.

Native arsenic is not, however, in a state of absolute purity; it always contains a small and variable proportion of iron; besides occasionally a little gold or silver.

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This mineral is found at Worlich and Joachimsthal, in Bohemia; at Freyberg, Annaberg, Schneeberg, Marienberg, and Johangeorgenthal, in Saxony; at Andreasberg, in the Hartz; at Geisberg and Seltzsch in Carinthia; at Nagyag in Transylvania; and St. Marie-aux-mines in France. It occurs only in the veins of primitive mountains: the substances that accompany it are red silver, realgar, galena, native silver, specular cobalt, kupfernikkel, spathose iron, fahlerz, pyrites, quartz, heavy spar, calcareous and fluor spars.

Sp. II. Marcasite or Mispickel. *Arsenical pyrites*, Kirw. *Fer arsenical*, Haüy. *Arsenik kies*, Germ. *Arsenicum mineralizatum pyriticum*, Werner.

Of this there are two varieties.

Var. 1. Common Marcasite. *Gemeiner arsenik kies*, Germ. Its colour where recently fractured is silvery white, but in general its surface is yellowish, greyish, or bluish, sometimes iridescent. It occurs in mass, disseminated, inveiling, or crystallized. The primitive form of its crystals is a striat rhomboidal prism, the angles of whose base are $103^{\circ} 20'$, and $76^{\circ} 40'$: the other varieties that have been ascertained are, the rhomboidal prism with dihedral summits (Fer arsen. ditetraedre of Haüy), and the same prism with tetrahedral summits (F. ar. quadrifacetal of Haüy). The lateral faces are also sometimes cylindrical, either concave or convex. The faces composing the sides of the prisms are always smooth and shining: those of the summits are crossed by striæ. Internally the marcasite is shining, with a metallic lustre. Its fracture is uneven, coarse, or finely granular; presenting occasionally columnar or granular distinct concretions. When broken it flies into indeterminate sharp-edged fragments. It is hard, generally giving fire with steel, and diffusing an alliaceous odour; is brittle, but difficult to break.

Sp. gr. according to Gellert 5.75; according to Haüy 6.52.

When exposed to the flame of the blow-pipe on charcoal, this mineral gives out a copious arsenical fume, and melts into a globule of brittle iron. Its analysis has not yet been made with any accuracy, and probably the amorphous kind at least, on account of the variable proportion of its ingredients, is incapable of affording an exact result. The constituent parts of pure mispickel appear to be only arsenic and iron, both of them in the metallic state: but it is often intimately mixed with iron pyrites, and hence affords an uncertain quantity of sulphur: two specimens analysed by Vauquelin, yielded respectively 38.8 and 4. per cent. of arsenic, which seems to shew that mispickel and pyrites, though, when pure and crystallized, sufficiently distinct from each other, are so intimately blended by nature, as to pass by insensible gradations from the one to the other extreme of the series. In several of these compounds, however, minute inspection has discovered small separate cubes of pyrites; and these intermediate varieties are rather to be considered as simple mixtures than chemical compounds.

The two substances with which marcasite is liable to be confounded, are arsenical cobalt and pyrites. It differs from the first in being harder, in having a yellowish white tint, while the colour of the other is reddish white, and in the form of its crystals: it is distinguished from the latter by giving out when struck an arsenical, instead of a merely sulphureous odour, by the lighter yellow of its colour, and by its crystalline forms.

Marcasite is found in Bohemia, in Saxony, in Silesia, in Cornwall, and various other places, either in veins, or disseminated through primitive mountains. The substances by which it is accompanied, are generally tin-stone and galena; more rarely black blende, spathose iron, copper pyrites,

quartz, fluor, and calcareous spars. At Reichenbach in Silesia, it is found in serpentine rock.

Marcasite appears to be made little or no use of: the more brilliant specimens are occasionally cut and polished, and made into buttons, and other small articles; this is particularly the case with some found near Dublin, and called Irish diamonds.

Var. 2. Argentiferous marcasite. *Weisserz*, Werner.

Its colour is similar to that of the preceding variety, but when exposed to the air it tarnishes to a deeper yellow. It is rarely found in mass, being generally disseminated or crystallized in minute acicular four-sided prisms. Externally it is shining, internally little shining, with a metallic lustre. Its fracture is fine-grained, uneven, with granular distinct concretions.

Its other external and chemical characters correspond with those of the preceding variety, from which it differs only in a variable proportion of silver, from 1 to 10 per cent.; and for which it is often worked.

It is found at Freyberg and Braunsdorf in Saxony; and is usually accompanied with common marcasite, red silver, galena, copper pyrites, &c.

For the affinities of this mineral with arsenical silver, see SILVER, *Ores of*.

Sp. III. Sulphurated Arsenic. *Rauschgelb*, Germ. *Arsenic sulfuré*, Haüy. *Arsenicum mineralizat. risgallum*, Werner.

This species is divided into two varieties, the red and yellow.

Var. 1. Realgar. *Rotbes rauschgelb*, Emmerling. *Arsen. min. risgall. rubrum*, Werner. *Arsenic sulfuré rouge*, Haüy. *Rubine d'arsenic*, Sanderac, *Rubinschwefel*, &c.

Its colour is a bright Aurora red, passing on one hand to scarlet-red, and on the other to yellow-orange. It is rarely found in mass, more frequently disseminated or inveiling, and very frequently crystallized. The primitive form of its crystals is a long octahedron, with scalene triangular faces exactly the same as sulphur. The two pyramids of the octahedron are sometimes intercepted by a quadrilateral prism (see *Crystallographical Plates*, fig. 94.), forming the variety A. f. r. émoussé of Haüy: other varieties are derived from bevilling and truncating the angles of the intervening prism; and a further variety (fig. 95.) A. f. r. surcomposé of Haüy, is produced by the truncature of all the solid angles of the terminating pyramids. The crystals are for the most part small, and not easy to determine. Their surface and interior are shining or much-shining, with a vitreous lustre. The fracture is uneven granular, passing into minute conchoidal: the fragments are indeterminate, blunt-edged. It is commonly translucent, occasionally semi-transparent or opaque. The colour of its break is orange-yellow. It is very tender, somewhat brittle, and easily broken by the nail. Sp. gr. according to Bergman 3.22. Brisson 3.33. It is idio-electric, acquiring the resinous electricity by friction.

Before the blow-pipe it melts easily, burns with a blue flame, and a sulphureous arsenical odour, and is for the most part volatilized. Nitrous acid in a short time deprives it of its colour. It has never been accurately analysed, but consists principally of arsenic and sulphur.

Realgar occurs native in the vicinity of Ætna and other volcanos, and also in the primitive mountains of Germany, Hungary, and Switzerland. The substances that are found most frequently to accompany it are native arsenic, red silver, and galena.

The substances that it resembles are red silver and chromated lead; it may, however, be distinguished from the first by the following properties: the powder of the silver ore is red, that of the realgar orange-yellow; the sp. gr of the

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silver ore is the greatest, in the proportion of about 5 to 3; besides which, it does not become electric by friction, nor does it flame or volatilize by the blowpipe. Chromated lead is more than twice as heavy as realgar, and exhibits the same differences with regard to electricity and habitude before the blowpipe as red silver.

Native realgar is made no use of; for the purposes to which the artificial is applied, see § 11. of this article.

Var. 2. Orpiment. *Gelbes raufschgelb*, Emmerling. *Arsen. min. risgal. flavum*, Werner. *Arsen. sulf. jaune*, Haüy. *Auripigmentum*, Lat.

Its usual colour is a beautiful lemon-yellow, passing on one side into sulphur-yellow, gold-yellow, or honey-yellow, and on the other into aurora red. It is found disseminated, and in mass. It is internally shining, or very shining, with a bright waxy lustre, sometimes passing into the metallic. Its fracture is straight or curved foliated. In mass it is rarely more than translucent at the edges, but in thin plates is semi-transparent. Its streak is of the same colour as the mineral itself, only a little lighter. It is very tender, soft to the touch; when in plates is flexible though not elastic. Sp. gr. 3.45. It is idio-electric, and in its chemical characters, corresponds with the preceding variety. It consists of sulphur and arsenic, but the proportions are not ascertained with accuracy.

Orpiment is found in the Bannat in Natolia and Servia, at Nagyag in Transylvania, Felsőbanya in Hungary, &c.

It appears to be a mineral of late formation, being always found in stratiform mountains. It is, for the most part, accompanied by clay, quartz, &c. &c. sometimes by realgar.

The crystalline forms that are usually attributed to this mineral are, upon the authority of Haüy, referred to the preceding variety.

Sp. IV. Native oxyd of Arsenic. *Arsenic oxydé natif*, Fr. *Natürlicher arsenik kalk*, Germ. *Arsenicum ochraceum album*, Werner.

Its colour is snow-white or yellowish, reddish, or greenish-white; it is found also of a clear smoke grey. Its common form is that of a superficial earthy friable crust on the surface of other minerals: more rarely it occurs in an indurated state, either stalactitic, clustered, or crystallized. The crystals are always extremely minute, sometimes capillary, bundled, interlaced, or diverging, sometimes in octahedrons, sometimes in quadrilateral tables. When crystallized it appears to be translucent, but in the earthy state it is always opaque. It is very tender, often friable, brittle; has a very sharp disagreeable taste. Sp. gr. 3.7.

Before the blowpipe it gives out a white smoke, and the usual arsenical odour; the grey coloured, as being little oxydated, burns with a bluish flame: after a time, but not so quickly as native arsenic, it is almost wholly volatilized. It is soluble in fifteen times its weight of boiling water: and appears to be an oxyd of arsenic nearly pure with a variable proportion of oxygen. The only substance with which it is liable to be confounded, is the Pharmacolite, or native arseniat of lime: this latter however is insoluble in water, and leaves a considerable residue when exposed to the blowpipe.

The native oxyd of arsenic is a mineral of very rare occurrence; it is found at Joachimsthal in Bohemia, in Saxony, Hesse, Transylvania, and Hungary, in the vicinity of native arsenic, and in certain cobalt mines.

Lenz, *versuch der Mineralien*, vol. ii. p. 229. Kirwan's *Mineralogy*, vol. ii. p. 254. Haüy, *Traité de Mineral.* vol. iv. p. 220. Weidenmann, *Handbuch*, &c. p. 965. Brochant, *Traité de Mineral.* vol. ii. p. 435.

§ 2. *Affay and Analysis of Arsenical Ores.*

Arsenic is a metal in itself of so little value, and so noxious to other metals by its oblique adherence to them, rendering them brittle, and debasing their colour, that in all works in the great, and even in almost all docimastical assays, every method has been resorted to in order to drive off the arsenic, and its proportion to the whole mass has only been vaguely estimated by the loss of weight experienced during the process. The methods employed by Bergman, and the rest of his contemporaries, for ascertaining the quantity of arsenic in any of its ores, are extremely imperfect; even the accurate Klaproth confesses the imperfections of his mode, and till the publication of Mr. Chenevix's Analysis of the Arseniates of Copper and Iron, chemists had attained no certainty in the resolution of this important problem. We shall first mention the advantages and defects of the methods recommended by Bergman, Kirwan, Klaproth, &c. and then proceed to the more accurate ones of Chenevix.

For the decomposition either of the *native arsenic* or *marcasite*, Bergman proposes to treat the pulverized ore with four times its weight of nitro-muriatic acid, formed of one part nitrous and one and a half or two parts muriatic acid. By this menstruum the silver will be converted into muriated silver, and will, together with the flux, remain undissolved, and the arsenic and iron will continue in solution. The filtered liquor is to be evaporated to one-fourth of its bulk, and poured into water; the arsenic will thus be precipitated, and the iron may then be thrown down from the filtered liquor by ammonia, &c. Another way of proceeding is to boil the ore with dilute nitrous acid, in order to take up the silver, copper, &c., while the arsenic will remain behind in form of a powder, and may afterwards be taken up by nitro-muriatic acid, and precipitated from its solution by water.

To these methods, however, it may be objected, 1st, That the precipitation of arsenic from its solution in nitro-muriatic acid by water, is denied by some chemists; and even if the fact of precipitation be allowed, still it is certain that some of the arsenic will remain in solution. 2dly, Antimony, which is often mingled with arsenical ores, will also be thrown down by this process. 3dly, The Ammonia added to the remaining liquor, besides precipitating the iron, &c. will, by destroying the excess of the nitro-muriatic acid, allow the arsenic acid to combine with the oxyd of iron, and thus induce an error in the proportion of this last metal. 4thly, It appears from the uniform experience of Klaproth, and other eminent chemists, that arsenic is abundantly soluble in nitrous acid, and that the silver precipitated from such a solution, even by muriat of soda, contains a little arsenic; and whichever of the alkalies was afterwards used for throwing down the copper, &c. the necessary neutralization of the nitrous acid would afford an opportunity for the arsenic acid to combine with the oxyd of copper.

The *native oxyd of arsenic* is proposed by Kirwan to be dissolved in boiling water, and of course its proportion is to be estimated by the loss of weight sustained by the quantity of ore thus treated. But (besides other objections) the dark-coloured varieties of this ore are probably not sufficiently removed from the metallic state, to be thus soluble. In order to decompose *realgar* or *orpiment*, Bergman directs long-continued ebullition with muriatic acid, adding, if necessary, a little nitrous, till the insoluble residue becomes grey. The insoluble powder is the sulphur, and the arsenical solution is to be decomposed as before mentioned by water. In this process, however, the sulphur will still retain some arsenic; and a little of the sulphur will be oxygenated, and converted into sulphuric acid. Mr. Kirwan recommends

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recommends to precipitate the arsenic from the muriatic acid by zinc; but, according to Mr. Chenevix, the precipitate is not pure metallic arsenic, but a mixture of this with arseniat of zinc.

The analyses in the dry way of the arsenical ores are still less satisfactory than those in the humid way above recited. If sublimation in close vessels is had recourse to, a very intense and long-continued heat will be insufficient to volatilize the whole of the arsenic; the sulphur will also rise at the same time and produce orpiment. Roasting in a muffle, provided the ore is mixed with powdered charcoal, is more effectual; but in this case, not only the arsenic, but the sulphur and antimony, if there happens to be any in the ore, will fly off, and the relative properties of these must be estimated by mere guesses.

Klaproth's method of treating the unfulphurated ores of arsenic may be deduced from his analysis of the arsenical silver ore, which consists of iron, arsenic, silver, and antimony. He first digests the ore with moderately strong nitric acid, which takes up the arsenic and the greatest part of the iron and silver: the addition of muriat of soda throws down the silver in the state of muriat combined with a few atoms of arsenic; and afterwards, the arseniat of iron is thrown down by potash; this precipitate being dried and weighed, is afterwards roasted with charcoal several times, till it ceases to give out arsenical fumes, and is attractable by the magnet: from the loss of weight sustained by the iron, the quantity of arsenic is then estimated. This however, as Mr. Klaproth himself observes, is a very imperfect method. Another way practised by him in the analysis of the arsenical cobalt is, to digest the ore in nitric acid, which oxydates the arsenic and takes up the greater part of it, leaving the residual arsenic soluble in water. The nitrous solution is then evaporated as long as it continues to deposit oxyd of arsenic, and the oxyd of cobalt afterwards separated by potash from the nitrous acid, is presumed to be pure, because it affords a sympathetic ink with muriatic acid. From this humid analysis the cobalt ore is stated by Klaproth to contain 54.5 cobalt, 45 oxyd of arsenic and $\frac{1}{2}$ sulphur: a specimen, however, of the same ore treated in the dry way, afforded only 44 cobalt; there was therefore required to make up the 100, $\frac{1}{2}$ sulphur, and 55.5 reguline arsenic. Hence it is evident, that little dependence is to be placed on the estimation of the quantity of arsenic from the oxyd precipitated by evaporation of the nitrous solution.

A more certain mode of ascertaining the proportion of arsenic is furnished by Mr. Chenevix. Let the ore, previously reduced to extremely fine powder, be digested in nitric acid sufficient to acidify and take up the whole of the arsenic; pour off the clear liquor, and boil on the residue some distilled water; filter, and add the water to the nitrous solution: then neutralize the excess of acid by potash, taking care, however, not to have an excess of alkali, and add nitrat of lead as long as any precipitate takes place: wash the precipitate in cold water, dry and weigh it. As the arsenical ores often contain sulphur, it is possible that the arseniat of lead thus procured, may be mixed with a little sulphat of lead: to decide this, digest the powder in some warm dilute muriatic or nitrous acid, and the arseniat of lead will be dissolved, leaving the sulphat behind. 100 parts arseniate of lead contain, of arsenic acid 33, oxyd of lead 63, water 4, and the 33 parts arsenic acid, denote 22 of the metal.

§ 3. *Reduction of Arsenical Ores, and Preparation of Crude Arsenic, and White Arsenic.*

Arsenic is a substance of such small value and such little demand, that none of the proper ores of this metal are

wrought in the great; the whole of the arsenic of commerce being prepared in Saxony, by roasting the cobalt ores in the manufacture of zalfire. These consist principally of arsenic, cobalt, iron, and a little sulphur: the first and last ingredients of which are got rid of by roasting: this process, instead of being performed in the open air, is done in an oven, the flue of which runs horizontally to a considerable distance before it bends upwards. By this contrivance the arsenic and sulphur, when liberated, are for the most part deposited in the horizontal flue in the form of a greyish meal, streaked with yellow (such portions as are nearest the fire being often melted into a semitransparent crystalline mass). In this state it is called *crude arsenic*, or *flowers of arsenic*; the yellow streaks proceed from the sulphur uniting with the arsenic into orpiment: and besides this, it is also sullied with other impurities.

The *white arsenic* of commerce is prepared from the crude, by mixing this last with potash, or as some advise, with lime, and re-subliming. By this the sulphur and other impurities unite with the alkali, and the white oxyd is driven over into a heated receiver, where it melts into a heavy colourless transparent glass: by exposure for a short time to the air, this glass becomes opaque, and resembles in its fracture the finest white china; and it is in this state that the white arsenic of commerce is found in our shops and laboratories.

§ 4. *Preparation of Reguline Arsenic.*

The old method of procuring the regulus of this metal consisted in mixing white arsenic with half its weight of black flux, one fourth part of borax, and the same proportion of filings of iron or copper, and fusing the whole as quickly as possible in a crucible. When the whole is grown cold, there will be found, on breaking the crucible, a mass of impure metallic arsenic, of a bluish white colour and considerable hardness and solidity. Probably this regulus was originally made from the crude arsenic, in which case the addition of iron or copper was for the purpose of separating the sulphur according to the process mentioned for martial regulus of ANTIMONY. (§. 4.—III.) It is obvious, however, that the arsenic must contain a variable proportion of iron or copper when prepared according to this method, by which its external and chemical characters will be in some degree modified. Another way of obtaining the regulus is recommended by Brandt, to which there can be no objection, upon the supposition that he used crude arsenic. He directs that white arsenic should be mingled with soap, and sublimed: in this operation the oil of the soap serves to de-oxydate the arsenic, and the alkali to keep down any portion of sulphur that may have been combined with the arsenic.

The white arsenic of commerce being an almost entirely pure oxyd of arsenic, the reduction of it into the metallic state is very easily effected. The most eligible way is to mix the white arsenic with any of the vegetable or animal expressed oils, till it becomes of the consistence of very soft glazier's putty; it is then to be made up into round or oblong pieces, and dropped into a Florence flask, so as not to adhere to the sides. The flask with its contents is to be put into a sand-bath, or over a gentle charcoal fire, and must be heated very gradually as long as any thick vapours proceeding from the decomposition of the oil are given out. When these cease, the heat may be by degrees increased till the bottom of the flask becomes obscurely red; shortly after the flask may be withdrawn from the fire, and when cold, upon carefully breaking it, there will be found in the neck and upper part of the vessel, a crust of brilliant triangular crystals of oxyd of arsenic, semi-transparent, and

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of a yellowish grey colour, below these there will be a thick amorphous crust of regulus, and some impurities will remain at the bottom. Let these products, except the impurities, be separated from the fragments of glass, and pulverized together with half their weight of charcoal; then re-sublime the whole as before, and the inside of the flask will be found lined with a crust and crystals of pure and shining regulus of arsenic. It is necessary that these sublimations should be performed under a chimney, for the vapours that arise are intolerably fetid, and extremely noxious to the operator, bringing on in a very short time headach, sickness, and other unpleasant symptoms. Instead of a flask, an earthen retort may be made use of.

§ 5. External Characters and physical Properties of Reguline Arsenic.

The fresh surface of arsenic is of a bright metallic lustre, and a colour between that of tin and lead; it very soon however tarnishes by exposure to the air, becoming first yellowish, then slightly iridescent, and lastly black, in which state it is also wholly destitute of lustre. Its fracture is compact, granular; in hardness it is said to be superior to copper, but it is so brittle as to be reducible to powder in a common mortar without any difficulty, being neither malleable nor ductile. It crystallizes in octahedrons or tetrahedral pyramids. Sp. gr. = 8.31, according to Bergman, but according to Morveau = 5.76. It is not sensible to the smell when cold, yet the fingers after handling it acquire a slight metallic odour: it is manifest to the taste by a peculiar acrid flavour; and when heated to volatilization, diffuses a characteristic fetid alliaceous odour.

§ 6. Chemical Properties of Reguline Arsenic.

I. Effects of Heat.

Arsenic, when pure, is incapable of being melted: in close vessels, at a heat inferior to that required for the fusion of tin, it begins to be volatilized, and is deposited in the upper and cooler parts unchanged in form or properties.

II. Effects of Atmospheric Air.

Atmospheric air at the usual temperature is slowly decomposed by this metal, the oxygenous part uniting with the arsenic, and converting it into a black oxyd, as mentioned § 5. At a heat of about 350° Fahr. the absorption of oxygen is much more rapid, and vapours of white oxyd begin to be visible, diffusing the well-known arsenical smell. At a higher temperature combustion takes place: thus if a vessel or crucible be made red hot, and a few pieces of arsenic be thrown in, a dense white vapour is immediately produced, accompanied by a light blue flame, and in a short time the whole is volatilized. This experiment must not be made in an iron ladle, for the affinity between the two metals at this temperature is so great, that artificial mispickel would be formed, and this being very fusible, the ladle would in all probability be found after the process to have a hole in its bottom.

III. Effects of Water.

Although arsenic is so easily oxydable, yet it does not appear capable of decomposing water; at least it may be immersed in it for any length of time without exhibiting any signs of solution or oxydation; and a covering of this fluid or of alcohol is the best preservative of arsenic against the tarnishing effect of the air.

IV. Arsenic with Hydrogen.

This combination was first discovered by Scheele. If liquid arsenic acid be digested with zinc, an effervescence will take place; and the air thus disengaged, has a strong arsenical smell, inflames by the contact of a candle, and deposits on the inside of the vessel a brown film, which is metallic arsenic. The same gas may also be produced by

granulated zinc in a hot solution of white arsenic in water with the addition of a little muriatic acid.

V. Arsenic with Phosphorus.

The union of these two substances was first observed by Margraaf, whose experiments have since been repeated and confirmed by Pelletier. Phosphuret of arsenic may be made in four ways: first, by subliming equal parts of phosphorus and white oxyd of arsenic, in which case, part of the phosphorus will be acidified at the expense of the metallic oxyd, while the remainder will combine with the metallic base; secondly, by subliming equal parts of reguline arsenic and phosphorus; thirdly and fourthly, in the humid way, by digesting equal parts of arsenic or oxyd of arsenic, with the same weight of phosphorus in a flask, containing a sufficient quantity of water. Phosphorated arsenic is volatilizable in a moderate heat, and is combustible on hot coals, exhaling the mixed odour of its ingredients.

VI. Arsenic with Sulphur.

Both arsenic, and the white oxyd, are capable of uniting with sulphur, by means of fusion or sublimation, into a beautiful red or yellow mass, according to the relative proportion of the ingredients. The yellow is called *orpiment*, or yellow sulphuret of arsenic, the red, *realgar*, or red sulphuret. The sulphur in the realgar is to the arsenic as 1 to 4 nearly, but in the orpiment as 1 to 9 or 10. Both preparations are fusible, and may be sublimed, but the realgar is more easily melted, and with care may be obtained quite transparent, and of a bright red colour; hence it has been called *arsenical ruby*, *rubine d'arsenique*. The sp. grav. of orpiment, according to Bergman, is = 5.315; but of realgar, only = 3.225.

These two substances have not been very accurately analysed, and it is the opinion of several modern chemists, that the differences between them does not depend so much on the proportions of the sulphur and arsenic, as on the presence of oxygen in the one, and its absence from the other. Hence they call realgar, sulphuret of arsenic, and orpiment, sulphurated oxyd of arsenic. This appears, however, to be a mistake, for the following reasons; when regulus of arsenic and sulphur are mixed together, the combination takes place without the extrication of any gas, but when the oxyd of arsenic is substituted for the regulus, at the moment of combination a portion of the sulphur is converted into sulphureous acid gas, probably on account of a decomposition of the metallic oxyd. Further, it appears from the experiments of Bucquet, that by continued fusion orpiment is made of a much redder colour than before, by the volatilization of part of its arsenic; and as an additional confirmation, it may be mentioned that realgar, being sublimed either with metallic or oxydated arsenic, is converted into orpiment.

It is not very easy to make realgar by the direct combination of its elements when they are in a state of purity, on account of the ease with which they are volatilized before they have experienced the proper degree of heat. In Saxony, where orpiment and realgar are made in large quantities, the method is to fill an oven like that described in § 3. with mispickel and iron pyrites, proportioning the quantities of each according as realgar or orpiment is intended to be produced. Now the sulphur and arsenic contained in these minerals being in natural combination with iron, require for their sublimation a degree of heat far greater than they could sustain without volatilization, if they were pure.

Sulphurated arsenic is wholly insoluble in water or alcohol. The nitrous and nitro-muriatic acids, especially when warm, take up the arsenic from the sulphur. The former of these, however,

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however, except it is so concentrated as to act on the sulphur also, only takes up a portion of the arsenic from realgar, converting it into orpiment. Nitro-muriatic acid completely decomposes both the red and yellow sulphuret, hepatic gas being given out at the same time, a circumstance worthy of notice, as affording additional strength to the opinion mentioned above, concerning the state of the metal in these compounds. Sulphuret of arsenic is also decomposed by distillation with two or three times its weight of *corrosive muriat of Mercury*, the acid and oxygen of the mercurial salt uniting with the arsenic into corrosive muriat of arsenic, § 7.; and the metallic base with the sulphur of the orpiment, forming cinnabar.

In the dry way, the fixed alkalies decompose orpiment into alkaline sulphuret and arsenic, which latter sublimes; but if the alkali is in excess, the arsenic is in part detained as well as the sulphur. A solution of caustic potash in water being boiled with orpiment, dissolves it completely, but by the addition of an acid a yellow precipitate is thrown down, which probably is a *hydrosulphuret of arsenic*. Quicklime and orpiment also unite by boiling in water, forming an arsenio-sulphuret of lime, which is sometimes employed as a **WINE-TEST.**

VII. Arsenic with Oils.

Any of the expressed oils being triturated with arsenic, gradually dissolve it, and thus acquire a dark colour and consistence like salve.

VIII. Alloys of Arsenic.

Arsenic unites with almost all the metals, debasing the red and yellow ones, and destroying in a great measure the lustre of all the rest, except tin. It renders those which are malleable and ductile, brittle, and for the most part increases their fusibility and hardness. For other particulars, see the several metals.

§ 7. Salts of Arsenic.

1. Reguline arsenic is acted upon by sulphuric acid when concentrated and assisted by heat: if the operation be performed in a retort with a pneumatic apparatus, there will be produced a considerable quantity of sulphureous acid gas, and sulphur will sublime into the neck of the vessel. What remains behind is a white mass similar to oxyd of arsenic, but combined with a little acid. By the addition of a fresh portion of sulphuric acid, the sulphated oxyd is taken up; as the liquor cools, however, a precipitation of crystalline grains happens, and these are *sulphat of arsenic*. This salt is much less soluble in water than white arsenic; when exposed to the flame of a blow-pipe, it fuses and begins to emit an arsenical smoke, but requires a much longer time for its volatilization than the simple oxyd. By repeated cohobation with sulphuric acid, the arsenic approaches more and more to the nature of arsenic acid, but always continues in some degree sulphated.

2. Nitric acid when hot is readily decomposed upon reguline arsenic, being itself changed into nitrous gas, and the metal becoming oxydated. An addition of dilute nitrous acid at a boiling temperature effects a complete solution of the residual oxyd, and the liquor by evaporation and cooling may be brought to deposit crystals of *nitrat of arsenic*. This salt being abstracted with fresh nitrous acid, and then heated red hot, is wholly converted into arsenic acid. Nitrat of arsenic is sparingly soluble in water, and with the blow-pipe exhibits nearly the same appearances as the preceding salt.

3. Oxymuriatic acid when pure, fresh made, and in the form of gas, exercises a very powerful action on the regulus of arsenic, and exhibits a very striking and beautiful appearance. For this purpose, let a common six or eight ounce

phial be filled in the usual way with oxymuriatic acid gas procured from salt, manganese, and sulphuric acid, in order to have the acid as dry as possible (for the further securing of which, the gas produced about the middle of the process is the best); stop the mouth of the phial with a cork, and place it on a table in an upright position; then reduce some reguline arsenic to a fine powder, and cautiously opening the mouth of the phial, shake in from the end of a knife, or in any other convenient way, a little of the powder. As soon as it comes in contact with the gas, a white vapour will first appear, and will be immediately followed by ignition of the metal, which in its passage to the bottom of the vessel will appear like a stream of fire: this phenomenon may be repeated with successive portions of powder till the acid is almost wholly decomposed. At the bottom will be found a white acidulous oxyd of arsenic. Liquid oxymuriatic acid also is capable of dissolving reguline arsenic; but during this process, the metal being oxygenated at the expense of the acid, the result is muriat of arsenic.

4. Arsenic acid has a remarkable action on its own regulus, though the two appear to be incapable of combining into a proper salt. If the regulus is digested with the acid, its surface becomes shortly covered with a white powder, which is oxyd of arsenic. If the acid is kept in a state of fusion in a retort, and small pieces of the regulus are dropped in from time to time, an inflammation and sublimation of white arsenic will be manifest at each addition. Hence it appears that the oxygen of the arsenic acid quits this to combine with the regulus, till an equilibrium is produced by the one and the other being brought to a common state of oxydation.

These are all the acids which are known to act upon reguline arsenic; many others however are capable of combining with this metal, when previously brought to the state of white oxyd. The salts hence resulting we shall proceed to mention.

1. Muriatic acid when boiling will take up one third of its weight of oxyd of arsenic; a saline precipitate is produced by cooling, and if this is managed gradually, there are formed spicular crystals of *muriat of arsenic*. This salt sublimes wholly if exposed in close vessels to a moderate heat. Before the blow-pipe on charcoal it is decomposed in part, and flies off, giving out at the same time the distinguishing odour of the metal. It is soluble, though sparingly, in warm water, and the solution is decomposable by an alkali, the oxyd of arsenic being thrown down.

Very dry and concentrated muriatic acid, or oxymuriatic acid, are capable of uniting with a much larger proportion of oxyd of arsenic than the liquid muriatic acid. This combination is called *butter of arsenic*, and is thus prepared: take one part of white arsenic, one and a half of red calcined sulphat of iron, and three parts of common salt; mix them accurately in a mortar, and distil in a glass retort from a sand bath. When the heat has been gradually raised so as to make the bottom of the retort nearly red, and nothing more comes over, the process is finished, and there will be found in the receiver two distinct liquors of different consistence. The lower one is of a clear iron brown colour, and is called *butter of arsenic*; the supernatant liquor is thinner, of a lighter yellowish colour, and is called *oil of arsenic*.

Butter of arsenic is a heavy thick liquor, excessively corrosive and poisonous; on exposure to the air it exhales a dense white suffocating vapour, deliquesces, becomes turbid, and finally is spontaneously decomposed. When, instead of this gradual absorption of moisture, it is directly mingled with water, an immediate turbidness and precipitation

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tation ensues of a white pulverulent matter, which was formerly taken for pure oxyd of arsenic; it still, however, as in the case with similar metallic precipitates, retains a portion of acid; for by heating in a close vessel, a little butter of arsenic is sublimed. Liquid muriatic acid unites very sparingly and imperfectly with the butter; and if considerably diluted with water, produces a decomposition just in the same manner as pure water does.

Oil of arsenic, like the preceding, is decomposed in part by water or alcohol, but the precipitate is not so copious: it mingles with liquid muriatic acid without producing any turbidness. The addition of a carbonated alkali is followed by effervescence and the precipitation of oxyd of arsenic. By spontaneous evaporation it yields crystals of muriated arsenic, and a slight efflorescence of white oxyd of arsenic.

There are several other methods of obtaining the butter and oil of arsenic: thus, if orpiment is distilled with two or three times its weight of corrosive sublimate, the sulphur of the former unites with the mercury of the latter, and produces cinnabar, while the arsenic of the former combines with the oxygen and acid of the latter into the oil and butter of arsenic. It is remarkable, however, that corrosive sublimate is not decomposable by oxyd of arsenic; for when the two are distilled together, whatever be their relative proportions, the mercurial salt rises unchanged. Indeed the superiority in affinity of muriatic acid for oxyd of mercury over oxyd of arsenic is still more strikingly shewn by distilling butter of arsenic with oxyd of mercury, in which case a little butter of arsenic first comes over, then corrosive sublimate, and finally white arsenic. If, however, *reguline arsenic* is distilled with corrosive sublimate, the produce is butter of arsenic, a little calomel, and running mercury.

Although the salts of arsenic have not yet received that notice from chemists to which they are entitled, still there has arisen some difference of opinion respecting the combinations of this metal with muriatic acid, some asserting the butter of arsenic to be a proper oxymuriat, while others consider it as scarcely differing, except in concentration, from the muriat. From a careful collation of the scattered facts relative to this subject, it appears that there is no such salt as oxymuriat of arsenic, but that muriatic acid, when its affinities are not weakened by water, will take up a large quantity of arsenical oxyd forming the butter of arsenic; that when by the gradual or sudden addition of water, the affinities of this latter are brought into action, an unequal partition of the acid and oxyd takes place into a soluble and insoluble muriat of arsenic. Hence we have three distinct salts composed of muriatic acid and oxyd of arsenic: first, muriat of arsenic with the smallest proportion of metallic oxyd, this is soluble in water and crystallizable by cooling, and is also capable of sublimation without decomposition; secondly, muriat of arsenic with a larger proportion of metallic oxyd (butter of arsenic), decomposable by water, and not crystallizable; thirdly, muriat of arsenic supersaturated with the oxyd, insoluble in water, decomposable by sublimation.

2. Oxymuriatic acid gas passed into an aqueous solution of white arsenic, is itself decomposed into muriatic acid; and by distillation, the water and muriatic acid being drawn off, there remains in the retort solid arsenic acid. It is therefore probable that the three muriats of arsenic just mentioned differ from each other in the degree of oxygenation of the metallic base, as well as in the proportions of it that they contain; the first being the least oxygenated, and the latter the most so.

3. Fluoric acid, when digested on white oxyd of arsenic, dissolves a small proportion; and by evaporation and cooling,

a granular crystalline salt is obtained, *fluat of arsenic*, the properties of which have not been examined into.

4. Boracic acid combines with white arsenic by means of water, but not in the dry way, according to Reuls. Equal parts of the oxyd and acid digested together in a little water are entirely dissolved, and afforded by evaporation *borat of arsenic* in powder or spicular crystals.

5. Phosphoric acid and oxyd of arsenic combine together without difficulty in the moist way, and afford crystals of *phosphat of arsenic*. This salt is very sparingly soluble in water, and is decomposable by heat, the oxyd being volatilized.

6. Liquid tartareous acid unites by digestion with oxyd of arsenic into a crystallizable salt, *tartrate of arsenic*, the properties of which are as yet in a great measure unknown.

7. Oxalic acid dissolves very easily a considerable quantity of white arsenic, and the liquor affords by evaporation and cooling prismatic crystals of *oxalat of arsenic*: these melt in a very gentle heat, the water of crystallization with part of the acid is evaporated, and the residue affords a very beautiful saline vegetation. Oxalat of arsenic is soluble both in water and alcohol, changes the colour of litmus tincture to red, and sublimates at a moderate heat; but at a higher temperature the acid is first destroyed and flies off, leaving behind the metallic oxyd.

8. Acetous acid, by long digestion and boiling with white arsenic, dissolves a small proportion, and deposits by cooling and evaporation small crystalline grains of *acetite of arsenic*, which are very sparingly soluble in water.

9. Benzoic acid, according to Trommsdorff, dissolves white arsenic with considerable ease, and forms with it *benzoat of arsenic*. This salt appears in the form of long slender radiating crystals, possessed of a sour and pungent taste, which effloresce in the air, are very soluble in boiling water, and are again for the most part deposited by cooling.

10. *Gallat of arsenic* is not known, nor does the tincture of galls, according to the chemists of Dijon, produce any alteration in a solution of white arsenic.

11. Prussiat of potash, when pure, throws down an abundant white precipitate from the solution of arsenic in muriatic acid. This is soluble in a large quantity of water, and by sublimation in the dry way affords a semi-transparent mass; it is probably a *prussiat of arsenic*, but has been as yet scarcely at all examined.

The order of affinity of the various acids for oxyd of arsenic is not ascertained with much certainty. Bergman arranges them in the following order; muriatic, oxalic, sulphuric, nitric, tartareous, phosphoric, fluoric, arsenic, acetous, and prussic acids.

§ 8. Oxyd of Arsenic, or Arsenious Acid.

Oxyd of arsenic is prepared in the large way according to the method already mentioned in § 3. When pure, it is of an opaque white colour; or if recently fused, is perfectly transparent and colourless. It crystallizes artificially (§ 4.) in three-sided pyramids, the vertical angle of which is generally deeply truncated; the crystals are transparent, of a dilute wine yellow colour, and not liable to effloresce or become opaque by exposure to the air, probably owing to their containing rather a smaller proportion of oxygen than the white arsenic of the shops. The sp. grav. of the fused oxyd is about = 5. It slowly excites upon the tongue a sweetish acid taste. It is the most volatile of any of the metallic oxyds, rising at 383° Fahr.

Pure water at the temperature of 60° Fahr. will dissolve about $\frac{1}{80}$ of its weight of this oxyd, but when boiling it takes up $\frac{1}{5}$, the greater part of which it retains even when cold; by evaporation, however, minute three-sided pyramidal

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pyramidal crystals are deposited: the solution is clear and colourless. Alcohol also, when boiling, will dissolve about $\frac{7}{8}$ or $\frac{1}{8}$ of its weight.

From many of its properties white arsenic seems to hold a kind of middle place between an acid and metallic oxyd: thus, it reddens litmus tincture, but turns syrup of violets green, and its aqueous solution is incapable of causing an effervescence in the carbonated alkalies and earths. In the new chemical nomenclature it is denominated the arsenious acid (*acide arsenieux*, Fr.); and the salts that are formed by its combination with the alkalies, earths, and metals, are called arsenites. These seem to hold nearly the same relation to arsenic acid and the arseniats, as sulphureous acid and the sulphites do to sulphuric acid and the sulphats.

The white oxyd of arsenic is easily deoxygenated by carbonaceous matter, by hydrogen, phosphorus, and sulphur, as already mentioned § 4. and 6. and is reduced to the state of reguline arsenic: its habitudes with acids are described § 7.

If to a solution of caustic pot-ash in water there be added some finely powdered oxyd of arsenic, the whole combines together by a boiling heat into a thick, viscid, scarcely fluid matter, of a brown colour, and nauseous smell, which as it cools becomes solid and brittle. This was named by Macquer *liver of arsenic*, and in the modern system has obtained the name of *arsenite of potash*. By long exposure to the air it becomes deliquescent; it is readily soluble in water, but has not been made to crystallize. The addition of any of the acids to the solution causes an immediate decomposition with a copious precipitation of oxyd. Caustic soda produces the same general effects on white arsenic as potash, except that the arsenite of soda is crystallizable. Either of these salts, on being subjected to a full red heat, is decomposed; the greater part of the arsenic being volatilized in the form of a dense white smoke, while the remainder in the state of arsenic acid remains united with an excess of alkali. In the dry way, the white oxyd of arsenic melts together with the fixed alkalies, forming a mass not easily decomposable by heat. According to Bergman, potash is capable of thus fixing twice its weight of the oxyd, and soda three times its weight of the same.

When ammoniacal gas is passed two or three times over heated white arsenic, the two substances contract at length so intimate an union as to bear even fusion without separating from each other. In the moist way also, a combination takes place by the help of a gentle heat, which differs essentially from the common liver of arsenic in that the acids occasion no precipitation. These are singular facts, and the nature of the arsenite of ammonia is well worthy of more notice from chemists than it has yet obtained.

Quicklime and barytes combine by fusion with oxyd of arsenic into a vitreous mass, which however becomes milky and opaque by the continued action of the air. In the moist way, lime and white arsenic being boiled together form a soluble arsenite of lime, from which a precipitate is thrown down on the addition of an acid. Neither magnesia, alumina, nor silex, appear capable of uniting with white arsenic by fusion, but all or any of them combine into an easily fusible mass with the arsenites of potash, soda, lime, or barytes.

But few of the neutral salts have been examined with respect to their action on arsenious acid. The nitrats of potash and soda are decomposed by heat converting the arsenious into the arsenic acid, and therefore this combination is treated of in § 10. (*Arseniats*). The effect of white arsenic on acetite of potash, as recorded by Cadet and the other chemists of the academy of Dijon, is however too

remarkable to be omitted. A mixture of these two substances being subjected to distillation, there first passed over a limpid liquor, with a slight arsenical smell; this changed the colour of syrup of violets red, caused an effervescence in a solution of carbonated alkali, and rendered the liquor turbid. The next product was of a reddish brown colour, and filled the receiver with a dense vapour of a most pestiferous odour, different however from that of arsenic; towards the end of the process, some reguline arsenic sublimed into the neck of the retort. The red liquor, after being confined for three weeks in a stopped phial, was still smoking, and exhaled the same detestable smell as before; it produced no alteration in syrup of violets, and occasioned only a very feeble effervescence with carbonated alkali, depositing a little flocculent sediment: it occasioned a white precipitate in a solution of corrosive sublimate: being poured into a filter, in order to separate a yellowish thick portion that had separated from the rest, scarcely had a few drops passed through, than a dense suffocating vapour began to rise accompanied by an ebullition at the edges of the vessel, and immediately followed by a beautiful rose-coloured flame which lasted several seconds.

A hot solution of arsenious acid dissolves some of the metals, particularly copper, iron, and zinc; the differences, however, between these and the metallic arseniats have not been ascertained with much accuracy.

§ 9. *Arsenic Acid.*

The properties of the white oxyd of arsenic that have been mentioned in the preceding sections, especially its ready solubility in water, its crystallizability, its taste, its habitudes with alkalies and metals, had long induced a suspicion of its saline nature. This suspicion was at length confirmed by Macquer's valuable discovery of the *arsenical neutral salt* (see § 10. arseniat of potash); but chemists still continued ignorant of the precise difference between this and the liver of arsenic (arsenite of potash). The illustrious Scheele first cleared up this difficulty, and pointed out a method of procuring the arsenic acid in a state of purity, and uncombined with any other substances. Bergman's valuable essay on the same subject confirmed and extended the discoveries of his friend and countryman, and more recent experiments have brought new accessions to the interesting facts already collected. Arsenic, as well as some others of the metallic bodies, is not only a combustible and oxydable, but also an acidifiable base. It combines with oxygen, in at least three different proportions. By the spontaneous action of air and moisture, at the usual temperature, it is converted into the black oxyd, an additional portion of oxygen is absorbed by the assistance of a higher heat, forming the white oxyd; and by means, that we shall now proceed to mention, this latter substance may be saturated with oxygen, forming a perfect acid; the *arsenical*, or ARSENIC (*acidum arsenicum*, or *arsenici*, *acide arsenique*, *arseniksaure*.)

The method recommended by Scheele for the preparation of arsenic acid is the following.—Take two parts of finely powdered white oxyd of arsenic, and put it into a capacious tubulated retort, adapted to a quilled receiver, and fixed properly in a sand-bath; then pour in seven parts, by weight, of strong and pure muriatic acid, and close the tubulure of the retort; as soon as the acid begins to boil, the arsenic will be rapidly dissolved; and when the whole is taken up, lower the heat, and add three and a half parts of concentrated nitric acid; the mixture will immediately begin to foam, and there will be a copious extrication of nitrous gas.

The distillation is, at the same time, to be proceeding gradually, as long as any nitrous gas is produced; and when this ceases, one part more of the white oxyd of arsenic may

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be added. As soon as this is dissolved, pour into the retort one and a half part of nitric acid, and a fresh effervescence will take place. The whole is now to be distilled to dryness, and towards the end of the process the heat must be increased till the bottom of the retort, with its contents, is red hot. After the retort is grown cold, it must be broken, and there will be found within it a saline mass, which is the dry arsenic acid. In order to preserve it in its solid state, it must be put into a dry, well-stopped phial. The proportion of acid thus procured is nearly equal to the quantity of white oxyd employed. The use of the muriatic acid in this process, seems to be merely that of a solvent of the arsenical oxyd, which is thus presented to the action of the nitric acid in a state of extreme division. The nitric acid is decomposed into nitrous gas and oxygen, the former of which flies away, while the latter is expended in acidifying the oxyd; by the subsequent red heat, the undecomposed residue of the nitrous acid, and the muriatic, are driven off in vapour, and the arsenic acid alone remains behind. It generally, however, corrodes the retort, in a greater or less degree; whence the solid acid, when boiled with water, leaves a small insoluble residue of filix.

Bergman's method is to make a hot saturated solution of white arsenic in muriatic acid, and to add double the weight of nitric acid. The effervescence, however, thus occasioned, is so great, that a considerable portion of the arsenic is driven over in the form of butter of arsenic, and the consequent produce of acid is much diminished, the quantity of this being estimated by Bergman at no more than 50 per cent. of the white oxyd employed. Weigleb, by repeatedly returning the liquor collected in the receiver into the retort with fresh nitric acid, obtained $112\frac{1}{2}$ of arsenic acid for every 100 of oxyd.

Another method of preparing this acid, also discovered by Scheele, is by oxymuriatic acid. Take one part finely pulverized black oxyd of manganese, and mix it with three parts of strong muriatic acid, in a tubulated retort, large enough to allow ample room for the effervescence of the mass: the retort is to be connected, in the usual way, with a Woulfe's apparatus, containing the white oxyd of arsenic and a little water. By a gentle heat, the muriatic acid becomes oxygenated at the expense of the manganese, and passes into the bottles in the form of oxymuriatic acid; here it is decomposed, and the muriatic acid unites with part of the arsenic, while the oxygen combines with another portion. This compound liquor being then gently distilled to dryness, and towards the end of the process the bottom of the retort being made red hot, a complete separation will take place; in the receiver there will be found distilled muriatic, or butter of arsenic, and the saline mass remaining in the retort is arsenic acid.

A simpler way of procuring the acid, is to heat together the white oxyd of arsenic, with diluted nitrous acid, in a retort, and when the solution is complete, to add some strong nitric acid, and proceed to distillation: much nitrous gas will be given out, and some orange-coloured acid will come over into the receiver; return this upon the mass in the retort before it becomes dry, together with a fresh portion of strong nitric acid, and thus repeat the cobobation till the extrication of nitrous gas has almost ceased; then distil to dryness, and make the bottom of the retort red hot; all the remaining oxyd of arsenic and nitrous acid will be driven off, and nothing will be left behind but pure arsenic acid.

Besides the above processes, Pelletier has described another method of procuring the acid of arsenic. He mixes the white oxyd with nitrat of ammonia, and subjects the

mass to distillation in a luted retort. It is necessary to begin with a very gentle degree of heat, for the decomposition of the ammoniacal salt is otherwise so rapid, that a large portion of the oxyd of arsenic is carried over into the receiver. But by proper management, the operation goes on more slowly and quietly; there passes over some nitrous acid, and by a slight increase of the heat, ammoniacal gas is also produced; towards the end of the process, a little white oxyd usually sublimes, and a solid vitreous mass of arsenic acid remains at the bottom of the retort, which, when heated red hot, becomes perfectly pure.

Arsenic acid is a solid vitreous mass, of a milky white colour: its sp. gr. according to Bergman, is = 3.391. It fuses at a temperature a little below red heat, and becomes a transparent colourless fluid; but by cooling, it again becomes milky. When raised to a full red heat, it begins to boil, and gives out a portion of its oxygen; being slowly converted into white oxyd of arsenic, which sublimes in proportion as it forms. If this experiment is performed in a covered crucible, after a time, almost the whole of the arsenic acid will be dissipated, and the residue will be found closely adherent to the sides of the vessel, having dissolved a portion of its earth, and being thus converted into a permanent glazing. Arsenic acid is wholly insoluble in alcohol; but has so strong an affinity with water, as to deliquesce by exposure to a moist air: it dissolves completely in three or four times its weight of water, and has not been obtained in a crystalline form, either by refrigeration or evaporation. It has a sour, caustic, metallic taste, and reddens litmus tincture, though it produces no change on syrup of violets. Charcoal powder, digested with the aqueous solution, exerts no chemical action whatever on it, but if the mixture is distilled to dryness in a close retort, as soon as the bottom begins to grow red hot, the whole mass takes fire with violence, and the acid is deoxygenated, a beautiful sublimate of reguline arsenic being found in the neck of the retort. Sugar, and oil of turpentine, or any of the expressed oils, are charred even by digestion with a saturated solution of the acid. Six parts of the acid digested with one of sulphur suffer no change, but when the mixture is distilled in a close retort, as soon as the water is driven off, and the sulphur begins to melt, a sudden combination takes place, accompanied by a copious extrication of sulphureous acid gas, and the whole contents of the retort rise almost instantaneously, and attach themselves to the upper part in the form of beautiful realgar. It combines with various alkaline, earthy, and metallic bases, forming a genus of compound salts, known in chemistry by the name of ARSENIATS. None of the acids appear to have any action on the arsenic, for though it is soluble in some of them, it may be separated again unchanged. It unites with the boracic and phosphoric acids by fusion, but neither suffers nor occasions any decomposition.

The order of its affinities, according to Pearson, are, in the moist way, lime, barytes, strontia, magnesia, potash, soda, ammonia, alumine, metallic oxyds, water.—In the dry way, lime, barytes, strontia, magnesia, potash, soda, metallic oxyds, ammonia, alumine.

§ 10. Arseniats.

1. Arseniat of Potash.

If a solution of arsenic acid is dropped into caustic potash, till the mixture ceases to change syrup of violets green, and turns tincture of litmus red; thus shewing an excess of acid; there will be obtained by evaporation a crystallizable salt, arseniat of potash. But if on the other hand potash be added to arsenic acid till the mixture turns syrup of violets green, but produces no change on tincture of litmus,

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mus, an uncrystallized salt is the result, which being evaporated to dryness, again deliquesces on being exposed to the air. These varieties of arseniated potash are, however, rarely made by the direct union of their component parts, but from the white oxyd of arsenic and nitre. The phenomena attending this process we shall therefore first explain, before we enter upon an enumeration of the properties of the salt.

Let any quantity of nitre be melted in a crucible, the bottom of which is heated red, and small portions of white oxyd of arsenic be projected at intervals, taking care not to add a second portion till the effervescence and disengagement of the nitrous gas occasioned by the former has ceased. By degrees the matter in the crucible, provided the heat is not augmented, will grow thick; and being then examined by solution and crystallization, will be found to redden litmus, and consist of arseniat of potash in a crystallizable state, and some undecomposed nitre. If, however, the mass in the crucible is kept for a few minutes at a little higher heat, it will enter into perfect fusion, and give out some nitrous gas; after a short time it will again grow thick, and being then dissolved in water, will turn syrup of violets green, and refuse to crystallize, forming what Macquer and the old chemists call *Nitre fixed by arsenic*.

If a mixture of equal parts of nitre and white arsenic be put into a crucible (or still better, into a Florence flask), and the flask be heated gradually in a sand bath, till its bottom is obscurely red, there will happen a very copious disengagement of orange-coloured vapours; when these cease, the vessel is to be withdrawn from the fire, and will be found to contain a white saline mass, which, by solution in hot distilled water, and evaporation, will yield arseniat of potash, formerly called after the inventor *Macquer's neutral arsenical salt*. When, on the contrary, two parts of nitre and one of white arsenic are subjected to the above treatment, the result is an uncrystallizable deliquescent mass, the alkaline arseniat of potash. This may be converted into the crystallizable or acidulous arseniat, either by the addition of arsenic acid, in which case the whole will be arseniat of potash, or by sulphuric acid, which neutralizing the alkali, the liquor will yield by crystallization arseniat and sulphat of potash. In opposition to these facts, which are mentioned by Bergman, Scheele, Macquer, and most modern chemists, Pelletier has recorded an experiment, which, though he draws no conclusions from it, seems incapable of being reconciled with the theory of an alkaline and acidulous arseniat of potash. He mixed, according to the process of Lefevre, two ounces of white arsenic with four of nitre, and put the whole into a large crucible, the mouth of which was then closed with a smaller inverted crucible pierced with a small hole to give vent to the nitrous vapour. It was subjected first to a very gentle heat for three hours, and then exposed to a red heat for eight hours longer. The matter thus prepared was a compact saline white mass, easily separating from the crucible, and weighing one gros less than four ounces. Being dissolved in distilled water and filtered, there was separated a gelatinous mass, consisting no doubt of some of the potash combined with the earth of the crucible. The clear liquor that passed the filter afforded by evaporation crystals of arseniat of potash, and the mother water consisted almost wholly of caustic potash, which united quietly with sulphuric acid, and formed sulphat of potash. Here therefore we have an example of the crystallized arseniat formed in the midst of caustic potash, a circumstance wholly unaccountable if an excess of acid is necessary for this purpose.

Arseniat of potash crystallizes in rectangular quadrilateral prisms, terminated by four-sided pyramids. In close

vessels it fuses at a low red heat, but shews no signs of decomposition; when made to boil violently in an open vessel it gives out oxygen, and acquires alkaline properties. It neither effloresces nor deliquesces in the air. It is soluble in about six parts of boiling water, and deposits crystals by cooling. It is decomposable by lime and barytes, either in solution or by fusion, the acid quitting the alkali to unite with the earths. The sulphuric, nitric, and muriatic acids, abstract from it the alkaline base, setting the arsenic acid at liberty, and forming sulphat, nitrat, or muriat of potash. It decomposes and precipitates almost all metallic oxyds from their combinations, forming insoluble metallic arseniats. In the dry way, it is decomposed by charcoal, and the product is reguline arsenic of great beauty and purity, and carbonated potash. Sulphur, iron, and zinc, also decompose this salt, the reguline arsenic combining with one part of them, while the other is oxygenated.

2. *Arseniat of Soda.*

According to Scheele, if soda is saturated with arsenic acid, crystals of arseniat of soda are obtained, similar in figure to those of the preceding salt; however, the solution of them has no effect on litmus, but turns syrup of violets green. Some arsenic acid superadded, takes away the crystallizability of the mass, which, when evaporated to dryness, deliquesces in the air. Pelletier, by decomposing nitrat of soda by oxyd of arsenic, in the manner already recited for preparing arseniat of potash, obtained a permanent salt in truncated hexahedral prisms. The other properties of arseniat of soda are unknown; probably, however, they are analogous to those of the preceding article.

3. *Arseniat of Ammonia.*

Liquid ammonia, saturated with arsenic acid, affords by evaporation a salt similar in form to the rhomboidal crystals of nitrat of soda. It turns syrup of violets green, but produces no change on litmus; by a gentle heat it becomes opaque, and part of the ammonia flying off, it exhibits an excess of acid. In this state it forms long acicular acid crystals, which deliquesce in the air. When distilled, it first gives out some ammoniacal gas, then fuses, and again becomes solid after it has parted with some oxyd of arsenic which sublimes. By a further increase of temperature it again becomes fluid, and is now found to be wholly changed into arsenic acid. Muriat of Ammonia is decomposed by distillation with three parts of arsenic acid. There first rises muriatic acid, then ammoniacal gas, afterwards oxyd of arsenic, and arsenic acid remains behind; hence it is obvious that part of the arsenic acid is deoxygenated at the expense of a portion of the ammonia.

4. *Arseniat of Lime.*

If arsenic acid is dropped into lime water, a white precipitate is thrown down, which is resolvable in a fresh portion of acid; the solution being now evaporated, small crystals are obtained of arseniat of lime. Another way of procuring this salt is by digesting chalk in arsenic acid. An effervescence ensues, and afterwards by cooling, copious crystals are deposited. Arseniat of lime is sparingly soluble in water, and the solution is decomposed by sulphuric acid, sulphat of lime being precipitated. The affinity of arsenic acid for lime, is also inferior in the moist way to nitric, muriatic, or even acetic acid. Yet nitrat, muriat, and acetate of lime are decomposable by means of double affinity, by the uncrystallizable arseniat of potash, and the arseniats of soda and ammonia, arseniat of lime being in all these cases precipitated. This salt, if heated strongly in a close crucible, enters into fusion, forming a white enamel-like mass, but without undergoing any decomposition; by mixing with charcoal and subsequent heating, the greater

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part of the acid is oxygenated, and reguline arsenic is sublimed. Arsenic acid in the dry way has so powerful an affinity for lime, as to be capable of uniting with this earth to the exclusion of sulphuric, fluoric, and nitric acids.

5. *Arseniat of Magnesia*

Acid of arsenic, when digested upon magnesia to saturation, forms a coagulum; this being dissolved in a fresh quantity of arsenic acid, and evaporated, yields a jelly which by further privation of its moisture is converted into an uncrystallizable viscous mass. The sulphat, nitrat, muriat, and acetite of magnesia, are not decomposable by arsenic acid, but readily so by the alkaline arseniats; the precipitate thus produced is insoluble in water, but readily so by acids. When heated in a close vessel with charcoal, it exhibits the same phenomena as arseniat of lime.

6. *Arseniat of Barytes.*

This salt may be obtained in an earthy form, according to Scheele, by digesting the acid upon barytes; at first the barytes dissolves readily, but when the acid is saturated, a spontaneous precipitation of arseniat of barytes takes place. Fourcroy informs us, that it may be procured in a crystalline form by mixing a warm concentrated solution of acetite of barytes and arseniat of potash; a decomposition takes place, and bright spicular needles of arseniat of barytes are deposited. In the moist way this salt seems undecomposable except by sulphuric acid and the easily soluble sulphats. In a full red heat, however, even sulphat of barytes is decomposed by arsenic acid, the sulphuric acid being volatilized.

7. *Arseniat of Alumine.*

Moist earth of alum is readily soluble in arsenic acid, and by evaporation it yields a gummy uncrystallizable mass. The alkaline arseniats will occasion a precipitate in sulphuric, nitric, and muriatic acids, previously saturated with earth of alum, and this precipitate is soluble in acids, though not so in water. It must however be remembered, that the earth precipitated from ALUM by an alkali is not pure ALUMINE, and therefore that the preparation here described is not arseniat of alumine. Scheele indeed expressly mentions, that the solution mixed with charcoal, and evaporated to dryness, and then ignited in a close vessel, yields a sublimate of orpiment, together with reguline arsenic and sulphureous acid, and that the residue, when dissolved in sulphuric acid, deposits after a time some crystals of alum. The arsenic acid, even by a long digestion with white clay, does not take up any portion of it. One part of clay and four parts of acid combine by fusion into a vitreous mass; and this, by being again heated with charcoal, affords a beautiful sublimed regulus of arsenic.

The combinations of Ironia, and the other earths with the arsenic acid, have not as yet been examined. The metallic arseniats will be found under the several metals.

§ 11. *Historical Notice concerning Arsenic.*

The native sulphuret of arsenic, was the only one of the arsenical ores known to the ancients. Aristotle speaks of the *Σανδαράχη*; and his pupil Theophrastus, in his treatise on minerals, mentions the *Αρσενικός*, corrupted afterwards by Dioscorides and others into *Αρσενικός*. Pliny also, in his Natural History, describes the arsenicum, auripigmentum, and sandaracha. The Syrian orpiment, probably from its colour, was supposed to contain gold, and an ineffectual attempt by order of the emperor Claudius to extract this metal from it, is recorded by the Roman naturalist just mentioned. The sandaracha of Pliny is realgar, being represented by him as friable, of a ruddy colour, and analogous to litharge. His arsenicum is expressly said to be of the same substance as sandaracha, and is thus described.

"The colour of the best is superior even to gold; the inferior sorts are paler, or else approach to the hue of sandaracha. It is of a fealy texture." The two last do not appear to have been considered of the same nature as auripigmentum: and the only use to which they were applied, was that of a caustic in medicine, and a pigment. The first mention of white arsenic is in the works of Avicenna, who lived in the 11th century. Paracelsus affirms, that arsenic sublimed with egg-shells becomes like silver; and in 1673, Lemery published the method of obtaining the regulus by sublimation from a mixture of white arsenic, fixed alkali, and soap. Albertus Magnus and Beccher considered arsenic (by which they meant the white oxyd) as of a saline nature. Kunkel was also of the same opinion; and Macquer, by his discovery of the arsenite and arseniat of potash, demonstrated that in these combinations it held the place of an acid. Finally, Scheele proved, that the base of arsenic (according to the Stahlia theory then in vogue) was not only similar to, but was actually an acid, by discovering the method of obtaining it in an uncombined state.

Arsenic being found in the ores of many metals, often serving as a mineralizer to them, and adhering with great obstinacy to them even when brought into the state of regulus, was long considered, like mercury, as an essential component part of metallic substances, nor was this opinion abandoned till the celebrated essay of Monnet in reply to a prize question proposed by the Royal Berlin Academy, in 1773, on the nature and peculiar agency of arsenic in the formation of metals. In this treatise he shews arsenic to be a peculiar metal, essentially differing from all others, and instead of being a necessary component part of them, is often totally absent, and when present is so far from perfecting them, that it always deteriorates and obscures their characteristic properties.

§ 12. *Uses of Arsenic.*

In the reguline state, it is used to whiten COPPER, and enters as an ingredient in several kinds of SPECULUM METAL. Oxyd of arsenic is employed as a poison for rats and other vermin, and a flux in GLASS-making. Orpiment and realgar are of extensive use in DYING and CALICO-PRINTING, and as a pigment. For the deleterious properties of arsenic, and its medical uses, see the next article.

Pünii Hist. Nat. Bergman's Essays. Scheele's Essays. Pelletier, Memoires de Chimie, vol. i. Encycloped. Method. art. Arsenique. Fourcroy, Syll. des Connoiss. Chem. vol. v. Macquer's Chemisches wörterbuch, art. Arsenik. Gren's Systematisches handbuch der Chemie, vol. iii.

ARSENIC, in Pharmacy, and its Operation upon the Human Body.—Arsenic is perhaps of all natural substances, that which exerts the most virulent and dreadfully active operation upon the living animal, when taken into the stomach or any other part of the system.

We ate, unfortunately, too familiar with its effects as a poison; its cheapness and abundance rendering it easily accessible to malevolence, or obnoxious to carelessness, and the history of almost every year adds to the number of sufferers from this formidable mineral.

Nevertheless, as every poison, when judiciously managed, may be converted into a powerful medicine, several very skillful practitioners have attempted, and not without advantage, to add this substance to the materia medica, and hence the effects of arsenic become important to the physiologist in a double point of view, both that he may relieve and counteract them, when they operate as a poison; and manage them with judgment and caution, when they are intended to cure disease.

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We may begin by observing, that all the preparations of arsenic appear, as far as experience goes, to operate in a similar manner, though some with much more activity than others, in proportion to their quantity; and likewise it is fully ascertained, that sulphur moderates the operation of this metal in a very striking manner, as indeed it does that of all the other metallic medicines. This comparative mildness of the sulphuret may be the reason why the native orpiment and realgar have been employed medicinally for ages by some of the oriental nations, particularly, among other cases, as an antidote to the bite of the cobra, and other venomous serpents; and we may remark, that the native arsenical sulphures (as observed by Hoffman, and confirmed by subsequent experiments) are much milder and safer in their operations, than any of the artificial combinations of these two minerals.

When the active arsenical salts (the white arsenic for example) have been taken into the stomach in the quantity of a few grains or upwards, the most dreadful consequences are observed to succeed: these are, first, a most horrible and almost indescribable anxiety at the pit of the stomach, to which succeeds a very acute burning pain in this organ, generally attended with violent retching and vomiting, whereby, indeed, the life of the sufferer is sometimes preserved, owing to the rejection of the arsenic; this is often followed with severe purging, and the pain proceeds with increased virulence, to the bowels, and almost the whole of the alimentary canal; to this succeed, in a shorter or longer time, convulsive tremors of the limbs, cold sweats, and a very sudden and characteristic swelling of the emphysematous kind, which puffs up the face, the neck, and at last every other part of the body. If no relief be obtained from these dreadful symptoms, they quickly proceed to the destruction of life; the unhappy sufferer becomes insensible to surrounding objects, lying on his belly, with every muscle distorted by the violence of the pain, his hands clenched, his eyes bloodshot and glassy, his jaws now immovably fixed, and unable to swallow either solids or liquids, his limbs convulsed with severe cramps, his face and neck so much swelled that the features can hardly be recognized, till at last death terminates his agony. On inspecting the body after death, the stomach is always found highly inflamed, partly gangrenous, and often actually corroded by sphacelated spots. The same inflammation and partial mortification also extend in most cases to parts of the small intestines. The body is said to putrefy with remarkable rapidity.

Even when persons have recovered from poisoning by arsenic, they feel its effects long after in griping pains, tremors of the limbs, partial paralysis, loss of appetite, and often a lingering hectic fever, which remains for a considerable time, and without great attention to health, are apt materially to injure the constitution. An exposure to the fumes of arsenic occasions similar accidents, particularly griping, bloody urine, and contraction of the body, and sometimes a general eruption like the nettle-rash; and hence in all chemical operations with this dangerous metal, the operator should be particularly cautious of avoiding its noxious fumes.

Arsenic, when applied to any wounded or ulcerated surface of the body, is equally liable to produce the above-mentioned symptoms in a greater or lesser degree; but as the first that appear are generally pains in the stomach and bowels, and swelling of the face, sufficient warning is hereby given to withdraw the cause of them.

A variety of remedies against the poison of arsenic has been proposed, all of which are intended to fulfil these two indications, to remove the noxious ingredient, and to protect the alimentary canal from its baneful operation. The first object is to get rid of the poison by most copious vomiting

and purging; and for this purpose all the substances known to produce these effects, may be employed with the greatest freedom. It has been thought that the rougher mineral emetic and purgative medicines should be avoided, and certainly the milder vegetable substances appear the most eligible; but it is of such infinite consequence to apply an immediate remedy, that the preference due to one over another medicine can hardly ever be equivalent to the mischief incurred by allowing this most corrosive and deleterious of all poisons to remain a moment longer in the stomach than can be avoided. Hence the first emetic medicine at hand is always the best, nor should the mechanical means of exciting vomiting, as by thrusting a feather down the throat, and the like, be neglected. In the intervals of vomiting, the stomach should be deluged with any mild mucilaginous liquid that is at hand; milk, gruel, linseed tea, broth, oil of any kind, or even warm water, in the largest possible quantity, should be taken, and where the arsenic itself excites constant vomiting, as is often the case, no other remedy than these mucilaginous or oily liquids is required. These should be assiduously persevered in till the burning pain and other symptoms produced by the arsenic are removed, and only the forenoon consequent to such a violent exercise of the alimentary canal remains; after which a cautious and judicious use of opiates will prove of material benefit: but the state of health will require much attention for a considerable time, before the constitution can entirely recover the effects of so rude a shock. When the poison has remained so long in the stomach that the sufferer lies insensible, racked with pain and unable to swallow, recovery seems to be hopeless; in such cases, the most probable method of exciting vomiting is to lay some tartar emetic upon the tongue, part of which may perhaps be carried by the saliva into the stomach, and relieve it from the poisonous mineral.

Some ingenious men have endeavoured to discover an antidote to arsenic, in the proper meaning of the term; that is, a substance which may prove a peculiar corrective to its baneful effects, by uniting with it when in the stomach, and destroying its acrimony. The well-known effect of sulphur to mitigate the operation of all metallic bodies, readily suggested this as the desired remedy, and the liquid alkaline sulphuret was proposed by Navier, an eminent physician of Chalons in France. Fourcroy has suggested the liquid hydro-sulphures (or solutions of sulphurated hydrogen in water, of which the sulphurated mineral waters are familiar examples) as an improvement on Navier's remedy. Experience, however, has not confirmed the utility of either of these preparations. It is true, that if the poison and the antidote were previously mixed, and in a state of solution, the former would be disarmed of its terrible powers; but to trust to the chance of a mere chemical operation in an organ so irritable as the stomach, so dreadfully susceptible of active inflammation, and actually suffering under a violent injury, which is hastening the destruction of the whole system, is to carry the ideas of a laboratory much beyond the bounds of sober prudence and sound practice.

It has been urged, however, that after the immediate danger from arsenic has been removed by the liberal use of emetics and emollient liquids, much advantage may be derived from the use of the liquid sulphurets. But at this period we have not (in all probability) any of the arsenic to remove, but only the inflammation, the effects of arsenic, and on what ground can sulphurated hydrogen be supposed to be of use in inflammation of the stomach and bowels?

The medical chemist is sometimes called upon by the magistrate to ascertain the presence or absence of arsenic in the stomach of persons who have died with some of the violent

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lent symptoms above described. Some of the appearances, on dissection, have been already mentioned. The presence of arsenic, in substance, in the stomach, is thus ascertained: first, make a ligature round the lower part of the oesophagus, and another at the pylorus, to prevent any of the contents of the stomach from spilling; then take out this organ, empty its contents in a basin, and rinse the inner surface with a little cold water, which add to the other contents. As white arsenic, in substance, is generally that which is found after death by this poison, it will be seen in the form of a heavy white powder, from which the slime, and other contents of the stomach, may be washed off by repeated affusions of cold water, which washings, however, should not be thrown away, but added to the liquid contents. Then let the powder be submitted to the following experiments: boil a portion of it in a Florence flask, in a few ounces of distilled water, and filter the liquid solution; add to a part of the clear liquid some water saturated with sulphurated hydrogen gas, or a few drops of sulphuret of ammonia, and if arsenic be present, a golden yellow sediment will fall down, which will appear sooner if a few drops of acetic acid be added; add to another portion of the solution a single drop of a weak solution of carbonate of potash, and afterwards a solution of sulphate of copper, when the arsenic will be indicated by a yellowish green precipitate, similar to that which is known in chemistry by the name of *Scheele's green*; collect the sediments and dry them, or if there is any of the powder to spare, take a portion of this, lay it upon red hot charcoal, when it will be entirely dissipated in a white dense vapour, having the garlic smell peculiar to arsenic.

But a portion of the white powder suspected to be arsenic should be reduced to the metallic state, which may be done in the following neat manner, proposed by Dr. Black: mix it with two parts of dry carbonate of potash, and one of powdered charcoal; procure a tube eight or nine inches long, and one-sixth of an inch in diameter, of thin glass sealed hermetically at one end; coat the closed end with clay for about an inch, and let the coating dry; then put into the tube the mixture of the powder and the flux, and if any of it should adhere to the inner surface, let it be brushed down by a feather; stop the open end of the tube loosely with a cork, and gradually heat the sealed end only, on a chafing-dish of hot charcoal. The arsenic, if present, will then rise to the upper part of the tube, on the inner surface of which it will form a thin, brilliant, metallic coating, whilst a portion will escape in garlic smelling fumes. When nothing more rises from the heated end, break the tube, and scrape off the metallic crust formed on the upper part. Of this, lay a part on heated iron, when it will totally exhale in a dense smoke, with the peculiar arsenical smell; put another part between two polished pieces of copper (halfpence, for example, rubbed quite bright), bind them together with wire, and expose them slowly to a low red heat; if the enclosed substance is arsenic, it will leave a white stain on the copper.

If it should happen that no white powder is found in the stomach, the liquid contents, when filtered along with the washings, should be evaporated to dryness, and the residue examined in the same manner as the white powder; but this would be a work of greater difficulty on account of the casual mixture with the other contents of the stomach.

By these means the presence of arsenic, even in very small quantity, may be detected by any one tolerably versed in chemical experiments; but, for greater security, it may be advisable to perform separate and parallel experiments with the white arsenic of the shops, and compare the results and appearances.

It is a matter of common observation, that no vegetable or mineral poison, however virulent, exists, which in diminished quantity and by prudent precautions may not be converted into a valuable remedy. This observation will apply even to arsenic, and we have the most respectable testimony to its value in the cure or relief of some complaints which entitles it to considerable notice. The medicinal use of the sulphurets of arsenic may be traced back to very early times, and the Greeks and Romans appear to have used it with considerable freedom. Dioscorides observes that the arsenic (*arsenikon*) is found in the same minerals which produce the sandarach. The test for medicinal purposes, he adds, is of a golden colour, unmixed with any other substance, which easily separates into scales, and comes from Mysia on the Hellespont. An inferior sort comes from Pontus and Cappadocia. It is prepared by roasting on hot coals, with constant stirring till it takes fire, and alters in colour, when it is to be cooled and carefully pulverized. The sandarach is prepared in the same manner as the arsenic or orpiment, and possesses the same virtues. When taken internally, they have a violent corrosive and attritive operation, exciting a burning on the skin, and causing the hair to fall off. These arsenical powders were used principally as external applications, mixed with pitch, oil, or fat, against a variety of cutaneous complaints, itch, phthiriasis, and other defecations of the skin, and also to ulcers of the nostrils and mouth, and condylomata.

Much attention has been bestowed in modern times to the power said to be possessed by arsenic of relieving or curing cancers, when employed both as a topical application, and taken into the stomach. The progress of this disorder is so dreadful, and the remedies usually employed have proved so inadequate to stop its ravages, that any medicine, however severe, may be employed without censure, which affords a chance of permanent relief. We have still to regret that the flattering hopes of a cure, and the real benefit often produced by this metal, have not been confirmed by frequent experiment; but the virtues of this remedy, however, are too important to be neglected. Several medical practitioners and empirics have gained much credit for supposed cures of cancers by remedies which appear to have been arsenical; and Mr. Jussamond, in his valuable *Surgical Tracts* (London, 1789), gives the recipe of an arsenic caustic, called "the earl of Arundel's receipt to cure a cancer," and found in the Harleian MSS. which appears to have been divulged by a woman in the lower order of people, in the year 1638, whose father had long employed it for the cure of cancers.

Mr. Jussamond, in his ingenious work above quoted, gives the history of many cases of cancer in different stages, in which the following arsenical preparations were topically applied:

1. The earl of Arundel's receipt above mentioned, composed of one ounce of yellow arsenic, and half an ounce of bole armenic; or else of one ounce of the yellow arsenic, half an ounce of the red precipitate, and half an ounce of bole armenic.

2. A sulphuret of arsenic, formed in the following way: Take four pounds of sulphur, and one pound of white arsenic, mix and put them into a glass retort, on a sand heat, and lute to the retort a long neck and receiver: raise the fire gradually till the mixture be fused: reject the sublimed portion, and reserve the fixed matter beneath, which must be finely levigated.

3. A mixed sulphuret of arsenic and antimony, formed by melting together in a crucible, with a very moderate heat, the native black sulphuret of antimony (or the common antimony

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timony of the shops), with white arsenic, in proportions varying according to the intention; being two parts of arsenic to one of antimony, where a violent arsenical caustic is wanted; and two parts of antimony with one of arsenic, where a milder escharotic is required.

Mr. Justamond began the above arsenical application, to the open or ulcerated cancers, which he used in the form of powder or scrapings, laid to the most ulcerated parts, whilst he frequently moistened the hard retracted edges of the wound with a solution of muriated iron, with sal ammoniac.

The immediate effect of the arsenic was to give a most acute and burning pain, which constantly attended every fresh application, and probably would be hardly tolerable to any, but to those who are suffering under one of the most dreadful, harassing, and hopeless disorders which ever come under the care of the surgeon. The first beneficial effect of the arsenical powder, was to correct, and almost entirely to remove the sickening stench which attends these species of ulceration; and this was invariably the case, even when it failed to give any other relief. Afterwards the powder (where successful) evidently improved the condition of the sore, and by repeating it daily, with much perseverance and attention, Mr. J. happily succeeded in producing a complete cure. It was only, however, in one or two instances that this was effected; and in others, the poison of the arsenic absorbed into the system, produced its baneful operation with so much rapidity, bringing on partial palsy, and severe pain with cramp in the bowels, that he was obliged instantly to discontinue it; with the unpleasant feeling, that he had added to the already diseased constitution of his patient, the severe disorder occasioned by the arsenical remedy itself. Mr. Justamond then made a trial of the stronger arsenical caustic (two parts of arsenic fused with one of antimony), to schirrous tumours of the breast, before they had proceeded to ulceration, with the view of *turning them out* entire, or as it were dissecting them out by caustic, instead of the knife. In this he followed the example of Guy and Plunkett, who had been celebrated for this species of operation, an operation only to be undertaken when the patient is too timorous to submit to the safer and more expeditious use of the knife. Mr. J. mixed the arsenical caustic with an equal weight of opium, brought the powder to the consistence of an ointment by the yolk of an egg, and having the day before separated the cuticle of the tumor by lunar caustic, he applied the arsenic over the whole surface. The pain was very great for twenty hours, after which it subsided. After some days the tumor began to separate, and by repeating the caustic round the separating edges, the schirrous gland, in about two months, "came out entire as a nut out of its shell, or as if it had been cleanly dissected with a knife."

We shall proceed to enumerate some of the other noted arsenical preparations, employed externally to cancers and schirrous tumours. The following is given as Plunkett's celebrated arsenical caustic, with which the inventor used to extirpate schirrous tumours before they had arrived to ulceration.

4. Take of the leaves of the *ranunculus acris* (crowfoot), and of the *flammula vulgaris* (lesser crowfoot, also a species of *ranunculus*), of each one ounce; of white arsenic levigated, one drachm; of flowers of sulphur, five scruples. The two former plants being fresh gathered and bruised, the arsenic and sulphur are to be added, and the whole beaten into a paste, which is to be formed into balls, and dried in the sun. When used they are to be beaten up with yolk of egg, and applied on a piece of pig's bladder to the surface

of the tumour. This is to remain till the escharotic separates spontaneously. The *ranunculus*, which is an acrid plant, is not here an useless addition, as it assists in separating the cuticle, and till this is done the arsenic is scarcely able to act.

5. The *arsenicum citrinum* (*gelber arsenik*) employed at Vienna, is one of the strongest of these preparations, being composed of ten parts of arsenic sublimed with one of sulphur. When used, the scrapings of it are laid on the cancerous ulcer till it is consumed. The pain which it occasions is most severe.

Mr. Febure's arsenical remedy (*Remède éprouvé pour guerir radicalement le Cancer occulte, ou ulceré*, Paris, 1775), which excited much attention at the time, is the following:

6. Take one pint of water; one ounce of extract of cicuta; three ounces of Goulard's extract; one drachm of liquid laudanum; and ten grains of arsenic; mix them into a liquid, with which the cancer is to be smeared every morning and evening.

Lastly, of the external applications, we may mention the following, which is simple, and probably as efficacious in ulcerated cancer as any of the preceding.

7. Take a solution of white arsenic in water, in the proportion of one grain to two pints, mix it with crumb of bread into a poultice, and apply it to the open sore.

Febure appears to be the first who ventured to recommend the internal use of arsenic in the cure of cancer; a practice which has rarely been openly followed, though probably this mineral forms the basis of many of the empirical remedies for this disease. Febure's internal arsenical medicine is the following:

8. Take of white arsenic, two grains; of syrup of chicory with rhubarb, half an ounce; of water, one pint. Of this one table spoonful is given every morning and evening, in an ounce of milk, with half a drachm of syrup of poppies. The dose is to be gradually increased, as the patient can bear it.

Mr. Justamond also was able to give internally as much as five grains of the arsenical sulphuret (N^o 2.) daily, without injuring the patient.

The inference which the reader will be disposed to draw from all that we have given, concerning the efficacy of arsenic in cancerous complaints, will not probably be very encouraging to its use. The actual pain attending its application is always very acute, though perhaps not more so than the disease itself; but the quantity of the remedy here requisite, either for external or internal use, is so considerable, as to incur great danger of poisoning the constitution irretrievably, and inducing calamities almost equal to those which it is designed to counteract.

With more satisfaction we can conclude our account of this mineral, with a history of its employment in another obstinate and often dangerous disorder, in which it promises very great advantage, unattended with any considerable risk where managed with great prudence and discretion. This is, in obstinate and lingering agues, such as have resisted ordinary remedies, and are proceeding gradually to undermine the constitution by their periodical and repeated paroxysms.

We owe the introduction, or at least the publicity of this remedy to Dr. Fowler's highly valuable series of experimental cases, undertaken in the Stafford infirmary, in 1784, and published in the following year. The circumstance that directed his attention to this remedy, was the very great sale and successful operation of certain *patent ague drops*, which were (probably with reason) supposed to be a preparation of arsenic.

Dr.

Dr. Fowler's arsenical solution is thus prepared.

9. Take white arsenic in fine powder, and pure salt of tartar, of each sixty-four grains, put them into a Florence flask, or other glass vessel, along with half a pint of distilled water, heat them slowly to boiling, till the ingredients are dissolved; when cold, add half an ounce of compound spirit of lavender, and distilled water sufficient to make up the whole quantity one pint, or rather fifteen ounces and a half troy-weight.

Of this solution, one ounce, apothecaries measure, contains four grains of arsenic, or one dram, half a grain; and Dr. F. calculates each dram to be equivalent to eighty drops.

In preparing this liquid, the operator should be aware that the salt of tartar of the shops, even the purest, seldom makes a perfectly clear solution with water, but leaves a small earthy sediment, which no continuation of the boiling will dissolve. Instead of this alkali, twice the weight of pure nitre has been employed, which promotes the solubility of the arsenic, and is perhaps somewhat preferable to the salt of tartar. These salts are not necessary to the immediate solution of arsenic, but they prevent this metallic oxyd from separating again from the water by long keeping.

The proportion of arsenic to water, in the solution, may be varied from the form above given; but as white arsenic requires eighty times its weight of cold water to remain dissolved, not less than this quantity should be employed, and the nitre or alkali should never be omitted, as it is of the utmost importance for the practitioner to know precisely the dose of arsenic which he prescribes.

Dr. F. found that for the cure of intermittents it was of importance to give the arsenic in divided doses as fast as the patients could bear it, without experiencing inconvenience from its poisonous effects. Strong adults could generally bear about ten drops of the solution (equivalent to one-sixteenth of a grain of arsenic) for a dose, which he repeated twice, or, if convenient, thrice a day. By slow increase, some were able to bear as much as twenty drops for a dose, and this course was continued for five days, when, if the fits of the intermittent were suspended, the drops were interrupted for two or three days, and then resumed for three days longer to prevent a relapse.

Infants could bear about two drops twice a day, and young or delicate persons took the solution in intermediate doses from two to ten or twelve drops.

The operation of this powerful remedy was truly surprising in checking almost immediately, and finally removing the paroxysms of the most obstinate intermittents, some of which had resisted bark and other remedies for a considerable time. In a few, however, it failed entirely; and in others the poisonous effects of the arsenic came on so speedily that it could not be continued, and the cure was completed by bark and other tonics.

Every practitioner will be aware of the great caution necessary in the exhibition of a remedy, which, though safe in prudent hands, might induce the most dangerous accidents if exposed to carelessness or ignorance. In most of the successful cases, the medicine removed the disease without producing any of the inconveniences attending its use in larger doses; but when the arsenic began to shew its poisonous effects, the symptoms were, nausea, often accompanied with a slight griping and purging, swellings of the soft integuments of the body, particularly the face, sometimes ureasiness at the stomach, and a slight eruption like the nettle-rash; and, in a very few instances, head-ach, sweat, and slight tremors. By attending to these serious and very characteristic warnings, and by the assistance of gentle aper-

ients, opiates, and other means which will readily suggest themselves to the prudent physician, this terrible mineral may be enlisted into the service of the healing art, whilst its cheapness, insipidity, and great activity in a very small bulk, may sometimes render it preferable to the safer drugs and barks, which oppress the stomach by their bulkiness, and disgust by their nauseous flavour.

We may add that,

10. The arseniat of potash, described in § 10. of the preceding article, has been employed in intermittents with the same effect as the solution, and its ready solubility and uniformity of composition may perhaps give it a claim to preference. The medium dose of this salt may be a fifth of a grain three times a day.

Arsenic has been occasionally employed with considerable success, when applied to the surface of the body in a variety of cutaneous complaints; and it might be adopted with more freedom, if it were not for the extreme danger to which any neglect of the warning symptoms of poisoning might expose the patient, a danger the more likely to be in chronic complaints often neglected, and not always sufficiently under medical inspection. Orpiment mixed with tar, with digestive ointment, or other unctuous substances, has been found of eminent service in tinea capitis, a prescription handed down to us from the ancients; but if the medical practitioner will venture on this hazardous, and not often necessary remedy, he should never forget the much superior virulence and activity which the artificial orpiments and arsenical sulphurets possess over the natural. Orpiment and quicklime, boiled in water for a short time, form a liquor which, if often applied to the cuticle, causes the hair to fall off; and the growth of it, when thus checked, is seldom renewed. Dioscorides. Plenck's Pharmacologia Chirurg. 1782. Fowler's Medical Reports on the Effects of Arsenic, 1786. Justamond's Surgical Tracts, 1789. Pharm. Danica. Henry's Epitome of Chem. 1801, &c.

ARSENIC, in *Surgery*, has been long employed as a local remedy. It is chiefly recommended in cases where a strong escharotic is indicated, and especially in cancerous or fordid ulcers; but, as its effects are entirely caustical, our account of the mode in which it should be applied is referred to the foregoing article and to that of CAUSTIC.

ARSENIUS, in *Biography*, archbishop of Malvesia in the Morea, was a learned philologist, in the sixteenth century. He submitted to the church of Rome, and thus incurred the displeasure of his brethren of the Greek church; so that he was excommunicated by the patriarch of Constantinople. He died at Venice in 1535. His works are, "A Collection of Greek Apophthegms," published at Rome; and "A Collection of Scholia on seven of the Tragedies of Euripides," printed at Venice, in 8vo. in 1534. Fabr. Bib. Græc. l. v. c. 41. § 8. t. x. p. 222.

ARSENOTHELYS, among *Ancient Naturalists*, the same with hermaphrodite.

The Greeks use the word both in speaking of men and beasts.—It is formed from *αρσεν* and *θηλυς*, male and female.

ARSEVAL, in *Geography*, a town of France, in the department of the Aube, and chief place of a canton in the district of Bar-sur-Aube, twenty-three miles east of Troyes.

ARSIA, in *Ancient Geography*, a small river which had a northern course, and served as a boundary between Histia and Illyria, to the north of the Flanatic gulf. It there terminated Italy on the north-east of the Polatic promontory.

ARSIANA, or ARIANA, a town of Asia, in Susiana, seated on a mountain to the west of the Tigris.

ARSICARITA,

ARSICARITA, an episcopal see of Africa, in Numidia.

ARSICUA, a town of Germany. Ptolemy.

ARSINARIUM, a promontory of the western coast of Africa, in Lybia Interior, now *Cape Verd*, or *Cape Bojador*.

ARSINIA, ARSINI, a town of Asia, in Armenia, W. N. W. of Amida, and near it.

ARSINNUARITANUS, an episcopal see of Africa, in Mauritania Cæsariensis.

ARSINOË is a name given to several places not only in Egypt, but also in other countries; and according to Bryant (*Anc. Myth.* vol. i. p. 209.), it was synonymous with Arsene, Arsine, and Arsiana. Arsinoë, says this writer, is a compound of *Arez-ain*, Sol's fons; and most places so denominated will be found famed for some fountain. To this purpose he observes, that Arsinoë in Syria had its name from the streams which issued out of the rising ground on which it stands; Arsine and Arsiana in Babylonia had fountains of bitumen; Arsene in Armenia was a nitrous lake; near Arsinoë upon the Red Sea were streams of bitter waters; and Arsinoë near Ephesus had waters equally bitter. The *first Arsinoë* we shall mention was a town of Egypt, seated on the west side of the Arabian gulf near its extremity, and not far from the situation of the modern Suz. Ptolemy and Strabo mention this city; and the latter says, that it was called by some Cleopatriis. It is said, that it was called Arsinoë from a queen of that name in the time of the Ptolemies; and that Cleopatra embellished it with new buildings, whence it was called after her name. In order to bring the trade from India, which began to revive at Tyre its ancient station, to center in Alexandria, Ptolemy Philadelphus undertook to form a canal, an hundred cubits in breadth, and thirty in depth, between Arsinoë and the Pelusiac branch of the Nile; and Mr. Rennell states the distance between Pelusium (Tinah), and Arsinoë (Suez), at fifty-six British miles; and by means of this canal he proposed to convey the productions of India to that capital wholly by water. But the work was never finished. A *second Arsinoë* was a town of Egypt, the chief place of a nome which bore its name, on the west side of the Nile, above Memphis, south of Acanthon and north of Ptolemais. It was also called the "City of Crocodiles," because the inhabitants worshipped that animal, and bred some of the species in the neighbouring lakes. This city must have stood at some distance from the river, since Ptolemy calls it a Mediterranean metropolis. It retained its name Arsinoë in the time of Adrian. Imperial Greek medals were struck in this city in honour both of Trajan and Adrian. It is now called FAÏOUM. The province, of which it was the capital, contained the LABYRINTH and its twelve palaces, the lake Mæris, and the pyramids described by Herodotus, but not existing in the time of Augustus, as they are not mentioned by Strabo; and it is extolled by Strabo (l. xvii.) for its beauty, fertility, and the variety of its productions. It abounded with wine, corn, vegetables, and seeds of every kind. A *third Arsinoë* was a port of the Red Sea, to the left of the entrance into it and near the promontory *Dire* or *Direx*, according to Strabo and Ptolemy. This was sometimes called Berenice. A *fourth* is placed by Strabo on the Red Sea, considerably more to the north than Philoteris. Its warm, saline, bitter waters flowed from a high rock and ran into the sea near this town. A *fifth* was a town of Africa, in the Cyrenaica, between Lepris and Ptolemais; the same that was formerly called "Teuchira." A *sixth* was a town of Cæloxyria, according to Steph. Byz. A *seventh*, a town of Asia, in Syria, seated on a hill near a valley which was near Damas. An *eighth*, a maritime town of Asia, in

Cilicia, to the east of the river Orymagdus, in the district called Cetidis; it had a port and road for ships. A *ninth*, a town of Greece, in Ætolia, at the passage of the Achelous, near Canopa; so called from the wife and sister of Ptolemy II., and mentioned by Cicero. A *tenth Arsinoë* is, according to Strabo, one of the names given to the city of Ephesus. An *eleventh Arsinoë* is a maritime town of the isle of Cyprus, situate to the west between old and new Paphos: so called from a queen of Egypt, Cyprus having been long subject to the Ptolemies. It had a port, a temple, and a grove. A *twelfth Arsinoë* was also a small town of Cyprus, on the northern coast, at the bottom of a small gulf closed to the north-west by the promontory Acamas. 13. There was another town of this name on the eastern coast of the same island, to the south-east, and very near Salamis. 14. *Arsinoë* was also the name of an inland town of Cyprus.

ARSINOË, in *Entomology*, a species of PAPILIO (*Nymph. Gem.*) found in the island of Amboyna, the wings of which are tailed, indented, fulvous, spotted with black; and the posterior ones marked both above and beneath with two ocellated spots. It is figured by Seba and Cramer.

ARSIS, and THESIS, in *Prosody*, are names given to the two proportional parts into which every foot or rhythm is divided.

By *arsis* and *thesis* are usually meant no more than a proportional division of the metrical feet, made by the hand or foot of him that beats the time.

And in measuring the quantities of words the hand is elevated, as well as let fall; that part of the time which is taken up in measuring the foot, by lifting the hand up, is termed *arsis* or *elevatio*: and the part where the hand is let fall, *thesis* or *positio*. Vid. Augustin, de Musica, lib. ii. cap. 10. In *plaudendo enim quia elevatur & ponitur manus, partem pedis sibi elevatio vindicat, partem positio*.

ARSIS and THESIS are used as musical terms when the subject of a fugue or point is inverted or reversed; i. e. when one part rises and the other falls. These two words are Greek: *arsis* comes from *αἴρω*, *tollo*, I raise or elevate; *thesis*, *depositio*, *remissio*, a depression or lowering. These terms were applied by the ancients to the motion of the hand in beating time.

ARSISACA, in *Ancient Geography*, a town of Asia, situate in the interior part of Media. Ptolemy.

ARSISSA, a lake of Asia, in Armenia, about a degree from east to west, called the lake of *Van* or *Argish*; between 37° 45', and 38° 30' N. lat.

ARSITIS, a country of Asia, near mount Coronos in Hircania. Ptolemy.

ARSK, a town of Russia, in the government of Casan, forty miles N. N. E. of Casan. N. lat. 56° 20'. E. long. 49° 34'.—Also, the name of one of the thirteen districts of Casan, situate on the river Cafanka.

ARSKOG, a large forest in the northern part of Sweden, in the province of Medelpad.

ARSLAN, a fortified place of Asia, in Persia, near Casbin, in the province of Erach.

ARSMART, in *Botany*. See POLYGONUM.

ARSOFFA, a fortified town of Asia, in that part of Arabia which is called the Desert of Syria; supposed by some to be the same with Resapha in the Palmyrene territory, mentioned by Ptolemy: it is ninety miles south-east of Aleppo.

ARSON, *ab ardendo*, in the *Law of England*, a felony at common law, in maliciously and wilfully burning the house, or out-houses, of another, by night or by day. See Hawkins's Pleas of the Crown, book i. chap. 39.

The out-houses, though not contiguous to the dwelling-house, nor under the same roof, that are parcel thereof, such as barns and stables, may be the subject of arson: and this by the common law, which also accounted it felony to burn a single barn in the field, if filled with hay or corn, though not parcel of the dwelling-house. The burning of a stack of corn was anciently likewise united arson. The offence of arson, strictly so called, may be committed by wilfully setting fire to one's own house, provided one's neighbour's house is thereby also burnt; but if no mischief is done but to one's own, it does not amount to felony, though the fire was kindled with intent to burn another's. For by the common law, no intention to commit a felony amounts to the same crime; though it does, in some cases, by particular statutes. However, such wilful firing one's own house in a town, is a high misdemeanour, and punishable by fine, imprisonment, pillory, and perpetual servitudes for the good behaviour. And if a landlord or reversioner sets fire to his own house, of which another is in possession under a lease from himself and from those whose estate he hath, it shall be accounted arson; for, during the lease, the house is the property of the tenant. A bare intent or attempt to burn a house, by actually setting fire to it, unless it absolutely burns, does not fall within the description of "incendit et combussit," which were words necessary, in the days of law-latin, to all indictments of this sort. But the burning and consuming of any part is sufficient; though the fire be afterwards extinguished. Also, it must be a malicious burning; otherwise it is only a trespass; and therefore no negligence or mischance amounts to it. But by 6 Ann. c. 31; any servant, negligently setting fire to a house or out-house, shall forfeit 10*l.* or be sent to the house of correction for eighteen months; in the same manner as the Roman law directed: "eos, qui negligenter ignes apud se labuerint, fustibus vel flagellis cedi."

The punishment of arson was death by our ancient Saxon laws. And in the reign of Edw. I., this sentence was executed by a kind of "lex talionis;" for the incendiaries were burnt to death; as they were also by the Gothic constitutions. The statute 8 Hen. VI. c. 6. made the wilful burning of houses, under some special circumstances therein mentioned, amount to the crime of high treason. But it was again reduced to felony, by the general acts of Edw. VI. and queen Mary; and now the punishment of all capital felonies is uniform, namely, by hanging. The offence of arson was denied the benefit of clergy by 31 Hen. VIII. c. 1. but that statute was repealed by 1 Edw. VI. c. 12.; and arson was afterwards held to be out of clergy, with respect to the principal offender, only by inference and deduction from the statute 4 & 5 P. & M. c. 4., which expressly denied it to the accessory before the fact: though even it is expressly denied to the principal in all cases within the statute 9 Geo. I. c. 22. Blackst. Com. vol. iv. p. 220. &c.

ARSON. *Appel of.* See APPEAL.

ARSTAD, in *Geography.* See ARAD and ROUWADDE.

ARSUF, a sea-port town of Palestine, in the Mediterranean, six miles north-east from Joppa. It is in ruins: but in its vicinity there is a small island called *Arsuffa*.

ARSURA, in *Ancient Customs*, a term used for the melting of gold and silver, either to refine them, or to examine their value. See MAN.

The method of doing this is explained at large in the Black Book of the Exchequer, ascribed to Gervaise, in the chapter De Officio Militis Argentarii, being in those days of great use, on account of the various places and different manners in which the king's money was paid.

ARSURA is also used for the loss or diminution of the metal in the trial. In this sense it is said *tot ardere denarius*, to lose so many penny-weights.

ARSURA is also used for the dust and sweepings of silver-smiths, and others who work in silver, melted down. Du-Cange.

ARSURA is also used, in some writers, for the disease called *crystellus*, or *ignis sacer*.

ARSURITA, in *Ancient Geography*, an episcopal see of Africa, in Bizacium.

ART, is defined to be a habit of the mind prescribing rules for the due production of certain effects; or the introducing the changes of bodies from some fore-knowledge and design in a person endued with a principle or faculty of acting.

The word art is derived from *αρε*, *utility*, *profit*; and is found in that sense in *Æschylus*.

According to lord Bacon, it is a proper disposition of the things of nature by human thought and experience, so as to make them answer the designs and uses of mankind. Nature, according to that philosopher, is sometimes free, and at her own disposal; and then she manifests herself in a regular order; as we see in the heavens, plants, animals, &c.—Sometimes she is irregular and disorderly, either through some uncommon accident, or depravation in matter, when the resistance of some impediment perverts her from her course; as in the production of monstrosities.—At other times she is subdued and fashioned by human industry, and made to serve the several purposes of mankind.—This last is what we call art.—In which sense, art stands opposed to nature. Hence the knowledge of nature may be divided into the history of *generation*, of *pretergeneration*, and of *arts*.—The first considers *nature* at liberty; the second, her errors; and the third, her restraints.

The ingenious Mr. Harris, after pursuing several regular gradations in his inquiries concerning this subject, deduces from it an answer to four different questions. If it be asked, "What art is?" We have to answer, "It is an habitual power in man, of becoming the cause of some effect, according to a system of various and well-approved precepts." If it be asked, "On what subject art operates?" We can answer, "On a contingent, which is within the reach of the human powers to influence." If it be asked, "For what reason, for the sake of what, art operates?" We may reply, "For the sake of some absent good, relative to human life, and attainable by man, but superior to his natural and unassisted faculties." Lastly, if it be asked, "Where it is the operations of art end?" we may say, "Either in some energy, or in some work." Harris's Three Treatises, dialogue i.

ART is also used for science or knowledge, reduced into practice.

Several of the schoolmen hold logic and ethics to be arts; inasmuch as they do not terminate in mere theory; but tend to practice.

In this sense some branches of the mathematics also are arts; others, matters of doctrine or science. Statics is wholly scientific, as it comprehends the mere contemplation of motion: mechanics, on the contrary, is an art, as it reduces the doctrine of statics into practice.

ART is more commonly used to denote a certain system or collection of rules, precepts, and inventions or experiments, which being duly observed, make the things a man undertakes succeed, and render them advantageous and agreeable. In this sense, art is opposed to science, which is a collection of speculative principles and conclusions.

The nature and origin of art, and its distinction from science,

science, are considered more at large in the preface to this work.

Arts, according to the foregoing definition, may be divided into *active* and *effusive*.—Such as leave no external effect after their operation, as dancing, fiddling, &c. are called *active* or *practical* arts: those which do leave an effect behind them, as painting, &c. are called *effusive* arts.

Farther, with respect to their scope and object, they may be divided into *human*, as medicine; and *divine*, as theology.

ARTS, *human*, again may be subdivided into *civil*, as law, politics, &c.; *military*, as fortification, &c.; *physical*, as agriculture, chemistry, anatomy, &c.; *metaphysical*, as logic, pure mathematics, &c.; *philological*, as grammar, criticism, &c.; *mercantile*, to which belong the mechanical arts and manufactures. See each in its place.

Arts are more properly divided into *liberal* and *mechanical*.

ARTS, *liberal*, or *polite*, are those that are noble and ingenious, or which are worthy of being cultivated without any immediate regard to the lucre arising from them. They are such as depend more on the labour of the mind than on that of the hand; or that consist more in speculation than operation, and have a greater regard to amusement and curiosity than necessity. Such are poetry, music, painting, grammar, rhetoric, the military art, architecture, and navigation. The liberal arts used formerly to be summed up in the following Latin verse:

“Lingua, Tropus, Ratio, Numerus, Tonus, Angulus,
Altra.”

In the eighth century, the whole circle of sciences was composed of the seven liberal arts, as they were called; viz. grammar, rhetoric, logic, arithmetic, music, geometry, and astronomy: the three former of which were distinguished by the title of *trivium*, and the four latter by that of *quadrivium*.

ARTS, *mechanical*, are those wherein the hand and body are more concerned than the mind: and which are chiefly cultivated for the sake of the profit attending them.—Of which kind are most of those which furnish us with the necessaries of life, and are popularly known by the name of trades and manufactures.—Such are weaving, turnery, brewing, masonry, clock-making, carpentry, joinery, foundery, printing, &c. These arts, which indeed are innumerable, were formerly comprised under this verse:

“Rus, Nemus, Arma, Faber, Vulnera, Lana, Rates.”

The mechanical arts take their denomination from *μηχανή*, *machine*, as being all practised by means of some machine or instrument. With the liberal arts it is otherwise; there being several of them which may be learnt and practised without any instrument at all; as logic, eloquence, medicine properly so called, &c.

The arts which relate to the sight and hearing, lord Bacon observes, are reputed *liberal*, beyond those which regard the other senses, and are chiefly employed in matters of luxury; these are usually called the *fine arts*; such are poetry, painting, sculpture, music, gardening, and architecture.

As all arts have this common property, according to the definition above cited from Mr. Harris's dialogue, that they respect human life, it is evident that some contribute to its “necessities,” as medicine and agriculture; and others to its “elegance,” as music, painting, and poetry. The former seem to have been prior in time to the latter. Men must naturally have consulted how to live and to support themselves, before they began to deliberate how to render life agreeable. Indeed this is confirmed by fact, as no nation has been known so barbarous and ignorant, as not in some

degree to have cultivated the rudiments of these necessary arts; and hence possibly they may appear to be more excellent and worthy, as having claim to a preference derived from their seniority. The arts, however, of elegance are not destitute of pretensions, if it be true, that nature formed us for something more than mere existence. Nay farther, if well-being be clearly preferable to mere being, and this, without the other, be contemptible, they may have reason perhaps to aspire even to a superiority. Harris, *ubi supra*, p. 54.

As the history of the origin and progress of the particular arts is recited under their respective denominations in the course of this work, it is unnecessary to enlarge in this place. It may be observed, however, in general, that most of the arts that are necessary to the subsistence, or conducive to the convenience and comfort of mankind, have had a very early origin. Some of them may be considered as almost coeval with the human race; and others have sprung up at different periods and in various nations, so remote, that the history of their rise and of their progress for many ages is involved in an obscurity which precludes any satisfactory investigation. The want of food, raiment, and habitations, would naturally suggest a variety of inventions; and when the first and scanty demands of necessity were satisfied, mankind would proceed by further discoveries to improve the ordinary means of supply, and at length to meliorate and embellish the condition which providence had assigned them. But for a long time their real exigencies would be few, and their views and wishes very limited; and of course their progress in improvement would be proportionably slow and tedious. In a more advanced state of society, their necessities and desires would be multiplied, and they would devise new methods of supplying and gratifying them; so that the arts they had already invented would be improved, and new ones would be discovered. At last, as a change of circumstances occurred, or some accident suggested the hint or afforded opportunity, they would proceed from the invention of the necessary and mechanical arts to those that contributed to elegance and ornament, as well as superior accommodation. As to the inventions and discoveries of the early ages, nothing certain is known. Those arts that may be referred to the class of such as are most necessary and useful, were the productions of periods when men had little acquaintance with letters, and when they possessed no certain mode of transmitting an account of them to succeeding generations. The records of tradition are obscure, doubtful, or fabulous; and other modes of conveyance are subject to corruptions and mutilations in the lapse of many ages. To this purpose, it may be alleged, that many passages in the works of Pliny, who appears to have been industrious in collecting whatever he thought to be useful or curious, and to have been as desirous of communicating knowledge as he was diligent in acquiring it, have suffered in this way to such a degree, that some of them have not been satisfactorily illustrated even by the best commentators. However, it is universally allowed, that the arts had their rise in the East, and that they were conveyed from thence to the Greeks, and from them to the Romans. The Romans, indeed, seem to have been chiefly indebted to the Greeks, by whom they were excelled in point of invention. The Romans acknowledged this superiority, for they sent their youth to Greece in order to finish their education; and from this circumstance we may infer, that they considered that country as the seat of the arts and sciences, and as a school where genius would be excited by the most finished models, and the taste corrected and formed. Pliny and other writers have, nevertheless, given hints which lead

us to conclude, that the Romans possessed a more extensive acquaintance with the arts than the moderns are perhaps willing to allow, and that some inventions, regarded as new, may be only old ones revived and again applied to practice. When Rome, abandoned to luxury and vice, became an easy prey to those hordes of barbarians who overspread the empire, her arts shared in the general wreck, and were either entirely lost, or for a considerable time forgotten. The deplorable state of ignorance in which Europe was afterwards plunged during several centuries, retarded their revival; and it was not till a late period, when favoured and protected by a few men of superior genius, that they began again to be cultivated. It cannot, however, be denied, that several important discoveries, altogether unknown to the ancients, which must have had considerable influence on the general state of society, were made in ages that can hardly be exempted from the appellation of barbarous. Of this kind were the inventions of paper, painting in oil, the mariner's compass, gunpowder, printing, and engraving on copper; see the several articles. After the invention of the compass and printing, two grand sources were opened for the improvement of science. As navigation was extended, new objects were discovered to awaken the curiosity and excite the attention of the learned; and the ready means of diffusing knowledge, afforded by the press, enabled the ingenious to make them publicly known. Ignorance and superstition, the formidable enemies of philosophy in every age, began to lose some of that power which they had usurped, and different states, forgetting their former blind policy, adopted improvements, which their prejudices had before condemned.

In countries, however, where civil and ecclesiastical tyranny prevailed, the progress of the useful and elegant arts was slow, and struggled with many difficulties. Particular events, indeed, have occurred in all ages and nations which have roused the exertions of genius, and furnished occasion for making important and useful discoveries. The history of Greece and Rome, and even of modern Europe, will afford many obvious facts that seem to confirm and illustrate this observation, and they will be found in detail under the respective titles in this work.

It has been well noted by philosophers, that, during the rise and growth of states, the *military* arts chiefly flourish; when arrived at their height, the *liberal* arts; and when in a declining state, the *voluptuary* arts.

There are also divers particular arts; the art of *memory*, the art of *decyphering*, the art of *swimming*, art of *diving*, &c.

Democritus maintained, that men learnt all their arts from brutes: that the spider taught them weaving; the swallow, building; the nightingale, music, and several kinds of medicine.

ART, *term of*. See TERM.

ARTS, *bachelor of*. See BACHELOR.

ARTS, *master of*. See MASTER, DEGREE, FACULTY.

ART is also applied to divers imaginary, and even superstitious doctrines and inventions.—Such are Lully's art, or the *transcendental* art. This is an art by means of which a man may dispute whole days on any topic in nature, without understanding the least tittle of the thing in dispute; thus called from its inventor Raymond Lully. It consists chiefly in disposing the several sorts of beings into divers scales or climaxes, to be run down in a descending progression.—Thus, whatever was proposed as the subject of discourse, they would say, first, it is a being, and consequently, one true, good, perfect: then, it is either created, or uncreated. Again, every created being is either body or spirit, &c.

ART, *ars notoria*, is a pretended manner of acquiring sciences by infusion, without any other application than a little fasting, and performing a few ceremonies. It was solemnly condemned by the Sorbonne in 1320.

ART, *St Anselm's*, is a superstitious manner of curing wounds, by barely touching the linen wherewith those wounds had been covered. Delrio, in his *Dissquisitiones Magicæ*, observes, that some Italian soldiers, who practised this art, attributed the invention thereof to St. Anselm: but he assures us also, that it was really invented by Anselm of Parma, a celebrated magician.

ART, *St. Paul's*, is a branch of the *ars notoria*, so called as being supposed to have been taught by St. Paul, after his being taken up into the third heaven.

ART and PART, is a phrase used in the north of England, and in Scotland. When any one is charged with a crime, they say he is *art and part* in committing the same; that is, he was concerned both in the contrivance and in the execution of it.

The facts inferring *art and part* need not to be particularly laid in the libel or indictment, for these general words, as terms of stated signification, are sufficient. Yet these facts may be set forth, and it is proper so to do, if the prosecutor chooses to confide in the court rather than in the jury. Vide Mackenz. Crim. Law.

One may be *art and part*, 1. By giving counsel to perpetrate, without distinction, whether the crime would have been committed without such counsel or not: this being what can never be perfectly known. But it is to be observed, that in the more atrocious crimes, he that gives counsel is equally punished as he that commits them; but in the less atrocious, less severely. And sometimes reasons of mitigation are taken from the age, the manner of advising, &c.

2. By aid and assistance, and that either previous, or concomitant, or subsequent, to the commission of the crime.

3. By a clear and explicit mandate to commit the crime, or to do somewhat unlawful in itself, which with great probability might produce it, if executed by the hand of the mandatory, and not that of another.

ART *hermetical*. See HERMETICAL.

ART, *hyssopic*. See HYSOPIC.

ART, *military*, comprehends the order and arrangement which is observed in the conduct of an army, when it is to fight, to march, or to be encamped, usually denominated *tactics*; and also the construction and application of warlike machines.

ARTA, in *Geography*, a town of Switzerland, in the canton of Schwitz, on the south border of the lake of Zug.

ARTA, a river of European Turkey, which runs into the gulf of Arta, near a town of the same name.

ARTA, or *Larta*, a town of European Turkey, with a Greek archbishop's see, in the province of Albania, on the river Afdhas, near a gulf to which it gives name. The cathedral is said to have as many windows and doors as there are days in the year; it is supported by above two thousand marble pillars, and was built by Michael Ducas Comneno, emperor of Constantinople. The inhabitants, who are partly Mahometans, and mostly Christians, are reckoned to be about seven or eight thousand, and carry on a considerable trade in tobacco and skins. The gulf is on the east side of the Adriatic. N. lat. 39° 28'. E. long. 21° 20'.

ARTABA, an ancient measure of capacity used by the Persians, Medes, and Egyptians.

The Persian artaba is represented by Herodotus as bigger than the Attic medimnus, by three Attic chœnixes; from which it appears that it was equal to $6\frac{2}{3}$ Roman modii, consequently that it contained 166 $\frac{2}{3}$ pounds of wine or water; or 126 $\frac{2}{3}$ pounds of wheat.

The Egyptian artaba contained five Roman modii, and fell short of the Attic medimnus by one modius; consequently held 133 $\frac{1}{3}$ pounds of water or wine, 100 pounds of wheat, or 60 of flour.

The Babylonians allowed their god Belus twelve artabas of fine flour for his daily sustenance; which will amount to 60 Roman modii, and consequently 720 pounds of flour.

The Median artaba was of the same content with the Attic medimnus, and consequently equal to six Roman modii, held 160 pounds of water or wine, and 120 of wheat. *Beverin. de Pond. & Mens. part ii. p. 125.*

ARTABANUS, in *Ancient History*, the common name of several kings of Parthia. The first died in the first year of his reign, in consequence of a wound received in a battle with a tribe of Scythians, about the year before Christ 129. The second was of the race of Arsaces, and was king of Media, when he was called to the throne of Parthia, about the year of Christ 16; and died much lamented by his subjects, about A. D. 48. The third lived in the reign of Vespasian or Titus, and espoused the cause of a counterfeit Nero; he died whilst he was meditating the invasion of Armenia. With the death of Artabanus IV. in the year 226, the Parthian empire terminated. See *ARSACIDÆ*.

ARTABRI, in *Ancient Geography*, a people of Europe, in Spain; deriving their name from Artabrum, a promontory near which they dwelt, and corresponding to cape Finisterre.

ARTACABANE, a town of Asia, in Aria. According to Pliny, it was larger and more ancient than Alexandria in the same country.

ARTACÆON, a small island of the Propontis, in the vicinity of Cyzicum. Pliny.

ARTACANA, a town of Asia, situate in the northern part of Aria, on the confines of Parthia, according to Strabo. *Q. Curtius* makes it the capital of *ARIA*.

ARTACE, the name of a colony established by the Milesians in Phrygia, in the year before Christ 694. Venus had a temple in this place, whence her name *Artacias*.—Also, a fortress of Asia, in Bithynia, situate on the Euxine sea.—A mountain of the peninsula of Cyzicum.—A small island of the Propontis, over against the mountain of this name.—A port of Asia, on the coast of the Propontis, near to, and west of Cyzicum.—A town of Asia, in Armenia.

ARTACENA, a country of Asia, in Assyria.

ARTACH, a town of Asia, according to *Curopalate*.

ARTACII, a people placed by *Dion* towards Thrace, and said to have been conquered by *Craffus*.

ARTACINA, a town of the island of Crete. *Ptolemy*.

ARTÆA, a country of Persia, according to *Pausanias*.

ARTAGERA, a town of Asia, in Armenia, near which *C. Cæsar* was dangerously wounded by one *Addus*, according to *Velleius Paterculus*.

ARTAGICARTA, a town of Greater Armenia, placed by *Ptolemy* between *Arsamosarta* and *Tigranocerta*.

ARTAGICERTA, *ARDIS*, a town of Asia, in Armenia, on the western branch of the *Tigris*, north-east of *Armidæ*.

ARTAGIRA, a town of Interior Libya.

ARTAKI, in *Geography*, a town of Asiatic Turkey, in the province of *Natolia*, on the south coast of the sea of *Marmora*, 76 miles south-west of *Constantinople*. N. lat. 40° 18'. E. long. 27° 39'.

ARTAKUI, a town of European Turkey, in the province of *Romania*, 48 miles north-west of *Gallipoli*.

ARTAMIS, in *Ancient Geography*, a town of the *Cyrenaic* territory in the *Pentapolis*.—Also, a town of *Asia*, in *Bactriana*.

ARTAMOVA, in *Geography*, a town of *Siberia*, 120 miles south-south-east of *Toholsk*.

ARTAN, a town of Asiatic Turkey, in the province of *Natolia*, 24 miles south of *Akferai*.

ARTANA, or *ORTANA*, a town of *Spain*, in *Navarre*, five leagues from *Pampeluna*.

ARTANES, or *ARTANUS*, a river of *Asia*, in *Bithynia*.

ARTANICA, in *Botany*. See *CYCLAMEN*.

ARTANISSA, in *Ancient Geography*, a town of *Asia*, in *Iberia*. *Ptolemy*.

ARTAS, a town of *Asia*, in *Syria*, situate at the foot, and to the east of one of the branches of *mount Amanus*.

ARTAS Bay, in *Geography*, lies in the island of *Majorca*, in the *Mediterranean*, S.W. from *Cape la Padre*, the western extremity of the island. The town lies between two rivers, which fall into the bay from the west and north-west. *Alcudi Bay* is to the north-west from the *Cape la Padre*.

ARTASIA, in *Ancient Geography*, a town of *Asia*, in *Syria*, in the neighbourhood of *Antioch*.

ARTATUS, a river of *Illyria*, mentioned by *Livy*.

ARTAVIVA, in *Geography*, a town of *Asia*, in *Min-grelia*, 110 miles north-east of *Trebisond*.

ARTAXATA, in *Ancient Geography*, the metropolis of *Armenia*, and the residence of the *Armenian* kings. This city was built upon a plain, which *Hannibal* recommended to *king Artaxes* as a proper site for the capital of *Armenia*. It was situated upon an elbow of the river *Araxes*, which forms a kind of peninsula, and surrounded the town, except on the side of the isthmus; and the isthmus was secured by a rampart and a broad ditch. *Lucullus*, after having defeated the *Armenians* under their king *Tigranes*, would not venture to lay siege to *Artaxata*, which he considered as impregnable. The gates of the city were thrown open to *Corbulo*, the *Roman* general; but the city itself was burnt and razed. It was afterwards called *Neronia*, in compliment to *Nero*, who ordered *Tiridates* to rebuild it. The ruins of this city are shewn at a place called *Ardachat*.

ARTAXERXES, in *Biography*, the name of three kings of *Persia*. The first furnished *Longimanus* and *Μακρο-χρυσ*, from the extraordinary length of his arms and hands, so that, on his standing straight, they could reach his knees; succeeded his father *Xerxes*, who was murdered by *Artabanus*, the captain of his guards. The traitor charged the death of *Xerxes* upon *Darius*, his eldest son, and induced the young prince to believe that it was his farther intention to get rid of him in the same manner. *Darius* was therefore, by the counsel and assistance of *Artabanus*, immediately assassinated, and *Artaxerxes* was placed upon the throne, in the year before Christ 464, notwithstanding the prior claim of his second brother *Hystaspes*, who was then in *Bactriana*. *Artabanus*, having thus far succeeded, proceeded to the accomplishment of the design which he had formed, of securing the crown to himself. But *Artaxerxes* being informed by *Megabyzus* of his conspiracy, prevented the execution of it by the death of the traitor. Thus established in the throne, notwithstanding the treason of *Artabanus*, and the hostile attacks of his brother *Hystaspes*, he pursued a much more prudent course than that of his father, and desisted from impracticable attempts to subdue the valiant *Greeks*, who were fighting for their liberty. At length a war between the *Greeks* and *Persians*, which had been protracted for fifty-one years, was terminated, happily for both

nations, and very honourably to the former. Artaxerxes proceeded, very much to the satisfaction of his subjects, to cultivate the arts of peace, and to redress the evils which had resulted from the frantic ambition of his father. Although he was an absolute prince, he distinguished himself during a long reign by his mildness and humanity. At his court Themistocles, the illustrious Athenian, who had been an avowed enemy to the Persian government, found an asylum; and here he was treated with great distinction and hospitality. Thucydides (l. i. p. 91.) refers the retreat of Themistocles to the commencement of this reign; but other authors, as Strabo, Plutarch, and Diodorus, fix this incident under Xerxes in the preceding reign. In this latter opinion Dr. Prideaux concurs. Artaxerxes was very favourable to the Jews: and he is supposed by Prideaux and many others to have been the Abasuerus of Scripture, who married Esther, and by whose permission Ezra restored the Jewish worship and civil government at Jerusalem. Archbishop Usher supposes that it was Darius Nothus, the son of Hytaspes, who espoused this illustrious Jewess. See DARIUS, and ESTHER. The seventy weeks of Daniel are reckoned to commence in the reign of Artaxerxes. See PROPHECY. Artaxerxes died within eight months after the beginning of the forty-first year of his reign, and was succeeded by Xerxes, his only legitimate son. Prid. Conn. vol. i. p. 370. &c. and vol. ii. p. 372. 579.

ARTAXERXES II., called *Mnemon* on account of the strength of his memory, was the eldest son of Darius Nothus by his queen Parysatis, and bore the name of Arfaeus before his accession to the throne, in the year before Christ 404. It is related (see Athenæus, l. 12.) that when he was attending his father, who was on his death-bed, he desired instruction for the successful conduct of government, and that the dying king gave him this memorable advice; "That," if he expected the felicity and success which he had enjoyed, "it must be by doing in all things that which was just both towards God and man." Artaxerxes had a younger brother named Cyrus, the favourite of his mother, and whom she wished to elevate to the throne upon the following claim: the birth of Artaxerxes had happened before the accession of his father to the throne; but that Cyrus was born the son of a king; a distinction which, however frivolous it may be deemed in modern times, had engaged Darius Hytaspes to prefer Xerxes, the younger of his sons, to his elder brother Artabazanes. Cyrus formed a conspiracy against the life of his brother, for which he was sentenced to death, but pardoned by the intercession of his mother; he afterwards attempted, with the assistance of a Grecian force, to dethrone his brother; but, though victorious, he was killed in battle. His friends on this occasion were all destroyed; but the Greek army kept entire, and in spite of all the force and artifice with which they had to encounter, made their way home by a retreat, which is one of the most brilliant events in history, and is recorded by Xenophon, who was a principal actor in it. Artaxerxes is much censured for the weakness betrayed by him in delivering up to the vengeance of Parysatis all who had been instrumental in the death of Cyrus, though he himself boasted of having inflicted the mortal wound; and for suffering this female monster to murder them with attendant circumstances of the most exquisite torment. She soon after poisoned the queen Statira, by which act she excited the indignation of her son so much, that he confined her to Babylon, and vowed never to enter the city as long as she remained there. At length, however, she was recalled to court, and maintained considerable influence as long as she lived. The

throne of Artaxerxes was next endangered by Agesilaus and the Spartans, in the year before Christ 396; but having adopted a more prudent policy than his ancestors, he sowed dissensions in Greece, which compelled the invaders to evacuate the Persian empire. The Athenians united with the Persians; but at length these differences were compromised by the peace of Artabazanes, in the year before Christ 353, which left the Greek cities of Asia subject to the Persian king. Artaxerxes next directed his power against Evagoras, king of Cyprus; and on this occasion the Athenians became the foes, and the Lacedæmonians the auxiliaries, of the Persians. Cyprus, after much bloodshed, became tributary. In an enterprise undertaken by the king in person, in the year B. C. 384, against the Cadusians, a hardy people who inhabited the mountains between the Euxine and Caspian seas, his army was almost wholly lost by famine; but part of it was saved by a reasonable negotiation. The sense of his disgrace on his return so much irritated his temper, which was naturally mild, that he put several of his satraps to death. His attempts for reducing his revolted subjects in Egypt proved at first successful, by the aid of some Greek mercenaries; but they ultimately failed. The close of his reign was disturbed and embittered by those domestic troubles to which eastern despots are peculiarly subject. His eldest son Darius formed a conspiracy against him; but the plot was detected, and the traitor, with all his accomplices, who were of the king's family, were cut off. Three others of the king's sons became afterwards competitors for the throne; and Ochus, the worst of them, removed the other two by poison and assassination. After a reign of 62 years, and at the advanced age of 94, according to Plutarch, but, as Diodorus says, after having reigned 43 years, Artaxerxes sunk under affliction and decay, and left the throne vacant for his successor. So great was the authority of this monarch among the republics of Greece, that the contending states made him the umpire of their various disputes and pretensions, and their deputies held a congress in his presence, that he might adjust their jarring interests. Prid. Conn. vol. ii. p. 615. &c.

ARTAXERXES III., whose name was *Ochus*, succeeded his father in the year before Christ 353. History paints him as a monster of cruelty. Having put to death all the members of the royal family within his reach, he caused his sister Ocha, who was also the mother of his wife, to be buried alive; and inclosing within a court of his palace one of his uncles, with one hundred of his sons and grandsons, he ordered his archers to shoot them all to death. His nobles in great numbers shared a similar fate. Having quelled a revolt in Phœnicia by the utter destruction of Sidon, and reduced Judæa, and carried away into captivity many of its inhabitants, he marched at the head of a great army, consisting chiefly of Greek auxiliaries, into Egypt, and totally subdued it. Here, however, a sacrilegious deed, by which he manifested his contempt of the Egyptian superstition, by killing the sacred bull Apis, and causing his men to eat the flesh, ultimately effected his ruin. Bagoas, a favourite eunuch, by birth an Egyptian, and zealously attached to the religion of his country, prevailed with the king's physician to administer poison to him instead of a medicine, which carried him off in the 21st year of his reign. The zealous devotee caused his body to be cut in small pieces, and given to the cats, and knife-handles to be made of his bones. After destroying the king's other sons, he placed Arses on the throne; but soon murdered him and his family; and thus the race of Ochus became extinct. Prid. Conn. vol. ii. p. 666—682.

ARTEA, or ARTELA, *Point*, in *Geography*, is a low point

point six leagues nearly east from the river Copalita, on the south-west coast of Mexico, in the north Pacific Ocean: appearing at a distance like a small island.

ARTEAGA, STEFFANO, in *Biography*. See STEFFANO.

ARTEDI, PETER, born in the province of Ingormandland in Sweden, in the year 1705, received the first part of his education at the College of Hurneland, whence he was removed to Upsal. He was intended for the church, but his disposition leading him to the study of Natural History, in which he was assisted by Linnæus, he preferred practising medicine, and applied himself to chemistry, but his principal attention was turned to Ichthyology, in which he made considerable progress. In 1732, he came to England in pursuit of his favourite study, at the same time that his friend Linnæus set off to examine the natural productions of Lapland. On parting, they mutually assigned to each other such manuscripts as they should be in possession of treating on natural history, in case either of them should die in their travels. This event however did not then take place, as they met together at Leyden in the year 1735. It was here that Linnæus engaged his friend to superintend the printing of the third volume of Seba's *Theſaurus*, which treated of fishes. Returning one evening from Seba's house to his lodgings, while prosecuting this business, he fell into the canal and was drowned, being only 30 years of age. Linnæus, who got possession of his manuscripts, published his "*Bibliotheca Ichthyologica*," and his "*Philosophia Ichthyologica*" in 8vo. in 1738, with the life of the author prefixed. He had before published his "*Classification of Umbelliferous Plants from the Calyx*." *Gen. Biog.*

ARTEDIA, in *Botany* (from P. Artedi, a student of medicine in Sweden), an umbelliferous plant, formerly called *gingidium*. Lin. g. 332. Schreb. 465. Juss. 224. Gærtn. t. 85. Clafs, *Pentandria digynia*. Nat. Ord. *Umbellata*. *Gen. Char. Cal. umbel universal*, spreading, flat, manifold. *Partial*, small, similar. *Involucre universal*, about ten-leaved; leaflets ovate-oblong, three-bristled at the end, nearly the length of the umbel; *Partial*, two or three-leaved, veering outwards; leaflets linear, pinnate, longer than the umbellule. *Cor. universal*, difform, radiate; floscules of the disk abortive. *Proser of the disk*, male; petals five, cordate-infl-x, erect,—*of the ray*, hermaphrodite, with similar petals, but the outermost largest. *Stam.* filaments five, capillary in all the florets; anthers simple, roundish. *Pist. of the ray*, germ small, inferior; styles reflex; stigmas simple. *Per.* none; fruit roundish, compressed, leafy-scaled on the edge, bipartite. *Seeds*, two, oblong, roundish, spreading, scales about the edge.

Ess. Gen. Char. Invol. pinnatifid. *Flsç.* of the disk, male; fruit, rough with scales.

Species, 1. *A. squamata*; stalks, about two feet high, sending forth a few lateral branches, with linear multifid leaves, resembling those of dill; flowers white, in a large terminal umbel; fruit-bearing umbel converging; involucre many leaved, having the leaflets margined at the base; petals as in the *tordylium*; annual, flowering in July. Found on Mount Libanus by Rauwolf, and by Tournefort in Natolia. Introduced by Mr. Thouin in 1788.

Propagation and Culture. The seeds should be sown in autumn in a warm border, where the plants are to remain, for they do not bear transplanting. To secure their seedling, they should be raised in a hot-bed, and kept in a greenhouse.

ARTEDIA muricata. See DAUCUS.

ARTEL, in *Commerce*, a name given to a commercial association, consisting of a certain number of labourers, who voluntarily become responsible, as a body, for the honesty

of each individual. The separate earnings of each man are put into the common stock; a monthly allowance is made for his support; and at the end of the year the surplus is equally divided. The number varies in different associations from 50 to 100; and it is considered so beneficial to belong to one of these societies, that 500, and even 1000 roubles are paid for admission. These societies are not bound by any law of the empire, or even written agreement; nor does the merchant restrain them under any legal obligation; yet there has been no instance of their objecting to any just claim, or of protecting an individual whose conduct had brought a demand on the society. Hence arises the denomination of *Artelschifts*, who are persons employed by the Russian merchants of St. Petersburg to collect payment on bills, to receive and pay money, and also to superintend the loading and unloading of the different cargoes. These Russians are mostly natives of Archangel and the adjacent governments, of the lowest class; they are frequently slaves, generally of the crown; and yet the merchant has no reason to distrust their fidelity, partly from the nature of their association, and partly from the natural reluctance of the Russian to betray the confidence that is reposed in him.

ARTEMIDIS, in *Ancient Geography*, a town of Asia, in Lesser Armenia, called by Ptolemy, Artemidia, or Artemita.

ARTEMIDORUS, in *Biography*, a remarkable visionary, who spent his whole life in attempting to solve the mysteries concealed, as he apprehended, in dreams. For this purpose he not only collected all that had been written on the subject, but travelled over Greece, Asia, and Italy, to learn such stories relating to them as were current in those countries. He was born at Ephesus, in the time of Antoninus Pius, as we learn from a passage in his work, called "*Oncirocritica*," the interpretation of dreams, which, though blemished by this strange fancy, still keeps its rank, on account of the information it contains relative to ancient rites and customs. "*Rem si spectes*," Gerard Vossius says, "*nihil eo opere vanius; sed utilis tamen ejus lectio erit ob tam multa, quæ admisceat de ritibus antiquis et studio humanitatis*." In this work he assumed the surname of "*Daldianus*," from Daldis, a small city of Lydia, the birth-place of his mother. The *Oncirocritica* was first edited in Greek, by Aldus, in 8vo., in 1518. Cornarius published a Latin translation at Basle, in 1537; which was reprinted with the Greek text in 4to., at Paris, in 1604, by Rigaltius. Lucian Philopatris, t. 2. p. 775. Suidas. Fabr. Bib. Græc. l. iv. c. 13. § 5. 8. t. iii. p. 402.

ARTEMIDORUS, a geographer of Ephesus, is frequently commended by Strabo, Pliny, and Steph. Byz., and flourished about the 169th olympiad, or the 104th year before Christ. His description of the earth is often cited by the ancients. Some fragments of this geographer are collected in the first volume of Hudson's *Lesser Greek Geographers*. Fabr. Bib. Græc. l. iv. c. 13. § 9. t. iii. p. 406.

ARTEMIS, in *Entomology*, a species of PAPIILIO (*Nymph. Phal.* Gmel.) that inhabits Germany and some other parts of Europe. The wings are indented, fulvous varied with black: a row of black dots both above and beneath on the posterior pair. Fabr. cius, &c.

ARTEMISIA, in *Antiquity*, yearly festivals observed in divers cities in Greece, particularly Delphi, in honour of Diana, surnamed Artemis.

In the artemisia, a mullet was sacrificed to this goddess, as being thought to bear some resemblance to her, because it is said to hunt and kill the sea-hare. Athen. lib. viii. The Syracusans also celebrated the artemisia for three days, with great joy and festivity.

ARTEMISIA, in *Biography*, the name of two queens of Caria. The first was among the auxiliaries of Xerxes against the Greeks, and attended in person with five ships well equipped, brought from Halicarnassus. She manifested such valour in the combat as to give occasion for saying, "that his men behaved like women, and his women like men." Being the last who fled, she was closely pursued by an Athenian ship, and, in order to secure her escape, she directed her galley against a vessel of an enemy, and sunk it with its crew; the pursuer upon this conceiving that she was a friend, ceased chasing, and she arrived in safety on the coast of Asia, where she was entrusted by Xerxes with the conveyance of his children to Ephesus. Her statue was placed at Sparta among those of the Persian commanders. By pretending to sacrifice to the mother of the gods, at Latmus, she was admitted into the city, and took possession of it. In revenge for this insult, the goddess is said to have excited her ardent passion for a young man of Abydos, whose eyes she put out in his sleep because he refused to gratify her desires; and she is reported to have then precipitated herself from a rock. *Anc. Un. Hist.* vol. iv. p. 164, &c. *Nouv. Dict. Hist.* The second Artemisia, the sister and wife of Mausolus, is principally famous on account of her conjugal affection. See **MAUSOLEUM**. Besides erecting this monument to the memory of her husband, she is said to have mingled his ashes in her drink, and to have instituted a prize for the best eulogy on his character. She died soon after the rearing of this structure in the year before Christ 351. *Anc. Un. Hist.* vol. vii. p. 72. *Nouv. Dict. Hist.*

ARTEMISIA, in *Botany*, a genus of plants, including mugwort, southernwood, wormwood, &c. (derived perhaps, from *ἄρτεμις*, Diana, or named after the wife of Mausolus, king of Caria). *Lin. g.* 945. *Schreb.* 1281. *Juss.* 184. *Gærtn.* t. 164. *Clafs.* *Syngenesia polyzamia aequalis*. *Nat. Ord.* *Compositæ. Corymbifera*, *Juss.* *Gen. Char.* *Cal.* common, roundish, imbricate; scales rounded, converging. *Cor.* compound; corollules hermaphrodite, tubular, several, in the disk; females almost naked, in the circumference; proper of the hermaphrodite, funnel-shaped; border five-cleft. *Stam.* in the hermaphrodites; filaments capillary, very short; anther cylindrical, tubular, five-toothed. *Pist.* in the hermaphrodites; germ small; style filiform, the length of the stamens; stigma bifid, revolute; females, germ very small; style filiform, longer than in the hermaphrodites; stigma similar. *Per.* none. *Calyx* scarcely changed. *Seeds*, solitary, naked. *Rec.* flat or villose.

Ess. Gen. Char. *Recept.* subvillose, or almost naked; down none. *Cal.* imbricate, with rounded converging scales. *Cor.* of the ray none.

* *Sbrubby, erect.*

Species, 1. *A. vermiculata*; "leaves acerose, crowded, very small; panicle racemed; flowers sessile." A stiff upright, somewhat ash-coloured, shrub; leaves linear, flat, on the upper surface tomentose, beneath naked, and rather convex; panicle copious, consisting of racemes, formed of sessile, ovate, imbricate spicules; flowers tomentose. A native of the Cape of Good Hope. 2. *A. capillaris*, *Thunb.* *Jap.* 309. "leaves simple, capillaceous." The stem is striated, reddish, a foot high; branches scattered, subsistigiate, from upright spreading, like the stem; leaves many, smooth, half an inch long; flowers in close racemes, on the extreme twigs. A native of Japan, where it flowers in October. 3. *A. Judaica*, absinthium halepense, &c. *Pluk.* *Alm.* t. 73. f. 2. "Leaves obovate, obtuse, lobed, small; flowers panicled, pedicled." The stem suffruticose, subpubescent, ash-coloured, a foot and a half high; leaves three or five-lobed,

subtomentose, ash-coloured, middle lobe the broadest; flowers roundish, rather depressed, the size of coriander seeds. A native of China, Judea, Arabia, &c. 4. *A. Atbiopica*; "leaves palmate, linear, very minute; flowers racemed, peduncled." A shrubby plant, one foot high, whitish; leaves the size of those of heath, in clusters, subtomentose; divisions linear, very narrow; flowers nodding, the size of those of wormwood; receptacle naked. A native of the Cape of Good Hope, and of Spain. 5. *A. contorta*; "leaves palmate, linear, minute; panicle racemed, flowers sessile." An upright, tomentose, white shrub; leaves crowded; flowers imbricate, small, in spikes, which sit close to the branches. Found by Lerebe in Persia. 6. *A. abrotanum*, southernwood. *Woodv. Med. Bot.* t. 119. α stem erect, common southernwood. β Dwarf southernwood. "Leaves fetaceous, very branching." A well-known under shrub, common in gardens, rising three or four feet in height; leaves alternate, petioled, multifid; leaflets linear, very narrow, pale green, tomentose-scabrous, lvs divided towards the top, where they become trifid, and even linear next the flowers, which are in upright spikes at the extremities of the branches; they are numerous, nodding, yellow, but rarely open in England. A native of the southern parts of Europe and of Asia. 7. *A. arborefcens*, common narrow-leaved tree-wormwood. "Leaves tripinnatifid, silky, cinereous; leaflets linear; flowers globose; flower-bearing branchlets simple." The stalk is woody, six or seven feet high; leaves resembling those of common wormwood, but much whiter, and more finely divided; flowers globular, in spikes, terminating the branches. This is by some considered as a variety of the common wormwood. A native of Italy. 8. *A. argentea*, broad-leaved tree wormwood. "Leaves bipinnatifid, silky, white; leaflets lanceolate-linear; flowers globose; flower-bearing branchlets wand-like." The whole plant is of a silvery colour; receptacle villose. A native of Madeira, where it was discovered by Masson, and introduced here in 1777. 9. *A. aragonia*; "leaves linear, bipinnate, hoary; flowers racemed," scarcely a foot high; upper leaves simple, linear; racemes small, axillary. 10. *A. messerschmidii*; "leaves linear, multifid; racemes erect, slender, loose." The stem is upright suffruticose; the whole plant tomentose. 11. *A. Tartarica*; "lower leaves bipinnate; pinnas equal; upper leaves pinnate, linear; racemes erect, loose, many-flowered." This, like the preceding species, is a tomentose under-shrub. They were both found in Tartary by Messerschmidt. See *Stechm.* p. 19. n. 9 & 10. 12. *A. nitrofa*, *Gmel. Sib.* 2. t. 50. f. 1. "Lower leaves finely multifid; upper entire, obtuse; corymbs erect, hoary, oblong, spiked, sessile." A native of Siberia. 13. *A. lerchiana*, *Gmel. Sib.* 2. t. 50. f. 2. 3. "Lower leaves pinnate, short, finely divided; pinnas palmate; upper leaves linear, undivided; corymbs sessile, copious, spiked, oblong." A shrubby hoary plant observed in Astracan, and on the banks of the Volga; and a variety by Gmelin between the rivers Jenifea and Irdis. 14. *A. tenella*, *Abf. seriph.* *Hisp. Tournes.* inst. 458. "Leaves short, very finely multifid; panicle slender, loose, leafy; peduncles one or two-flowered." Stem woolly. A native of Spain. 15. *A. pauciflora*, *Gmel. Sib.* 2. t. 52. f. 1. 2. "Branches virgate, lsh-form; corymbs one-ranked; spikes subsessile." Calyx three or four flowered. A native of the banks of the Volga. 16. *A. italica*, *Pluk. phyt.* t. 121. f. 2. "Leaves tomentose, loosely pinnate; pinnas long, linear; root-leaves dotted; spikes dense; flowers erect." A native of Italy. 17. *A. hispanica*; "leaves loosely pinnate; pinnas long, linear; spikes very dense; calyces oblong;" not tomentose. A native of Spain. 18. *A. Gmelini*, *Gmel. Sib.* 2. t. 56. f. 1.

f. 1. "Leaves doubly pinnate, obtuse, linear: corymbs green, roundish, nodding." The leaves are ash-coloured underneath. Found by Gmelin near the rivers Lena and Angara. 19. *A. lobelia*, Allion. ped. n. 607. *A. camphorata*. Villar's Dauph. 242. "Leaves petiolate, palmate, multifid, linear; upper ones simple, angular." This is a smaller plant than common southernwood, and has a strong camphoraceous smell. The leaves are less hoary, and those about the flowers broader, longer, and not so much cut. The corymbs are larger, and thinner, and the flowers of a fine yellow. A native of Piedmont, Dauphiné, &c.

** *Procumbent before flowering.*

20. *A. santonica*. Tartarian southernwood or worm-seed, Med. Bot. t. 123. "Stem-leaves bipinnate, multifid; branches undivided; spikes one-ranked, reflex; flowers with five florets." Stem panicled, rather hoary; lower leaves pinnate, multifid, linear; branches wand-like; spikes alternate, recurved; flowers round, nodding, solitary; leaves on the branches undivided, nearly linear. A native of Tartary, and cultivated by Miller in 1768. It flowers from September till November. 21. *A. campestris*, field southernwood, Hudf. 357. With. 739. Eng. Bot. t. 338. Smith. 863. *Abrotanum campestre*. Ray Syn. 190. Ger. Em. 1106. "Leaves multifid, linear; stems procumbent, wand-like; root fusiform." Stems prostrate, ultimately erect, about two feet in length, virgate, panniculate, angular, smooth, reddish, leafy; leaves irregularly bipinnatifid, rather fleshy, somewhat hairy underneath; radical leaves depressed, and with longer foot-stalks; those on the stem alternate, minute, compound; flowers in racemes, drooping, small, of a brownish green; scales of the calyx carinate, and rough at the margin; florets of the disk about fifteen, yellow, with a purple apex; those of the ray only two or three, very small, tubulate, closed, entire; receptacle naked, convex. It has been found in several places in Norfolk and Suffolk. This plant differs from common southernwood, as its odour is so weak as to be scarcely discoverable. 22. *A. pulystris*, marsh southernwood, Gmel. Sib. 2. t. 55. "Leaves linear, pinnate, entire; flowers glomerate, subsessile." The leaves resemble those of buck's horn plantain, with five or seven segments; flowers yellow, receptacle naked. A native of Siberia. 23. *A. crithmifolia*, samphire-leaved southernwood. "Leaves compound, divaricate, linear, fleshy, smooth; stem rising, panicled." It has the habit of the *A. campestris*; stems from half a foot to a foot in height; leaves pinnatifid and trifid. Found by Loesling on the sandy shores of Portugal. Cultivated by Miller in 1768. 24. *A. vallesiacae*, downy southernwood; "leaves pinnate, many-parted, filiform, tomentose; flowers sessile, erect, subcolumnar, having few florets." An erect shrub, a foot high; leaves hoary, bipinnate; pinnae pinnate, and also trilobate; flowering branches tomentose, alternate; flowers solitary, with linear bractes; scales of the calyx concave, outer tomentose, inner membranaceous. No female florets. A native of Spain, Piedmont, and the Valais, flowering in August. Introduced by Drs. Pitcairn and Fothergill. 25. *A. maritima*, sea wormwood, Hudf. 358. With. 709. Woodv. t. 122. Smith, 864. "Leaves many-parted, tomentose, racemes drooping; receptacle naked; female florets three." Root woody, perennial; stems erect or decumbent, leafy, furrowed; lower leaves pinnate; pinnae tripartite; upper various, divided, at the top simple, all entire at the margin, and white on both sides; racemes drooping; flowers ovate, nodding. There are three varieties of this species. A British plant growing on the sea-coast, and flowering in August. 26. *A. glacialis*, silky wormwood, Jacq. Aust. App. t. 35. "Leaves palmate, multifid, silky; stems ascending;

flowers glomerate, level-topped." Leaves small, three-parted, linear, segments trifid, subsulcate, silky white, tomentose, very short on long footstalks; those below sheathing the stems which are a span high, simple, subtomentose, leafy; flowers globose, yellow, terminal, on very short peduncles; receptacle hairy. Villars describes it as three or four inches high, with about four terminal flowers, inclosing from forty to fifty florets. A native of the south of Europe, flowering in August; cultivated by Miller in 1748. 27. *A. rupestris*, creeping wormwood, Flor. Dan. t. 801. "Leaves pinnate; stems ascending; flowers globose, nodding; receptacle pappose;" stems near a foot high, somewhat hirsute; leaves on long footstalks, narrow, having two or three pairs of pinnae, with an odd one; pinnae three or five-parted; flowers axillary, on long peduncles, nodding; receptacle hairy. A native of Alpine situations, cultivated by Miller in 1748; flowers in August. 28. *A. spicata*, spiked wormwood. Jacq. Aust. 5. App. t. 34. "Root-leaves biternate; stem ascending, spiked; flowers erect." Linnæus made this a variety of the *rupestris*, but Haller says, though it has the same habit, the leaves in this case are much broader and each pinna trifid, and the nerve is very broad; on the stem the leaves are sessile, semipinnate, with four pairs, the last largest, shortly trifid; stems not branching, scarcely a span high; peduncles ones-flowered; leaflets of the calyx ovate, dark coloured, and hence called *Genipi noir*. A native of the Alps of Switzerland, Austria, Piedmont, and Dauphiné.

*** *Erect herbaceous, with compound leaves.*

29. *A. anethifolia*, dill-leaved wormwood, Gmel. Sib. 2. t. 54. "Leaves multifid, very slenderly divided; corymbs roundish, nodding, one-ranked, loosely spiked;" the stem is herbaceous; florets reddish; calyces large, green, and streaked with white. A native of Siberia. 30. *A. pontica*, Roman wormwood. Jacq. Aust. 1. t. 99. "Leaves many-parted, tomentose beneath; flowers roundish, nodding; receptacle naked." Stems in their natural state short, of two feet high, but when cultivated in gardens, four; upright, reddish, smooth, hoary, branched. Stem-leaves bipinnate, tomentose, with sharp linear segments, uppermost entire, simple, those at the bottom of the branches and top of the stem are simple pinnate; flowers in racemes, nodding, hoary; disk yellow; florets 24, those in the circumference about six, female, apetalous, and of a greenish yellow; the others hermaphrodite; seeds naked; receptacle conical, naked. A native of Germany, Piedmont, &c. flowering in September. Cultivated here in 1683. 31. *A. austriaca*, Austrian wormwood. Jacq. Aust. 1. t. 100. "Leaves many-parted, tomentose, hoary; flowers oblong, nodding, receptacles naked." Stems from six inches to a foot and a half in height; branches numerous, sending forth simple short twigs, which are one-flowered on the shorter stems, but on the greater many-flowered; leaves on the twigs are first entire, then trifid, and so on, increasing the divisions till they become subtriplicate-pinnate; hermaphrodite florets about eight, females from four to seven, apetalous. It differs from the *maritima* in the leaves, being less tomentose and hoary, roundish, and not oblong. A native of Austria. 32. *A. annua*, annual wormwood, Gmel. Sib. 2. n. 108. "Leaves three-fold pinnate, smooth on both sides; flowers subglobose, nodding; receptacle smooth, conical." An annual, with an erect, smooth, streaked stem, rising to eight feet in height, though seldom higher than two in our climate; flowers yellow on axillary racemes; peduncles long, with lanceolate entire bractes; all the florets hermaphrodite. A native of Siberia and China; cultivated by Miller in 1759. It flowers in August. 33. *A. tanacetifolia*, tansey-

ARTEMISIA.

leaved wormwood, Allion. Ped. n. 608. t. 70. f. 2. Gmel. Sib. 2. t. 58. "Leaves bipinnate, underneath tomentose, shining; pinnae transverse; racemes simple." Stems numerous, simple, from six inches to a foot high; root-leaves sheathing, petioled, ovate-pointed, ash-coloured, having from five to eight pinnae; pinnules three-toothed; pinnules of the stem-leaves simple; upper oval, lanceolate; spikes terminal, compound, with racemes rising from all the axils; in the terminal spike there is a stipule to each peduncle, which is one-flowered; flowers nodding, in pairs, all towards the same side; receptacle naked; perennial. A native of Dauphiné, Piedmont, and Siberia. In high situations it is sometimes entirely tomentose. 34. *A. absinthium*, common wormwood. Hudf. 358. With. 710. Woodv. Med. Bot. t. 120. "Leaves multifid, of a silky white; flowers hemispherical, pendulous; receptacle hairy." Root woody, branched; stems rather erect, branched, angular, paniced at the top; lower-leaves, bipinnatifid; upper, pinnatifid, or digitate; divisions elliptic-oblong, obtuse, entire; racemes erect; flowers nodding, yellow; florets of the disk numerous, of the ray very few; receptacle very hairy. It grows wild among rubbish, rocks, and on road sides. 35. *A. vulgaris*, mugwort, Hudf. 359. With. 710. Med. Bot. t. 121. "Leaves pinnatifid, flat, gashed, tomentose underneath; racemes simple; flowers ovate; receptacle naked;" root woody; stems four feet high, erect, branched, paniced, furrowed, smooth, leafy, purplish. Leaves alternate, petioled, pinnatifid, gashed above and smooth, of a dark green, underneath tomentose, very white; racemes somewhat erect, simple, leafy; flowers sessile, erect, ovate, woolly; receptacle naked; florets of the ray five. It affects similar situations as the preceding species, and like it flowers in August. 36. *A. pectinata*. "Leaves pinnate, pectinate, smooth, sessile; flowers axillary, solitary, sessile, having four florets;" a fragrant annual having a stem about eight inches high. It is easily to be distinguished by its simply pinnate leaves; pinnae setaceous, parallel, pectinated; flowers solitary, from the axils along the stems. Found by Pallas in the dry lands of Dauria.

*** Leaves simple.

37. *A. integrifolia*, entire-leaved mugwort, Gmel. Sib. 2. t. 48. f. 1. "Leaves lanceolate, tomentose underneath, entire or with one or two teeth; female florets five." Stems simple, about two feet high; leaves narrow, cut into acute segments at their edges, somewhat like those of buck's horn plantain; flowers axillary, in small loose spikes, large, of a pale yellow. A native of Siberia. 38. *A. japonica*, Japanese mugwort, Thunb. Jap. 110. "Leaves on the branches smooth, lanceolate-entire, on the stem oblong, trifid; flowers racemed, nodding." An undershrub with an erect angular, streaked, wand-like, smooth, stem, branched at the top, and above two feet high; leaves on the stem alternate; sessile, attenuated, and entire towards the base, but towards the top cut, ferrate, spreading; those on the twigs similar, but very small; flowers pointing in the same direction, on capillary reflex peduncles. It differs from the *cærulescens* in having smooth leaves. A native of Japan. 39. *A. cærulescens*, bluish mugwort, Hudf. 359. With. 711. Smith, 866. Gmel. Sib. 2. 131. t. 64. f. 1. *Abf. maritimum* *lavandulæ* folio. Bauh. pin. Ray Hist. &c. "Leaves hoary; on the stem lanceolate, entire; lower leaves multifid; flowers cylindrical; receptacle naked." Root perennial fibrous; stems nearly erect, round, channelled, pubescent, leafy paniced; leaves alternate, petioled, hoary on both sides; racemes erect, simple; flowers ovate-cylindrical, small, woolly; florets of the ray three. A native of the southern parts of Europe, on the sea-coast; and found in Lincolnshire. Cul-

tivated by Tradescant, jun. in 1658. 40. *A. dracunculæ*, Tarragon. Scop. Carn. n. 1032. Gmel. Sib. 2. t. 59 & 60. f. 1. *Draco herba*, Ger. Emac. 249. Park. Raii Hist. "Leaves lanceolate, smooth, quite entire." Stem ill, smooth, branched, from one to two feet high; leaves petioled, green on both sides; flowers yellow, in a kind of spike all directed the same way; hermaphrodite florets twelve, female six; receptacle flat, glutinous, naked. A native of Siberia and Tartary. Cultivated in 1596, by Gerard; flowers appear in August. Tarragon is frequently used in salads, especially by the French, to correct the coldness of other herbs. The leaves make an excellent pickle, they have a fragrant smell, and aromatic taste. 41. *A. chinensis*, Chinese Mugwort. Gmel. Sib. 2. 61. f. 1. 2. Lour. 492. "Leaves simple, tomentose, obtuse, lanceolate; below wedge-shaped, three-lobed." Stem herbaceous, simple, cottony, branched, between two and three feet high; lower leaves obtuse, three-lobed; upper lanceolate-linear, entire, tomentose on both sides, sessile crowded, scattered; flowers small, on terminating erect racemes. A native of China and Siberia. In China the moxa is prepared from this species. See Med. Prop. 42. *A. maderaspatana*, Madras Wormwood. Jacq. Hort. 3. t. 88. called by him *Tanacetum Ægypt.* "Leaves simple, lyrate sinuate; stems procumbent; flowers pedunculate, solitary, globose, opposite to the leaves;" an annual, growing close to the ground; branches alternate, streaked, pubescent; leaves soft, widening outwards; peduncles one-flowered, naked, streaked, villose; flowers large, yellow, with a convex disk. A native of the East Indies. Introduced in 1780, by M. Thouin. 43. *A. minima*, least wormwood. Burm. Ind. i. t. 58. f. 3. *centipeda orbicularis*. Lour. 493. "Leaves wedge-shaped, repand; stem procumbent; flowers axillary sessile." This is a very minute annual; leaves smooth; flowers very small, axillary, solitary, with six or seven florets. A native of China, where it was found by Lagerstrom, and also of Japan; introduced here by M. Thouin in 1783. 44. *A. littoralis*, Retz. Obs. 5—28. n. 77. "Procumbent, fringed; leaves spatulate, ferrate-toothed; calyces naked, pedicelled." This resembles the forty-second species, but the whole plant except the calyces is covered with a downy or cottony substance. Gathered by Koenig in the East Indies, on the coast.

Medical Properties. Many of the species of artemisia possess similar sensible and medicinal qualities; but those species which now have a place in the *Materia Medica*, are southernwood, common wormwood, mugwort, sea wormwood, and Tartarian southernwood or wormseed. The first has been esteemed as a stomachic, carminative, and deobstruent, and used more especially for removing obstructions in the uterine system. But it is now rarely prescribed unless as an ingredient in fomentations. Common wormwood is intensely bitter, and is the most powerful medicine of the whole genus. Its qualities are stated by Bergius to be antiseptic, antacid, anthelmintic, resolvent, tonic, and stomachic. Though it is now chiefly employed in the two last mentioned characters, yet we are told of its good effects in a great variety of disorders, as intermittent fevers, hypochondriacal affections, visceral obstructions, gout, gravel, scurvy, dropsy, worms, &c. With some it is said to have a narcotic power, and to occasion head-ache. It may be given in powder, but it is more commonly preferred in infusion. The Edinburgh college directs a tincture of the flowers. Externally wormwood is used in discutient and antiseptic fomentations. Mugwort was by the ancients thought to be very efficacious in promoting the uterine evacuation, and relieving hysterical complaints, but it is now so little valued that

it has been expunged from the *Materia Medica* by the London college. A substance called *moxa* is prepared in Japan, from the dried tops and leaves of mugwort, by beating and rubbing them between the hands till only the fine lanuginous fibres remain, which are then combed and formed into little cones. These used as cauteries, are greatly celebrated in eastern countries for preventing and curing many disorders; but chronic rheumatisms, gouty and some other painful local affections, seem to be the chief complaints for which the moxa can be rationally employed. Sea wormwood, by being less powerfully bitter, must be considered in a proportionate degree a less efficient medicine than the common; but as it is less disagreeable to the stomach, it is more generally preferred; and a conserve of the tops of this plant is directed in the London Pharmacopœia. Wormseed is so called from the power of these seeds in destroying worms, for which their character has been long established. The dose is from one to two drams for an adult, twice a day. See Woodv. Med. Bot.

Propagation and Culture. Most of the plants of this numerous genus are hardy perennials, and may be increased without much difficulty by seeds, parting the roots, slips, or cuttings. The first species and a few others that are natives of very warm climates, and of course rather tender, must be placed in a green-house with myrtles, and other hardy exotics, which require a large share of free air, in mild weather, when they should be frequently watered. They love a light fresh soil, and may be propagated by slips, or cuttings. In general they will succeed in a shady border, defended from the frost. See Martyn's Miller's Dict.

ARTEMISIUM, in *Ancient Geography*, a promontory of Eubœa, on the northern side of the island, above the town of Histria, and opposite to the ancient Olyzon, and the Pegasæan gulf. It had a temple consecrated to Diana; and it was famous for the first victory gained by the Greeks over the fleet of Xerxes. This naval engagement happened on the same day with the glorious action at Thermopylæ. The Grecian fleet, consisting of 271 sail, was stationed in the harbour; but that of the Persians, which was much more numerous, had anchored in the road that extends between the city of Castanea, and the promontory of Sepias on the coast of Thessaly. The first line of their fleet was sheltered by the coast of Thessaly; but the ships of the other seven lines rode at anchor, with their prows turned towards the sea. On the morning of the second day after their arrival on the coast, and after their arrangement was made, there arose a dreadful storm, which raged for three days, and which destroyed 400 of their galleys, besides a great number of store-ships and transports. However, 800 ships of war, together with many vessels of burden, sailed into the Pegasæan bay, and anchored in the road of Aphetæ, which, at the distance of a few miles, lies directly opposite to the harbour of Artemisium. The Grecians, who had posted sentinels on the heights of Eubœa, to watch the effects of the storm and the motions of the enemy, upon receiving information of the disaster that had befallen the Persian fleet, poured out a joyous libation, and sacrificed with devout gratitude to "Neptune the Deliverer." The Persians, notwithstanding their loss, were still confident of victory; and detached 200 of their best-sailing vessels round the island of Eubœa, for the purpose of encompassing the Grecian fleet, and of preventing any of them from escaping through the narrow Euripus. After sun-set the Grecian fleet approached in a line, and were met by the Persians. At the first signal, the Greeks formed into a circle; and at the second, began the engagement. Surrounded as they were by the enemy, and crowded into a narrow space, they soon

took 30 of their ships, and sunk many more. When night came on, with a violent storm of rain and thunder, the Greeks retired into the harbour of Artemisium, and the enemy were driven to the coast of Thessaly. The greatest part of the Persians fortunately escaped immediate destruction, and gained the Pegasæan bay; but the ships that had been ordered to sail round the island, were overtaken by the storm at a considerable distance from the shore; and, unable to direct their course, they were under a necessity of contending with the storm during the greatest part of the night, and they were all wrecked amidst the shoals and rocks of an unknown coast. With the dawn of morning the Persians perceived the extent of their misfortunes: but the Greeks were seasonably reinforced with a fleet of fifty-three Athenian ships. Thus aided and encouraged, they seized the advantage of the ensuing dusk of the evening, to renew their attack; and, at the appointed time, availing themselves of their skill in fighting, and their knowledge of the coast, they sailed towards the road of Aphetæ; and having cut off the Cilician Squadron from the rest, totally destroyed it; and at night returned to Artemisium. The Persians, enraged by the disasters and disappointment they had experienced, and dreading the resentment of their sovereign, determined to make one other vigorous effort. As the Greeks had availed themselves of the night, they determined to choose the time of action. Accordingly, on the third day at noon, they sailed forth in the form of a crescent, which they conceived to be still of sufficient extent to enclose the Grecian line. The Greeks, emboldened by success, were too confident to decline any offer of battle, though their admirals, and particularly Themistocles, would probably have preferred delaying it to a more favourable opportunity. The deficiency of skill and courage on the part of the barbarians was supplied by the impetuosity and violence of indignation. The battle was protracted, and remained for a longer time doubtful than on any former occasion: many Grecian vessels were destroyed, five were taken by the Egyptians, who, on the side of the Persians, distinguished themselves as much as the Athenians did on that of the Greeks. The persevering valour of the latter at length prevailed; the enemy retired, and acknowledged their superiority, by leaving them in possession of the dead and the wrecks. However, the victory was dearly purchased; as their vessels, and especially those of the Athenians, were much shattered; and their great inferiority in the number and size of their ships, made them more sensibly feel every diminution of strength. The engagement at Artemisium, though it was not absolutely decisive, contributed greatly to encourage the Athenians, who were now convinced, that the enemies, notwithstanding their immense number, were not invincible. Gillies's Hist. of Greece. See ATHENS.

ARTEMISIUM, a town of Caria, situate in the eastern part of the gulf of Glancus.—Also, a place in the island of Delos, Herodotus.—A place in the Peloponnesus, Polybius.—A town of Italy, in Magna Græcia, belonging to the Oenotrians; now *St. AGATHA*.—An island of Greece, between that of Eubœa and the promontory Sunium, Arrian.—A mountain of Peloponnesus, in Arcadia, near the river Ladon. Pausanias mentions a mountain of this name, to which he refers the source of the river Inachus, and where was a temple of Diana.—A place of Sicily, where was the camp of Sextus Pompeius, Dion & Appian.—A fort of Greece, built by Justinian, at the mouth of the river Rechius or Regius.—A town on the eastern side of Spain, called also Dianium, and now Denia, on the sea-coast of Valencia.

ARTEMISIUS, in *Ancient Chronology*, the name of a Grecian month, the seventh of the year among the Macedonians,

nians, in Asia, at Ephesus, Pergamus, &c. among the Syromacedonians, Tyrians, Sydonians, and Lycians. Among the Lacedæmonians and Corcyreans it was the second month of the year, and corresponded nearly to our February.

ARTEMITA, in *Ancient Geography*, a small isle of the Ionian sea, opposite to the mouth of the river Achelous.—Also, a large town of Asia, in Mesopotamia, according to Pliny, but placed by Strabo in Babylonia, 500 stadia east of Seleucia, on the banks of the lake Arfissa.—A town of Asia, in the Greater Armenia.—A town of Asia, in Arabia Deserta. Ptolemy.

ARTEMIUS, a mountain of Peloponnesus. Pliny.

ARTEMON, or ARTEMAS, in *Biography*, the leader of an ancient sect among the Christians, and supposed by Tillamont to have arisen about the year 200. Eusebius (E. H. l. v. c. 27, 28.), early in the fourth century, speaks of him as the propagator of a heresy, which Paul of Samosata endeavoured to revive in his time. Artemas and his associates, according to Theodoret, concurred with other Christians in acknowledging the supreme deity, and owning him to be the creator of the universe. But they maintained, that Christ was a mere man, born of a virgin, and superior in virtue to the prophets. This, he said, was the doctrine of the apostles; and they alleged, that all the ancients, as well as the apostles themselves, received and taught the same things which they now held; and that the truth of the gospel had been preserved till the time of Victor, the thirteenth bishop of Rome; but by his successor, Zephyrinus, the truth had been corrupted. They are accused, however, in a work cited by Eusebius, with corrupting the scriptures, and transcribing them with variations, which they called emendations, but which their enemies denominated corruptions. They are said to have proceeded so far as to have rejected the law and the prophets. It was also charged upon Artemon and his followers, that they neglected the holy scriptures, studied geometry, and admired Aristotle, and Theophrastus, and Galen. From this account it appears, that whatever might be their error, they were men of inquiry and learning; and Dr. Lardner conjectures, they might join with the study of the scriptures that of mathematics and philosophy. He also imagines, that the alterations or corruptions, which were the subjects of complaint, related merely to some Greek copies of the old testament, probably the seventy; and though he does not wholly excuse these men, he thinks this consideration may serve to lessen the injury of their conduct. Lardner's Works, vol. ii. p. 379, and vol. ix. p. 465, &c. The followers of Artemon were called *Artemonites*.

ARTEMUS, in *Geography*, a cape of Spain, in Valencia, called also the "Cape of St. Martin," and the "Emperor's point."

ARTENA, in *Ancient Geography*, a town of Italy, in Etruria, in the territory of the Cerites, mentioned by Livy, as destroyed by the kings of Rome.—Also, a town of Italy, in Latium, in the country of the Volsci; which was taken, says Livy, about the year of Rome 351, and totally rased.

ARTENAY, in *Geography*, a town of France, in the department of the Loiret, and chief place of a canton in the district of Neuville, 11 miles north of Orleans.

ARTEENNA, or AVIS DIOMEDEA, in *Ornithology*, a name given by Ray, Willughby, and other old writers, to the bird called by Linnæus PROCELLARIA PUFFINUS; which see.

ARTERN, in *Geography*, a town of Germany, in the circle of Upper Saxony, and county of Mansfeld, 29 miles N. N. E. of Erfurt. N. lat. 51° 17'. E. long. 11° 8'.

ARTERIA ASPERA, in *Anatomy*, the tube by which the air passes into and out of the lungs in respiration. It is also called the trachea, and windpipe. See LUNGS.

ARTERIA Venosa, a name given by the ancients to what we call the pulmonary vein, or that vessel whereby the blood is conveyed from the lungs to the left ventricle of the heart. Gor. Def. Med. p. 54.

ARTERIACS, ARTERIACA, medicines proper for disorders of the *trachea*, and the voice. This term, says Dr. Cullen (Mat. Med. vol. i. p. 172.), conveys no precise meaning, and is therefore improper.

Arteriacs are reduced by Galen into three kinds: 1. Such as are void of all acrimony, serving to mollify the asperities of the part; to which kind belong, gum tragacanth, *aster samias*, amyllum, or starch, milk, &c. 2. Those of an acrimonious quality, whereby they stimulate even the sound parts; such are honey, turpentine, bitter almonds, iris root, &c. 3. Those of an intermediate kind, soft and mild, yet detergent; such are butter, and divers preparations made of almonds, milk, honey, &c.

ARTERIOSA Vena, or *arterial vein*, a denomination given to the pulmonary artery, or that vessel whereby the blood is conveyed from the right ventricle of the heart to the lungs.

ARTERIOSUS Canalis is the continuation of the trunk of the pulmonary artery of the fœtus into the aorta. See Fœtus, *Peculiarities in the Structure of*.

ARTERITOMY is a surgical operation, so denominated from *αρτηρια*, an artery, and *τομή*, I cut. It therefore signifies, the artificial section, or opening of an artery, for the purpose of evacuating blood. The advantages and disadvantages of this operation, as well as the manner of performing it, are considered under the head of BLEEDING: where the subject of PALPATOMY is likewise discussed at some length.

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