D.

D, In the Italian muſic, intimates that, in thorough baſſes, the treble or deſcant ought to play alone; as T does the tenor, and B the baſs. *Broſſard.* Dict. Muſ. in Voc.

DC, in the Italian muſic, an abbreviation of *Da Capo*, i. e. from the head or beginning: theſe words or letters are commonly met with at the end of rondeaus, or ſuch airs and tunes as end with the firſt ſtrain, and intimate that the ſong is to be begun again, and ended with the firſt part. *Broſſ.* Dict. Muſ. in Voc.

DAB, in ichthyology, a name given by the Engliſh to a ſmall fiſh of the pleuronectes kind, called by authors the *Paſſer Aſper* and *Limanda*. See PASSER ASPER and PLEURONECTES.

DABUH, a name given by the Arabs to the Hyæna. See HYÆNA. *Hoſm.* Lex. univ.

DACE, in ichthyology, the Engliſh name for the fiſh called by authors the Leuciſcus. According to the new ſyſtem of Artedi, this is a ſpecies of the Cyprinus; and it is called by ſome Albicula and Albicilla. See LEUCISCUS.

This fiſh is extremely common in our rivers, and gives the expert angler great diverſion. The *Dace* will bite at any fly; but he is more than ordinarily fond of the Stone Caddis, or May-fly, which is plentiful in the latter end of April and the whole month of May. Great quantities of theſe may be gathered among the reeds or ſedges by the water-ſide, and on the hawthorn-buſhes near the waters. Theſe are a large and handſome bait; but as they laſt only a ſmall part of the year in ſeaſon, recourſe is to be had to the Ant-fly. Of theſe the black ones, found in large mole-hills or ant-hills, are the beſt. Theſe may be kept alive a long time in a bottle, with a little of the earth of the hill and ſome roots of graſs; and they are in ſeaſon throughout the months of June, July, Auguſt, and September. The beſt ſeaſon of all is when they ſwarm, which is in the end of July, or beginning of Auguſt; and they may be kept many months in a wooden veſſel, waſhed out with a ſolution of honey and water, even longer than with the earth and graſs-roots in the vial; tho' that is the moſt convenient method to be taken with a ſmall parcel, taken for one day's fiſhing. In warm weather this fiſh very ſeldom refuſes a fly at the top of the water; but at other times he muſt have the bait ſunk to within about three inches of the bottom. The winter fiſhing for *Dace* requires a very different bait: This is a white maggot with a rediſh head, which is the produce of the eggs of the Beetle, and is turned up with the plough in great abundance. A parcel of theſe put in any veſſel, with the earth they were taken in, will keep many months, and are an excellent bait.

Small *Dace* may be put into a glaſs-jar with freſh water, and there preſerved alive for a long time, if the water be properly changed. They have been obſerved to eat nothing but the animalcula in the water. They will grow very tame by degrees. Vid. Philoſ. Tranſ. N°. 478. p. 23. ſeq.

DACOLITHUS, in zoology, a name given by many to a ſmall fiſh, a ſpecies of the Loach, and diſtinguiſhed by the name of *Cobitis barbatula aculeata* by Ray and others. It is a very ſmall fiſh, ſeldom exceeding two, or at the utmoſt three inches in length. Its head is broader and flatter than the reſt of its body: Its back is of a duſky brown, ſpotted with black; and its belly yellow. It has two beards on each ſide of the upper jaw; and on the coverings of the gills has, on each ſide, two prickles, or a double-pointed ſharp hook, by means of which it moves itſelf about among the ſtones. This fiſh loves ſhallow waters with a ſtoney bottom, and ſpawns in May and June. *Willughby*'s Hiſt. Piſc. p. 266.

There is another ſpecies of this fiſh, which has ten beards about its mouth, and otherwiſe reſembles this. There is an opinion that they ſwallow little ſtones, and they have hence the German name ſignifying Stone-ſwallowers, or Stone-biters.

DACTYLETHRA, or DACTYLITHRA, δακτυληθρα, δακτυλιθρα, *digitale*, among the antient phyſicians, a medicine uſed to provoke vomiting. It was a ſort of topical application, and is deſcribed at large by Oribaſius.

It ſeems to have begun from the common practice of thruſting the finger down the throat, to provoke the ſtomach to caſt up its contents. The next ſtep to this was, when the finger would not do alone, to rub it over with a preparation of ſcammony, or with the crude juice of the root of the plant: If this had no effect, the next method was to take eight or ten gooſe-feathers, and, rubbing them over with ſome medicinal oil, they thruſt theſe, as far as was neceſſary, down the throat: And when all theſe failed, they uſed the *Dactylethra*, which was made of ſome kind of ſoft leather ſowed together, and of ten or twelve digets in length, and of the ſhape of a finger. This they filled with wool to the length of ſix digets, and left the reſt empty, to be adapted to the finger; then they rubbed it over with one of the medicinal oils, and introduced it as far as was neceſſary into the ſtomach. *Oribaſ.* Collect. Med. l. 8. c. 6.

DACTYLUS, in ichthyology, a name uſed by many authors for the ſolen or razor-fiſh, ſuppoſed to be the *Dactylus* of Pliny, to which he attributes a quality of being luminous in the dark: but Mr. Reaumur has obſerved, that the common ſolen or razor-fiſh has no ſuch quality; but that the *pholas*, or, as the French call it, the *dail* has: and therefore it follows either that the *pholas* is the *Dactylus* of Pliny, or elſe that this author has attributed to one ſpecies of fiſh what is the peculiar property of another. What Pliny has recorded of them is, that they ſhine in the dark; and that they ſhine the more brightly in proportion to their having more water; that their light is ſeen in peoples mouths while they are eating them; and that the drops of water which fall from them upon the hands and the cloaths of perſons who eat them, have the ſame ſhining quality. The ſhell of this creature is not at all luminous, but only its body and juices; and in this it is no way allied to ſome kinds of fiſh, which are known to have the quality of ſhining in the dark, ſince they never ſhine till they are in a ſtate of decay, and in part rotten; whereas theſe have their luminous quality at all times, even when juſt taken out of the ſea. The glow-worm has only a part of its body luminous, but the *pholas* is luminous all over, and is equally ſo in every part: and when the fiſh is taken whole out of the ſhell, and laid in a dark place, every part of its ſurface ſhines with a very bright light: neither is the light peculiar to the external ſurface of the fiſh, but common to the whole body; for if it be wounded tranſverſely, or longitudinally, the cut parts are equally luminous with the other ſurfaces.

The *pholas* is therefore a true natural phoſphorus, and, like the artificial phoſphorus of urine, it renders every thing luminous that it is rubbed againſt. It is ſcarce poſſible for the fingers to touch them without becoming luminous; and, according to Pliny, they muſt, if eaten, make the lips, tongue, teeth, and every other part of the mouth which they touch, luminous in the dark. Mr. Reaumur obſerved of this fiſh, that when freſh caught it abounds with water, and that this water naturally drops away in the handling it; and, according to Pliny's juſt obſervation, theſe very drops of water are luminous.

The light which this fiſh gives to bodies that touch it, is not of any long continuance, but remains only while they are wet. Mr. Reaumur obſerved, that the light upon his fingers grew fainter and fainter by degrees as they dried; and that on dipping them in water to waſh them, it brightened up again. This author was encouraged by this to attempt ſome way of keeping the fiſh, ſo as to make it a phoſphorus ready for uſe at pleaſure; but this did not ſucceed to his wiſhes. His firſt trial was by drying the fiſh, which loſt its luminous property as it loſt its natural moiſture; but after four or five days, on being wetted, became ſomewhat luminous again. This light however was but very faint, in compariſon of the natural one in the vigorous ſtate of the animal; and all his other trials ſucceeded worſe than this.

In the ſummer months, the fiſh may be kept ſeveral days freſh, and with their luminous property; but as they begin to decay, they gradually loſe it. It ſeems alſo, that there being ſome dead ones among the living, would make them loſe their luminous quality, even in that which is their very beſt ſtate. It is well known, that the *pholas* lives in holes within ſtones, from whence it cannot get out; and Mr. Reaumur cauſing ſome of theſe ſtones to be taken up, in which, on breaking, there appeared to be ſome dead ones, and ſome alive, found that the living fiſh from theſe ſtones had not their luminous property, which ſeemed as it were extinguiſhed by the dead and ſtinking ones. Mem. Acad. Par. 1723.

DACTYLUS *Idæus*, in natural hiſtory, a name given by many authors to the Belemnites; ſuppoſed erroneouſly by many, to be the *Lyncurius* of the antients. For other meanings of the word, ſee DACTYLI, *Cycl.*

DÆDALA, δαιδαλα, in antiquity, two feſtivals in Bœotia, one of which was obſerved by the Platæans at Alalcomenus, where was the largeſt grove in all Bœotia. Here they aſſembled, and expoſing to the open air pieces of ſodden fleſh, carefully obſerved whither the crows that came to feed upon them took their flight, and then hewed down all thoſe trees on which any of them alighted, and formed them into ſtatues, which by the antient Greeks were called *Dædala*.

The other ſolemnity was by far the greateſt and moſt remarkable of the two, being celebrated only once in ſixty years. For the ceremonies obſerved in it, ſee *Pott.* Archæol. Græc. l. 2. c. 20.

DÆDIS, Δαιδις, among the Greeks, a ſolemn feſtival that laſted three days, during all which time torches were kept burning, which gave occaſion to the name. *Pott.* Archæol. Græc. l. 2. c. 20.

DÆSION, Δαισιων, in antient chronology, the Macedonian name for the Athenian month *Antheſterion*, which was the ſixth of their year, and anſwered to the latter part of our November and beginning of December. See ANTHESTERION and MONTH.

DAGUS. See DEIS.

DAIE, in zoology, a name under which Nieremberg has described a bird of the ſize of a pigeon, which, he ſays, lays forty or fifty eggs, each as large as that of a gooſe, but having no white: theſe eggs, he ſays, as well as the bird itſelf, are commonly eaten, and are called by the Indians *Tapun*; and that it digs a hole in the ſand in a ditch-bottom, and there lays, and leaves the eggs covered with ſand to be hatched by the ſun. *Ray*'s Ornithol. App. p. 29.

Mr. Ray declares all this to be falſe and fabulous, and is of opinion that there is no ſuch bird in nature; for though there are ſome birds which lay eggs very large in proportion to their own ſize, as the wild ſwan, and ſome of the ſmaller water-fowls, yet theſe birds lay only one ſuch egg; not to mention the great improbability of any egg being without a white.

DAILE, in a ſhip, the trough wherein the water runs over the decks.

DAIS. See DEIS.

DAISY, *Great* DAISY. See LEUCANTHEMUM.

DAKER *Hen*, in zoology, the Engliſh name for the *ortygometra*, a bird of the gallinaceous kind, ſomewhat reſembling the quail, and called by the Italians the king of the quails, *Re delle quaglie*. It is larger than the quail, and is common in Ireland, and in ſome of the northern counties of England. *Ray*'s Ornithol. p. 122. See ORTYGOMETRA.

DAKIR, in our ſtatutes, is uſed for the twentieth part of a laſt of hides.

According to the ſtatute 51 Hen. 3. *De compoſitione ponderum & menſurarum*, a *laſt* of hides conſiſts of twenty *Dakirs*, and every *Dakir* of ten hides. But by 1 Jac. cap. 33. one *laſt* of hides or ſkins is twelve dozen. See DICKER.

DALEA, in botany, the name of a genus of plants, the characters of which are theſe: the cup is ſmall, one leaved, and divided into five ſegments. The corolla is compoſed of five petals, which are unequal; four of them being oblong, obtuſe, ſtrait, hollow, and equal in ſize; and the fifth, which ſtands above, ſmaller than the others. The ſtamina are ten diadelphous filaments; the antheræ are roundiſh; the germen of the piſtil is oval, and terminates in a pointed ſtylus of the length of the ſtamina; the ſtigma is ſimple; the fruit is an oval bivalve pod, conſiſting of only one cell, and containing only one ſeed. *Linnæi* Gen. Plant. p. 336.

DAMASONIUM, in botany, the name of a genus of plants, called by moſt authors by a very improper name, *ſtarry-headed water-plantain*. The characters of the genus are theſe: the flower is of the roſaceous kind, uſually conſiſting of three leaves, diſpoſed in a ſort of circular form. From the flower-cup ariſes a piſtil, which finally becomes a ſtar-faſhioned fruit, conſiſting of ſeveral capſules, and containing oblong ſeeds.

There are only two known ſpecies of *Damaſonium*: 1. The common *Damaſonium*, called *ſtarry-headed water-plantain*: and 2. The great American *Damaſonium*, with plantain leaves, yellow flowers, and a globoſe fruit.

DAMATRIUS, in antient chronology, the Bœotian name of the Athenian month *Pyanepſion*, which was the fifth of their year, and correſponded to the latter part of our October and beginning of November. See PYANEPSION and MONTH.

DAMIER, in conchyliology, the name given by French naturaliſts to that elegant ſpecies of voluta, the ſpots of which ſtand in a chequered order, and reſemble the marks of a draught or cheſs-board, that being the common ſignification of the word *Damier*. See VOLUTA.

DAMPS, (*Cycl.*)—The pernicious damps in mines ſhew abundantly, that nature affords us inflammable air in ſome caſes; and we have found by experiments that art can do the ſame, and that very probably on the ſame principles with the natural. Sir James Lowther having collected the air of ſome of theſe damps in bladders, preſerved it ſo well, that, when brought up to London, it would take fire at the flame of a candle, on being let out by the orifice of a piece of tobacco-pipe.

It is well known to all that are verſed in chymical experiments, that moſt metals emit a great quantity of ſulphureous vapours during the efferveſcence they undergo in the time of their ſolutions in their reſpective menſtruums. On this principle Mr. Maud founded his attempt of producing an inflammable air by art, like the natural one. It is obſerved that iron, while under ſolution with oil of vitriol, emits a very great quantity of theſe vapours, which are very ſubtile, and not eaſily condenſed. This vapour being received into bladders, in the ſame manner with the natural air of Sir James Lowther, took fire in the ſame manner, on being let out in a ſmall ſtream, and anſwered all the phænomena of the natural kind.

The exact method of preparing it is this: Take two drams of oil of vitriol, mix it with eight drams of common water; put this into a glaſs with a flat bottom, about ten inches wide and three deep, with a long neck. To this put in two drams of filings of iron. The ſolution inſtantly begins with great heat and ebullition, and vapours are copiouſly thrown up to the top of the neck of the glaſs. Lute a bladder empty of air, and, with a tobacco-pipe faſtened in its neck: the fumes of the ſolution will ſoon fill up the bladder. When it is blown full, tie the neck faſt with a ſtring, and then put another in its place; and ſo on, taking them away as faſt as they fill.

The air being afterwards let out at the hole of the tobacco-pipe, will take fire at the approach of the flame of a candle. It uſually happens, that in removing the hands to preſs the bladder in other places, after ſome of the air is ſqueezed out, the fire is ſucked into the bladder: in this caſe it fires all the remaining air in the bladder at once, and goes off with a violent exploſion, like the report of a gun.

One thing very worthy of notice in the courſe of this experiment, is, that the air which ſucceſſively fills ſeveral bladders, during the time of the efferveſcence, muſt have been either generated *de novo* out of the mixture, or elſe recovered from being locked up in the body of the metal in an unelaſtick ſtate. This experiment will eaſily explain a very probable cauſe of earthquakes and volcanos, and all other fiery eruptions out of the earth; ſince by this it appears, that nothing more is neceſſary to form them than an intervention of iron, with a vitriolick acid, and water. Now iron is generally found accompanied with ſulphur, and common ſulphur may be analyſed into an inflammable oil, and an acid liquor, like oil of vitriol. This acid therefore in the bowels of the earth, by being diluted with a little water, becomes a menſtruum capable of acting upon iron, as above deſcribed; and an efferveſcence and inteſtine heat and tumult muſt be the conſequence. The air which comes from the mixture is rarified; and by how much the more it is compreſſed by the incumbent earth, by ſo much the more its impetus will, at length, be increaſed to an unlimited degree, and like gunpowder it will cauſe exploſions, and make earthquakes and eruptions. Nor does there always need the acceſs of fire to ſet theſe vapours to work; for the air in the bladders, if it have been very much heated, will of itſelf take fire as ſoon as it is brought into contact with the external air. Philoſ. Tranſ. N°. 442. p. 282. and 286.

The German miners think themſelves not qualified for their buſineſs, if they are not able to make their weather, as they expreſs it; that is, to cure their damps. Theſe are of various kinds in their mines; ſome ſo ſtrong that they ſuffocate the workmen; others leſs violent, and only making them faint, without doing them any farther hurt, unleſs they are ſo imprudent as to continue a long time in the place. The common way of curing the damp is by letting the air in and out, and cauſing a circulation in it. They ſometimes have cured very conſiderable damps by blowing, for many days together, with large bellows: but the ordinary method of working is by means of long tubes communicating with the air above, by means of which they have continual freſh air, and are able to work on as far as they pleaſe. Some of the cuniculi of theſe mines are five hundred fathoms long; and in the ſilver trinity-mine by Sebemnitz, there is a paſſage quite thro' a very large hill, coming out on the oppoſite ſide to that where it enters. The tubes always anſwer very well in the horizontal cuts; but not in the perpendicular ones, when they go to great depths: in theſe they place a tube all the way down by one ſide, and they then fit a piece of wood-work to the ſize of the hole or cut; and ſeveral times in a day they are forced to thruſt this down, in order to force up all the foul air that is in the pit by the tube, to give room for freſh air in its place. Phil. Tranſ. N°. 48.

In ſome of the coal-pits in the neighbourhood of Mendip hills, fire-damps almoſt continually happen, ſo that great numbers have been killed, maimed, and burnt by them. The colliers however continue their work notwithſtanding, only uſing the cautions of renewing their air very quick, and uſing no candles in their work but thoſe of a ſingle wick, and of ſixty or ſeventy to the pound; which notwithſtanding will give as good a light there, as others of ten or twelve to the pound in other places. They always have the caution to place even theſe behind them, and never preſent them to the breaſt of the work. When any perſon is burnt by theſe damps, they preſently betake themſelves to a good fire, and, ſending for a large quantity of cows milk, they bathe the burnt places with this while warm; and afterwards the places will heal by the common cooling ointments, and healing plaiſters.

In regard to the periodical returns of theſe damps, mentioned by ſome, we find that by the caution of ſmall candles, uſed by the colliers of theſe places, that there is a continual propenſity in them to take fire at all times of the year; and though theſe works ſeldom do take fire, yet, as the colliers ſay, they are moſt ſubject to it in the violence of winter, and chiefly in a black froſt. The danger of firing is alike both in wet and dry grounds. There are no fumes coming out at the mouth of any ſhaft in theſe places, which will take fire at lighted torches or candles being held over them. They ſometimes take fire of themſelves, and ſet fire to the coal of the mine: they ſeem to be as frequently on or near the floor of the pits, as about their roofs; and no current of vapours, or wind, is to be met with at the mouths of the ſhafts by which they go down to theſe pits. In wet works there are many times bubbles ſtanding on the ſurface of the water, which will take fire if a candle be held to them; but theſe, on a cloſe examination, do not appear to be occaſioned by ſubterraneous vapours; but are owing to the dropping of water from the roof of the mine, or the falling in of pieces of coal. Theſe damps are commonly obſerved in our coal-pits; but the lead-mines on Mendip-hills are alſo ſometimes affected by them. Philoſ. Collect. p. 8.

DANAE, or DANACE, Δαναη, or Δανάκη, in antiquity, a coin current among the barbarians, being ſomewhat more than the obolus. (See OBOLUS, *Cycl.*) This they put into the mouths of dead people, to pay for their paſſage over the river Acheron. *Pitiſc.*

DANCRETA, in botany, a name given by the people of Guinea to a plant which they uſe in diſorders of the head, boiling it in water, and uſing the decoction in the way of a fomentation. It is a ſpecies of bindweed, and is called by Pettiver *convolvulus quinque foliis Guineenſis foliis non ſerratis*, or the five-leaved Guinea bindweed with leaves not ſerrated. Caſpar Bauhine, in his Prodromus, deſcribes a ſpecies of bindweed growing in Egypt, which exactly agrees with this in all particulars, except that it is finely ſerrated all round the edges of the leaves. Phil. Tranſ. N°. 292.

DANDELION, in botany. See DENS LEONIS.

DANELAGE. See LAW, *Cycl.*

DANGCANGHAC, in natural hiſtory, the name given by the people of the Philippine-iſlands to the heron. The Spaniards call it *gazza*. It is the ſame ſpecies with that ſo common in Europe. See ARDEA.

DAPHNE, Δαφνη, in antiquity, a kind of divination, taken from the crackling of laurel-leaves thrown into the fire. *Pott.* Archæol. Græc. l. 2. c. 18. T. 1. p. 352.

DAPHNEPHORIA, δαφνηφορια, in antiquity, a novennial feſtival, celebrated by the Bæotians in honour of Apollo. For the ceremonies uſed at this ſolemnity, ſee *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 378.

DAPHNIUS *Lapis*, in natural hiſtory, the name of a ſtone the veins of which repreſent the grain of the wood of the bay-tree, and which was probably formed of the wood of that tree, impregnated with ſtony matter, in the manner of the other foſſil woods.

DAPIFERAT, DAPIFERATUS, the office of dapifer. See DAPIFER, *Cycl.*

DAPPLE *Bay*, in the manege, is uſed for a horſe which has marks of a dark bay colour. Such are alſo called *Bays a mirroir*.

DAPPLE *Black*, in the manege, a black horſe, having ſpots or marks blacker and more ſhining than the reſt of his ſkin.

DAPSILES *Coronæ*, among the Romans, a kind of crowns or garlands worn by the women, which covered their faces, and ſerved as a vail. *Hofm.* Lex. in Voc.

DARANI, in the Materia Medica, a word uſed by ſome of the old writers to expreſs the ſal armoniac of thoſe times, which was the ſame with our ſal gemmæ.

DARDANARIUS, in antiquity, is uſed to ſignify an engroſſer, or one that monopolizes any commodity. The name is derived from one Dardanus, famous for this practice. *Hofm.* Lex. in Voc.

DARE, in ichthyology, an Engliſh name for the common dace, or leuciſcus. See DACE and LEUCISCUS.

DARKENED *Room*. See CAMERA, *Cycl.*

DARSINI, in the Materia Medica of the antients, a name given by ſome to cinnamon. It is generally uſed by Aviſenna, Serapion, and the reſt of the Arabian phyſicians. It appears from the name, however, that the cinnamon of thoſe times was collected in the ſame manner as the xylocaſia, or caſſia lignea was; that is, the bark was not ſtripped off from the branches, but the young branches were uſed, bark and all. It is thence it had this name among them, which expreſſes wood of China, not bark of China. *Dar* is a Perſian name for wood, and is borrowed by the Arabians on this occaſion. *Dar Xixgan* is the name of the aſpalathum, or roſe-wood, and ſignifies wood brought from Xixgan; and in the ſame manner *Dar* is often prefixed to words, ſignifying that the ſubſtance meant by them is a wood. Many of the antients have confounded cinnamon and caſſia together; but Aviſenna always keeps them diſtinct. He always tranſlates the caſſia of Dioſcorides, *Salicha*; and the cinnamomum of the ſame author, *Darſini*.

DARSIS, in medical writers, is uſed for an excoriation of the ſkin. *Blancard.*

DARTS *of Gnats*. See the Article GNAT.

DARU, in botany, a name given by Aviſenna and Serapion to a ſpecies of turpentine-tree, which the latter author calls the lentiſk. This grew up to a very large tree, and bore a much larger and more beautiful fruit than the common turpentine-tree. The tree itſelf was alſo more beautiful in the manner of its growth; and it had, in common with the ordinary turpentine-tree, the property of the ends of its leaves becoming red, which gave the whole a very beautiful appearance. Theophraſtus ſeems to have mentioned this tree, tho' without diſtinguiſhing it from the common turpentine-tree by any peculiar name: he ſays, that tho' in Greece the turpentine-tree was but a ſhrub, yet in Syria and ſome other places it grew up into a large tree. And Rawwolf, in his Itinerary, tells us, that beſide the common turpentine-tree known to us, there are two other ſpecies in Arabia; the one called at this time *Bout Quibir*, which, he ſays, bears the ſame ſort of fruit with the Piſtachia, but that it is larger and more round, and ſhort in proportion to its thickneſs. This ſeems to be the *Aldare* of Aviſenna, which he characteriſes by the largeneſs of the fruit. The other Arabian turpentine-tree, mentioned by Rawwolf, is ſmaller, and is called *Bout Saugier*, or *Seguir*: this does not grow to more than the ſize of a common garden-pea; but has the leaves, fruit, and properties of the turpentine-tree. *Rawwolf's* Itinerary.

DASYMMA, a ſuperficial inequality of the inner part of the eye-lids, accompanied with a redneſs. *Blancard* derives it from δασυς, *hirſutus*.

DATURA, in botany, a name given by many authors to the plant more uſually called *Stramonium*, or the *thorn-apple*. See STRAMONIUM.

DAVACA *terræ*, a portion of land in Scotland ſo called; & *apud priſcos Scotos*, DAWACH of Land, *quod continet quatuor Aratra terræ, quorum unum quodque trahitur octo bobus. Skene.*

DAUCI *Semen*, in the Materia Medica, the name of a ſeed uſed in many of the officinal preparations. The plant which produces it is a ſort of *myrrhis*, or chervill, called *Daucus Creticus*, or candy carrot, by the old authors; but by the moderns *Myrrhis Annua ſemine ſtriato, villoſo, imano*.

The leaves of this plant are finely divided, and hairy; the ſtalks ſlender, and a foot high; and the flowers ſtand in umbells. The ſeeds are of a pale green, hairy and whitiſh, and ſomething like cummin-ſeed; but not ſo long or large, or of ſo ſtrong a ſmell, but of an agreeable flavour, when held ſome time in the mouth. This ſeed being hairy, has very frequently little animalcules and duſt hanging to it; and this fault grows worſe, the longer it is kept, as the animals continue to eat the ſeed, and their excrements become mixed with it in large quantities. It ought therefore to be choſen new, plump and full, and very clean. *Pomet's* Hiſt. of Drugs, p. 5.

It expels wind, and is good againſt cholics, pains of the womb, and in hyſterical complaints.

DAUCUS, in botany, the name of a large genus of umbelliferous plants, the characters of which are theſe: the flower is of the roſaceous kind, conſiſting of ſeveral heart-faſhioned petals unequal in ſize, and diſpoſed in a circular form. The cup finally becomes a fruit, compoſed of two ſeeds furniſhed with long hairs in the manner of the eye-laſhes of animals. *Tournefort*, Inſt. p. 307.

The ſpecies of *Daucus* enumerated by Mr. Tournefort are theſe: 1. The common yellow-rooted *Daucus*, or yellow carrot. 2. The *Daucus* with yellow roots and yellow-flowers. 3. The orange-coloured-rooted garden *Daucus*, or carrot. 4. The white-rooted carrot. 5. The red-rooted carrot. 6. The common wild carrot, or birdſneſt. 7. The ſea *Daucus*, with ſhining leaves. 8. The viſcid or gummy ſea *Daucus*, with fine ſhining leaves. 9. The American *Daucus*, with ſhining leaves. 10. The Spaniſh *Daucus*, with very large umbells. 11. The narrow-leaved cretic *Daucus*, with very long rays to the umbell. 12. The annual *Daucus*, with flowers at all the knots of the ſtalk, called by authors the knotty Caucalis with rough ſeeds. 13. The little annual *Daucus*, with red flowers, called by ſome the red-flowered Caucalis: and 14. The little annual *Daucus*, with white flowers. *Tournefort*, Inſt. p. 308.

DAUCUS *Sativus*, the carrot. There are two or three ſorts of this plant cultivated for the uſe of the kitchen; and theſe are ſown at ſeveral different ſeaſons of the year, to afford a ſupply of young roots, in all ſeaſons, for the table.

The ſeaſon for ſowing them, for the earlieſt crop, is ſoon after Chriſtmas. They ſhould be ſown in an open ſituation, but near a wall; though if they are ſown cloſe under it, they will be drawn up to ſeed too faſt, and give no good roots: about eight inches diſtant is the propereſt place.

They delight in a warm ſandy ſoil, which ſhould be light, and well dug to a good depth, that the roots may meet with no obſtruction in running down, which makes them grow forked, and ſhoot out lateral branches, eſpecially when the ground has been too much dunged the ſame year that the ſeeds were ſown, which will alſo occaſion their being worm-eaten. The hairyneſs of theſe ſeeds makes them apt to ſtick together in ſmall cluſters, and renders it difficult to ſow them equally: they ſhould therefore be always ſown on a calm day, when there is no wind ſtirring to blow them together, and be well rubbed between the hands to ſeparate them thoroughly: when they are ſown they ſhould be trod in with the feet, and the ground raked level over them.

When they firſt come up, they ſhould be houghed out to four inches diſtance; and a month after this, they muſt be cleared again; and if they are to be drawn while young, they are now to be left at ſix inches diſtance every way: if they are to ſtand to grow large, they muſt be ſeparated to ten inches.

The ſecond ſeaſon for ſowing carrots is in February. This muſt be done under a wall or hedge, and on warm banks; but thoſe which are to be in open large quarters, ſhould not be ſown till the beginning of March. See *Miller's* Gard. Dict. in Voc.

In July they may be ſown again for an autumnal crop, and finally in the end of Auguſt for thoſe which are to ſtand the winter. Theſe laſt will be fit for uſe in March, before any of the ſpring ones; but they are ſeldom ſo tender or well taſted. In order to preſerve carrots for uſe all winter, they are to be dug up in the beginning of November, and laid in a dry place in ſand; and theſe roots being planted again in February, will ripen ſeeds in Auguſt for ſucceeding crops: the longeſt and ſtraiteſt roots are to be choſen for this purpoſe.

DAUCUS *Sylveſtris*. The ſeeds of this plant are eſteemed

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one of the moſt powerful diureticks, we are acquainted with, of our own growth. They are alſo given in diſorders of the breaſt and lungs, in pleuriſies, in ſtranguries, and in the ſtone and gravel. They are alſo eſteemed provocatives to venery. An infuſion of them in white wine is excellent in hyſterical complaints.

DAUGHTERS, among the antients, were more frequently expoſed than ſons, as requiring greater charges to educate and ſettle them in the world. Potter. Archæol. Græc. l. 4. c. 14. T. 2. p. 333. See EXPOSING *of Children*.

Thoſe who had no legitimate ſons were obliged, by the Athenian laws, to leave their eſtates to their daughters, who were confined to marry their neareſt relations, otherwiſe to forfeit their inheritance; as we find to have been practiſed likewiſe among the Jews, many of whoſe laws ſeem to have been tranſcribed by Solon.

If an heireſs happened to be married before her father's death, this did not hinder the neareſt relation to claim the inheritance, and even to take the woman from her huſband; which is ſaid to have been a common caſe. *Potter* Archæol. Græc. l. 4. c. 15. T. 2. p. 441. ſeq.

DAVIT, a piece of timber in a ſhip, having a notch at one end; in which, by a ſtrap, hangs a block, called the *fiſh-block*: the uſe of this is to hale up the fluke of the anchor, and to faſten it at the ſhip's *bow* or *loof*. This *Davit* may be ſhifted from one ſide of the ſhip to the other, as occaſion ſerves.

There is a ſmall *Davit* in the ſhip's boat, which is ſet over her head with a ſheever, into which is brought the buoy-rope to weigh the anchor: it ſtands in the carlings in the boat's bow.

DAUPHIN, (*Cycl.*)—DAUPHIN, in natural hiſtory, is the name of a ſpecies of ſhell-fiſh. It is one of the round-mouthed ſnails, or *Cochleæ Lunares*, and is ornamented with rows of indented eminences on all the turns of the ſhell.

DAWELL *Coronde*, in the language of the Ceyloneſe, drum-cinnamon. This is called in Low Dutch *Tromm cel Caneel*. The reaſon of the name is, that the wood of the tree which affords this ſpecies, when dried, is light and tough, and is uſed to make drums of. The bark is taken off while the tree is growing, and is of a pale colour. It is a very bad kind of cinnamon, and is very rarely ſold as ſuch; but the natives uſe it in medicine. Philoſ. Tranſ. N°. 409.

DAY, (*Cycl.*)—DAY-COAL, in natural hiſtory, a name given by the miners of England, and the common people who live in coal-countries, to that ſeam or ſtratum of the coal which lies uppermoſt in the earth. The ſame vein or ſtratum of coal uſually runs a great way through the country, and dips and riſes in the earth in different places; ſo that this upper ſtratum, or day-coal, is in the various parts of the ſame ſtratum, ſometimes near the ſurface, and ſometimes at many fathoms deep. The ſubterranean fires found in ſome of our coal-countries principally feed on this coal, and are nearer, or farther from the ſurface as it riſes or ſinks. Phil. Tranſ. N°. 130.

Grand DAYS. See GRAND.

Law DAY. See LAW *Day*.

DAZE, in natural hiſtory, a name given by our miners to a ſort of glittering ſtone, which often occurs in their works; and, as it is an unprofitable ſubſtance, is one of thoſe things which they call weeds. The word *Daze* takes in, with them, every ſtone that is hard and glittering; and therefore it comprehends the whole genus of the *Telangia*, or ſtony Nodules, which have flakes of talc in their ſubſtance: theſe, according to the colour of the ſtony matter they are bedded in, and their own colour, give the names of *black Daze*, *white*, *red*, and *yellow Daze* to theſe ſtones. The *Daze* ſtones in general much reſemble ſome of thoſe nodules with which the ſtreets of London are paved. But in ſome, inſtead of the matter forming regular nodules of a compact ſubſtance, it forms itſelf into a vaſt number of thin plates, which are applied cloſely over one another, and form ſhelves or even ſeries of planes, encompaſſing, ſometimes a roundiſh, ſometimes an oblong maſs of ore.

Theſe *Dazes* are generally of the poorer part of the vein. The ſhoad-ſtones are many of them of this nature, and the ends of the veins degenerate again into them. The beds of rivers in Cornwall afford large quantities of theſe nodules; and as there is alſo granite in that county, and pieces from the ſtrata of that ſtone are ſometimes worn, and rounded into pebble-like ſhapes, and found in the ſame rivers; theſe having alſo flakes of talk in them, are always called by the miners *Daze*. This however leads to no error in the working; for theſe are never found, except in the rivers; and the miners never attempt to trace a vein from any thing found in the bed of a river, becauſe they know how uncertain the original place of that ſtone may be, which has been for ſo many ages ſubject to be toſſed about by the ſtream of a river, perhaps often rendered more rapid by land-floods. Philoſ. Tranſ. N°. 69.

DEAD, (*Cycl.*)—DEAD *Mens-eyes*, in a ſhip, are a kind of blocks, having many holes in them, but no ſheevers; and through them the *lanniers* go, which make faſt the ſhrowds to the chains. Sometimes the main-ſtays of a ſhip are ſet taught in *Dead-Mens-eyes*; but moſt great ſhips uſe double blocks. The *crowfeet* reeve through the *Dead-Mens-eyes*. *Manwayring*.

DEAD *Nettles*, in botany. See SAMIUM.

DEAD-*riſing*, a term in a ſhip for that part of her which lies aft between the keel and her floor-timbers, and next adjoining to the ſtern-poſt under the bread-room, in a man of war. *Guillet*.

DEAD *ropes*, in a ſhip, are ſuch as are not running, *i. e.* which do not run in any block.

DEADING *bed*, among miners. See DEADS.

DEADS, in mining, is uſed to expreſs that part of the ſhelf or faſt ground which contains no ore, but which encloſes the vein or bed of the ore, like a wall on every ſide. The drifts which they ſink for the tin-ore in Cornwall are generally about three feet over, and about ſeven feet high; ſo that a man may conveniently ſtand upright at work, and manage his tools. In caſe the vein itſelf is not broad enough to allow this, as in many places it is not half a foot over, then they pick down the ſtrata that encloſe it, ſo as to make an opening of the ſame breadth. This work they call *breaking up the deads*. Phil. Tranſ. N°. 69.

This word is alſo uſed for ſuch parcels of common looſe mould or earth, lying above the ſhelf, as uſually contain the *ſhoad*, which they find when they are training a load.

In the Mendip lead-mines, when a vein of ore breaks off abruptly in an earth, they call it a *Deading-bed*; and earth without oar they call *Dead earth*.

DEAL. A well-known kind of wood, of great uſe.

A very good method of ſeaſoning planks of *Deal* and fir, is to throw them into ſalt-water as ſoon as they are ſawed, and keep them there three or four days, frequently turning them. In this caſe they will be rendered much harder, by drying afterwards in the air and ſun; but neither this nor any other means yet known, will preſerve them from ſhrinking.

Rods of *Deal* expand laterally, or croſs the grain, in moiſt weather, and contract again in dry; and thence have been found to make an uſeful hygrometer. Phil. Tranſ. N°. 480. p. 184. See HYGROMETER, *Cycl.* & *Suppl.*

DEATH, (*Cycl.*)—It is generally taught, that the life of thoſe animals, which we call perfect, conſiſts in a continued flux and reflux of blood, nervous juice and air, to and from the principal organs; and that a man may be reckoned dead when he no longer breathes, and his heart and arteries have left off all circulation and pulſation. Even Lanciſi, the beſt author on this ſubject, ſays, that without a ſmall degree of reſpiration, and ſome little motion or trembling of the heart, there is no life. In conſequence of this ſyſtem, the general practice is, that as ſoon as theſe ſymptoms of life are gone, all hopes and endeavours to maintain the ſmall remains of life are laid aſide. But Dr. Stevenſon does not admit this doctrine, being of opinion, that after the motion of the heart, arteries, and lungs ceaſes, there often remains a ſmall degree of vital principle, deſerving attention. After a full ſtop of all thoſe organic motions on which life is ſaid to depend, the juices frequently retain ſo much of the animal proceſs as frequently ſerves to keep up warmth for a long time; which, with proper cheriſhing, might perhaps reſtore life entirely. Every age and country affords inſtances of ſurprizing recoveries after lying long for dead. From the number of thoſe preſerved by lucky accidents, we may conclude a far greater number might have been preſerved by timely pains and ſkill. Med. Eſſ. Edinb. Vol. 5. Art. 77.

This ingenious author hopes, from his theory, that one who from all the abovementioned motions ceaſing, may with propriety be called dead, may recover, and be properly ſaid to come to life again.

His theory is, that the cauſe of animal heat, or of the inteſtine motion which had been going on proſperouſly, while the progreſſive motion of the fluids in the veſſels continued, is now checked; yet ſtill proceeds in a lower manner, perhaps like the beginning of fermentation or putrefaction. By this degree of the animal proceſs, the maſs of fluids, particularly in the great reſervoir of venous blood, the heart, rarifying, preſſing every way, and being reſiſted by the valves, ſwells ſo as to fill the flaccid right auricle of the heart, which had been ſome time empty; and thus ſtimulating its fibres, which were at reſt, ſets them a moving again; as we ſee the heart, after being taken out of the body, by being pricked, or having warm water thrown on it, beats afreſh, tho' it has been for ſome time motionleſs. The right auricle being thus filled, and ſtimulated into a contraction, fills the ventricle; which being irritated, likewiſe contracts and empties itſelf into the pulmonary artery; whereby the circulation begins where it left off, and life is reſtored, if the organs and juices are in a fit diſpoſition for it, as they perhaps are much oftner than is imagined.

From hence it ſeems, that death does not inevitably attend an entire organic reſt of what we call the ſolids of the body; nay, that one cannot be called dead till the energy of the blood is ſo far gone, that, though aſſiſted by all poſſible means, it can never be again able to fill, and ſtimulate into contraction, the right ſinus venoſus and auricle of the heart.

See a remarkable caſe, in ſupport of this opinion, in Med. Eſſ. Edinb. Vol. 5. Art. 55.

The learned Winſlow has given us a treatiſe upon the uncertainty of the ſigns of death.

DECACTIS, in natural hiſtory, a name given by ſome to a kind of ſtar-fiſh, of the branched, or aſtrophyte kind, whoſe

rays are ten in number, where they firſt part from the body, and each ſoon branches out into a number more.

DECADARCHUS, Δεκαδαρχος, among the Greeks, a commander of a party of ten men. *Potter*, Archæol. Græc. l. 3. T. 2. p. 56.

DECALITRON, among the antients, a piece of money uſed by the people of Ægina, in value equal to 10$\frac{2}{3}$ Attic oboli. Vid. *Hofm.* Lex. in voc.

DECAMERIS (*Cycl.*) —In Monſ. Sauveur's ſyſtem the *Decameris* is the tenth part of the heptameris, which he makes the ſeventh part of the meris; and this is the forty-third part of the octave: ſo that the *Decameris* is $\frac{1}{301}$ of an octave. See Mem. Acad. Scienc. 1701, and 1707.

DECAMYRON, in the medicinal writings of the antients, the name of a malagma, conſiſting of ten different kinds of aromatics: theſe were the Indian leaf, maſtick, euphorbium, ſpikenard, adarce, ſtorax, pepper, ointment of nard, opobalſamum, and wax. Vid. *Caſt.* and *James* in voc.

DECANDRIA, in botany, a claſs of plants with hermaphrodite flowers, and ten ſtamina, or male parts in each. See Tab. 1. of botany, Claſs 1.

The word is formed of the Greek δεκα, ten, and ανηρ, male. Of this claſs of plants are the judas tree, baſtard dittany, &c.

DECANUS, in aſtrology, a title given to the god who preſided at any birth, ὁ ωροσκοπος. *Hofm.* Lex. in voc. See the article ASTROLOGY, *Cycl.*

DECASMUS, δεκασμος, in antiquity, the name of an action or proceſs among the Athenians, which was brought againſt any perſon who offered a bribe. They thought it not enough to puniſh the perſon receiving a bribe, but that the perſon who offered it ought to be puniſhed likewiſe. *Pott.* Archæol. Græc. l. 1. c. 23.

DECEIT, *Deceptio*, or *Dolus*, in law, is uſed for any ſubtile, wily ſhift, or trick; to which may be referred all manner of craft, ſubtilty, guile, fraud, ſleight, cunning, covin, colluſion and practice uſed to deceive another by any means. See *Weſt.* p. 2. ſymbol. tit. indictments. ſect. 68.

DECEIVED, in the manege, is uſed, when a horſe upon a demi-volt of one or two treads, working, for inſtance, to the right, and not having yet furniſhed above half the demi-volt, is preſſed one time or motion forwards with the inner leg, and then is put to a repriſe upon the left, in the ſame cadence with which he began. He thus regains the place where the demi-volt had been begun to the right, and works to the left. A horſe may in this manner be *deceived* on any hand. *Guillet*, Gen. Dict. P. 1. in voc.

DECEMVIRATE, in roman antiquity, the government of the Decemviri. See DECEMVIRI, *Cycl.*

DECENNARY, *Decennaria*, the limits or compaſs of ten *Friburghs*. See DECENNIERS, *Cycl.*

DECEPTIONE, in law, a writ which properly lies for one that receives harm or damage, by him that does any thing deceitfully in the name of another.

This writ is either *original* or *judicial*. Old. Nat. Br. fol. 50. Fitz. Nat. Br. fol. 95. See Reg. of Writs, fol. 112. and Reg. Judicial.

DECIMÆ, *Tithes*, in law. See TITHES, *Cycl.*

DECIMIS *ſolvendis pro poſſeſſionibus alienigenarum*, a writ, yet extant in the regiſter, which lay againſt thoſe that had farmed the Priors Aliens lands of the king, for the rector of the pariſh, to recover his tithe of them. Reg. of Writs, fol. 179.

DECK (*Cycl.*)—*Fluſh*-DECK. See the article FLUSH-*Deck*.

DECOMPOSITE *Leaf*, among botaniſts. See LEAF.

DECTA, in botany, a name uſed by ſome authors for the garden beet. *Ger.* Emac. Ind. 2.

DECUMANNI *Dentes*, a term uſed by the Latin writers on heraldry to expreſs that ſort of line in arms, which we call danſette, or dancetté. See DANCETTE, *Cycl.*

It is a kind of indented line, but is very large, and has very few teeth, commonly no more than three. It is ſuppoſed to have been in its origin no other than the letter M, with its two legs extended from one ſide of the field to the other.

DECUPELATION, the ſame with *Decantation*. *Harris*. See the article DECANTATION, *Cycl.*

DECURRENT *Leaf*, among botaniſts. See LEAF.

DEDUCTOR, in antiquity, a client, who, beſides the ordinary ceremony of ſaluting his patron every morning, was likewiſe obliged to attend him on public occaſions. *Pitiſc.* Lex Antiq. in voc.

DEDUTTIONE, in the Italian muſic, the name which Guido Aretine gave to the riſe of the voice, in pronouncing the ſyllables, *ut*, *re*, *mi*, *fa*, *ſol*, *la*: *quia per has deducitur vox*. On the contrary, when the voice deſcended by *la*, *ſol*, *fa*, *mi*, *re*, *ut*, he called it *Redutione*, *quia per has reducitur vox*. *Broſſ.* Dict. Muſ. in voc.

DEER, *Cervus*, in natural hiſtory, the name of a genus of animals comprehending the common deer, and the elke. The characters of this genus are, that the horns fall off every year, that they are ſolid and branched, and that the animal chews the cud.

The word *Cervus*, uſed alone, is underſtood by authors to mean the Stag, or *red Deer*, the others being all diſtinguiſhed by their ſeveral adjectives; the common *fallow Deer* being called *Cervus platyceros*, or the broad horned *Deer*. *Ray*'s Synopſ. Quad. p. 81.

The *red Deer* differs from the common kind in its ſize, and in the figure of its horns. The *common Deer* is more preſerved in England than in any other part of the world, and carries its diſtinction from the *red Deer* in the falcated figure of its horns.

We keep ſeveral ſpecies of theſe however, and may perhaps increaſe them in ſome ſort to many more, as they are a very ſalacious animal, and will be apt to mingle one ſpecies with another. The principal kinds we know at preſent, are, 1. the *Spaniſh Deer*, which is almoſt as large as the *red Deer*, but has a very ſlender neck, and is of a deep dusky colour; the tail in this ſpecies alſo is longer than in ours, and is black all over, not white next the body. 2. The *mottled Deer*, which are beautifully variegated with black, white, and tawney. 3. The *Virginia Deer*, which are larger and ſtronger than ours, and have thicker necks, and are of a grey or aſh colour rather than tawney, and remarkable for the largeneſs of their penis and ſcrotum. 4. A ſpecies which have their hinder hoofs marked with white on the outſide; the ears and tails of theſe are long, their horns branched, and their forehead a little depreſſed or hollowed between the eyes. Theſe will eat bread, fruits, and any thing that is offered them, and are often beautifully variagated; many of them have black variegations, and a black liſt down their back, with a ſeries of white ſpots on each ſide; others are ſo beautifully marked with white ſpots and other variegations, as to equal the zebra in beauty: theſe they call *menaled Deer*. *Ray*'s Synopſ. Quad. p. 80.

The method of hunting *Deer* in the iſland of Ceylon is very particular. The huntſmen go out in the night, and only two uſually go together; the one of theſe carries upon his head an earthen veſſel, in which there is ſome fire burning and flaming: the ingredients are generally ſmall ſticks cut into pieces, and common roſin; of this the other man carries a ſupply about him to repleniſh the pot when it grows low. The perſon who has the fire upon his head carries in one hand a ſtaff, on which there are fixed eight bells, and the larger theſe are the better. This man goes firſt into the woods, and the other follows cloſe behind with a ſpear in his hand. As ſoon as a *Deer* hears the noiſe of the bells, he turns towards the place whence the ſound comes, and ſeeing the fire he eagerly runs up to it, and ſtands gazing at a ſmall diſtance; the ſecond man has then nothing to do but to kill him with the ſpear, for he ſees neither of them.

Not only *Deer* but elks, and even hares are thus taken, for they gaze at the fire, and never ſee the men. The profits of this ſort of hunting are very large, and the danger nothing; for though there are great numbers of tygers, elephants, and wild boars in theſe woods, the huntſmen are in no danger of them while the fire burns, for they all run away from it. Phil. Tranſ. N° 278. p. 1094.

Mouſe-DEER. See MOUSE-*Deer*.

DEER-*field*, a park, or place where deer are kept.

DEER-*Hays*, engines or great nets, made of cords, to catch deer. *Anno* 19. Hen. 7. cap. 11.

DEER's-*Weed*, in botany, &c. See LUTEOLA.

DE ESSENDO *quietum de tolonio*, a writ that lies for thoſe who are by privilege freed from the payment of toll. See Nat. Br. fol. 226.

DEFECTIVE (*Cycl.*)—DEFECTIVE *third*, in muſic. See the articles DIMINISHED *third*, and DEFICIENT.

DEFEND, *Defendere*, in our antient laws and ſtatutes, ſignifies to prohibit or forbid: as, *uſuarios defendit quoque rex Edwardus ne remanerent in regno*. LL. Edw. Conf. c. 37. & 5 Rich. 2. c. 7. In which ſenſe alſo Chaucer uſes it in the following paſſage:

Where can you ſay in any manner age,
That ever God defended marriage.

In 7 Edw. 1. there is a ſtatute entituled, *Statutum de* Defenſione *portandi arma*, &c. And it is *defended* by law to diſtrain on the highway. *Coke* on Littl. fol. 161.

DEFENDERE *unica manu*, to wage law, by denying the accuſation upon oath. *Et ſi forte forisfactor ille factum negaverit, & foreſtarius ſolus ſit ſine teſte, ille debet ſe* defendere unica manu *ad unicam vocem rationabili die data in curia abbatis, & ſi unicum teſtem vel plures habuerit, debet ſe defendere ſexta manu*, &c. Charta facta inter W. de Bray, mil. & Abb. & Convent. de Oſeney ſine dat. See MANUS.

DEFENDEMUS, (*Cycl.*) a word uſed in feoffments and donations, the deſign of which is to bind the donor and his heirs to defend the donee, if any man go about to lay a ſervitude on the thing given, other than is contained in the donation. *Bract.* lib. 2. c. 16. num. 10. See WARRANTY, *Cycl.*

DEFICIENT (*Cycl.*) —DEFICIENT *Interval*, in muſic, is uſed for an interval leſs than the true by a comma. See INTERVAL, *Cycl.* and *Suppl.*

DEFLAGRATION (*Cycl.*) —This ſhort proceſs has been often recommended to the world as of great uſe in trying the ſtrength of brandies, and other vinous ſpirits, and has been greatly improved in this reſpect by Mr. Geoffroy.

The common way of trying ſpirits by deflagration, is to meaſure out any quantity of it, then to heat it, and ſet it on fire; if after it will no longer burn, the remainder is half as much as the quantity meaſured out for the trial was, then the ſpirit tried is found to conſiſt of half water and half totally inflammable ſpirit; that is, it is exactly what we underſtand by the term perfect proof, and according as the remainder is more or leſs than half the original quantity, it is ſo much below or ſo much above proof, or the due ſtrength of brandy.

This method is much more certain than that by the crown of bubbles, which ariſes upon ſhaking the ſpirit in a vial. Monſ. Geoffroy's method is thus; take a cylindric veſſel two inches high, and as much in diameter, conſiſting of thin plate ſilver, that metal being much leſs liable to ruſt than copper; this veſſel muſt be fitted with a little rectangular gage exactly graduated into lines, half lines, &c. then the veſſel being ſet level upon a copper caſe made to contain it, a parcel of the brandy to be examined is poured in, to the height of ſixteen iines. This height is to be exactly hit by pouring in more than enough at firſt, and then with a ſmall tube ſucking out what is ſuperfluous; then the veſſel being heated a little, ſo as juſt to make the liquor fume, it is to be ſet on fire and left to go out of itſelf; at the inſtant when the flame expires the gage is plunged perpendicularly into the veſſel, and the lines and quarters exactly noted, which the liquor wants of its former height: this difference gives the preciſe quantity of pure ſpirit, or alcohol, originally contained in the liquor: thus, if eight lines of phlegm are found remaining, this being the half of the ſixteen lines of the original filling, it is plain that the liquor contained one half ſpirit, and as ſuch it is found to be of the due ſtrength of brandy; or, as we expreſs it, proof ſpirit. If there remains no more than four lines of the phlegm, the ſpirit was double proof, or of a middle ſtrength, between that of common proof ſpirit and alcohol, and ſo ariſe all the other proportions. Mem. Acad. Par. 1718.

DEFLUVIUM, is uſed to expreſs a diſtemper in trees, whereby they loſe their bark; it is thought to be cauſed by a ſharp humour, that diſſolves the glue whereby the bark is faſtened to the wood, and ſometimes by too much drought. *Harris.*

DEFORCEMENT (*Cycl.*) in the law of Scotland, is uſed for the reſiſting, or offering violence to the officers of the law, while they are actually employed in the exerciſe of their functions, by putting its orders and ſentences in execution; whether they be officers of the ſupreme courts of juſtice, as heralds, purſevants, meſſengers, macers; or of inferior courts, as mayors.

The puniſhment of this crime is confiſcation of moveables, joined with ſome arbitrary puniſhment; as fine, impriſonment, baniſhment, or corporal pains, according to the degrees of violence, and other circumſtances which aggravate the crime: beſides, the party aggrieved may have an action of damages, to be highly taxed out of the firſt and readieſt of the offender's eſcheat, or other eſtate. See *Bayne's* Criminal Law.

Deforcing of officers of the Cuſtom-Houſe is provided againſt by the ſame ſtatutes as in England.

DEFOSSION, *Defoſſio*, the puniſhment of burying alive, inflicted, among the Romans, on veſtal virgins guilty of incontinency. It is alſo a Cuſtom among the Hungarians to inflict this puniſhment on women convicted of adultery. Heretics alſo were puniſhed in this manner. *Hofm.* Lex. in voc. *Defoſſio* and *Hovia.* See BURYING *alive.*

DEGREE (*Cycl.*)—The *degree* of the meridian meaſured by Mr. Picart was in the latitude of 49° 21′, and was found to be equal to 57060 French toiſes. But the French mathematicians who have lately examined Mr. Picart's Operations, aſſure us, that the degree in that latitude is, 57183 toiſes. They meaſured a degree in Lapland in the latitude of 66° 20′, and found it 57438 toiſes. A degree has likewiſe been meaſured at the equator, and found to be conſiderably leſs than in the latitude of Paris. From theſe meaſures it appears that the earth is not a ſphere, but an oblate ſpheroid. See EARTH.

DEGREES *of fire.* See the article FIRE.

Prohibited DEGREES in *Marriage.* See MARRIAGE.

DEGREES *in the civil and canon law.* In computing degrees of conſanguinity, the rule of the civil law is univerſal, either in the direct, or collateral, otherwiſe called the oblique line, *Quot ſunt generationes tot ſunt gradus.* But in the canon law the rule is different for the oblique line. And here a diſtinction is made between the *equal*, and the *unequal* oblique line. In the firſt caſe the rule is, *Quot gradibus perſonæ cognatæ diſtant à communi ſtipite; tot gradibus inter ſe diſtant.* In the other caſe the rule is, *Quot gradibus perſona remotior diſtat à communi ſtipite, tot gradibus perſonæ diſtant inter ſe.* Hence, the ſiſter of a perſon's grandfather, by the civil law is diſtant from that perſon in the fourth degree, whereas by the canon law ſhe is only in the third degree. So that what is ſaid in the Cyclopædia, of two degrees in the civil law making only one in the canon law, is not univerſally true, but holds only in the equal oblique line. Vid. *Heinec.* Inſt. Jur. Civ. §. clv.

DEIS or DAGUS, the chief table in a monaſtery. *Solus in refectorio prandebit ſupremus habens vaſtellum, priore prandente ad magnam menſam quam* Deis *vulgaritur appellamus.*

It is thus called from a cloth called *Dais*, with which the tables of Kings were covered. *Matt. Pariſ.* in vit. Abbat. Sanct. Alb. p. 92.

DELIA, Δηλια, (*Cycl.*) in antiquity, a quinquennial feſtival in the iſland of Delos, inſtituted by Theſeus in honour of Venus. *Pott.* Archæol. Græc. l. 2. c. 20.

There was likewiſe a feſtival celebrated at Athens called *Delia*, for which ſee DELIA, *Cycl.*

DELIAS, Δηλιας, in antiquity, the name of the ſhip in which the Delian proceſſion was annually made by the Athenians. See DELIA, *Cycl.*

DELIBAMENTA, in antiquity, a libation offered to the infernal gods, which was always poured downwards; hence this act was expreſſed by the word *defundare. Pitiſc.* Lex. antiq. in voc.

DELICT, in the law of Scotland, is uſed to expreſs an offence of an inferior degree to a crime, to be puniſhed only by the effect of a civil action, for reparation of private damage.

DELIGATION, *Deligatio*, that part of ſurgery which relates to the binding up of wounds, ulcers, broken bones, &c. *Blancard*, Lex. Med. in voc.

DELIVERANCE. See REPLEGIARE.

DELIVERY (*Cycl.*)—The ſigns of *delivery*, or child birth, juſt coming on, are a frequent emiſſion of the urine, teneſmus of the inteſtinum rectum, or frequent wanting to go to ſtool without any real occaſion; this complaint in this caſe is not continual, but laſts only a little while, and ſoon returns again: and often there comes out of the vagina a bloody and mucous matter, followed by ſome thick and turbid urine, and the uterus ſubſides, and plainly ſinks upon and preſſes againſt the os pubis, in a manner very different from what it does at another time: theſe ſymptoms happening at the natural time of *delivery*, that is, in the fortieth week from the firſt ſuppreſſion of the menſes, or the twentieth or twenty firſt from the fœtus being firſt perceived to move, preſage it with great certainty; and particularly if the ſame face of the moon be preſented at this time that was at the time of the firſt ſuppreſſion of the menſtrual diſcharge. Pains of the back and loins alſo come on at this time, which extend themſelves down to the pubes, and theſe are ſucceeded by ſpaſtick motions of the uterus itſelf, and tremblings of the knees and legs, and finally an opening of the mouth of the uterus; this is ſucceeded by a burſting of the ſecundines, and an effuſion of the water they contain, and after this the opening of the womb becomes larger, and the convexity of the child's head is uſually in ſome manner perceived. Delivery is eaſier with young and healthy perſons than with older, or thoſe who are ſickly; and ſuch who live on coarſe food and are accuſtomed to hard labour, uſually ſucceed better in it than thoſe of idle lives and delicate tables. People who are of an even temper of mind uſually alſo ſucceed better than thoſe addicted much to Paſſions; and it is uſually a good omen if the time of *delivery* be at or near that of the uſual diſcharge of the menſes in a ſtate of health.

Difficult births, or hard and dangerous *deliveries*, are to be preſaged from the following circumſtances: from the mother's being fat and of a plethoric habit, or equally from her being of an over tender and delicate conſtitution, and ſubject to frequent illneſs; ſuch as are troubled with a ſtone in the bladder ſucceed very unhappily in labour, and there is much miſchief often from the perſons being obſtinate and unruly, and not liſtening to the dictates of nature, or the advice of thoſe about her. Perſons who are in years, and are with child for the firſt time, uſually have difficult, and often dangerous labours; the pains continuing longer than they ought; and being languid at times, and not returning at ſuch ſhort intervals as they ſhould, are uſually alſo a bad omen. Spurious pains alſo which do not tend to *delivery* but fly upwards, and affect the breaſt and head, and are attended with faintings and anxieties of the Præcordia, and with head-achs and tooth-ach, are always bad omens; as are alſo an hæmorrhage of the womb, or as our women expreſs it, a flooding before the birth, a too ſoon breaking of the ſecundines and eruption of the water; and, on the other hand, a too great firmneſs and toughneſs of the ſecundines, ſo that they will not break, is not a better omen; convulſions coming on in the time of labour are uſually fatal prognoſtics, and deficiencies in the opening of the uterus from ſchirroſities, excreſcences, or injuries of the vaginæ are alſo very bad preſages. Theſe are the general occaſions of bad and dangerous labours depending on the mother, but there are alſo a not leſs number depending on the child. The firm concretion of the ſecundines, or their excretion before the birth are of this kind, as are alſo the winding of the navel ſtring about the child's neck, a bad conformation of the fœtus, as its being hydrocephalous, or the like, or its being dead in the womb: twins in the womb both offering themſelves to the birth at the ſame time; the bad ſituation of the fœtus, as in the lying of the head upon the os pubis, or the firſt offering of a foot or an arm inſtead of the head; a falſe conception or mole found in the uterus at

the ſame time with the fœtus; and to theſe are to be added the improper efforts of the midwife, and the unlucky accident of the labour happening at the time of the full moon, when it is more than ordinarily difficult.

Symptoms of DELIVERY.—Among the common ones are what are called ſpurious or falſe pains, theſe do nothing toward the promotion of the birth, yet they dreadfully torment the patient, and exhauſt her ſtrength, and that ſometimes at the very time of *delivery*, ſometimes three weeks before it, and in all the intermediate time. Theſe are known from the true labour pains, by their being of a flatulent kind, and running ſometimes tranſverſely acroſs the abdomen, ſometimes upwards from it towards the breaſt; theſe are ſeldom a complaint of nature's cauſing, but are uſually owing to a very improper regimen, or the raſh uſe of medicines.

The method of curing them is by giving internally the emollient medicines and the mild aromatics; and among theſe nothing has more ſucceſs than the chewing of cardamoms; externally, carminative liniments, fomentations, and aromatic ſuffumigations, are often found to be of great uſe and benefit.

In difficult labours, where they are preſaged by the beforementioned ſymptoms, it is proper to uſe emollient fomentations to the parts at night before-hand, and to cauſe the woman to ſit over the ſteam of a decoction of emollient herbs, with linſeed, and the like ingredients: the common people give fat broths for ſome time before, and uſe oily liniments to the abdomen. A laxative diet muſt alſo be uſed, and the bowels kept open by gentle doſes of the mild purgative and lubricating clyſters made of water-gruel and the broths of fat meats with ſugar, oil of olives, and a ſmall quantity of ſalt: and at the full time the patient ſhould be made to walk about, and uſe other gentle motion of the body in a warm room, and to continue this without any fatigue till the labour comes on: after this, if after the waters are diſcharged the mouth of the uterus cloſes again, and the fœtus is drawn back into it, then the forcing medicines are to be given, ſuch as borax, with ſmall doſes of ſaffron in the diſtilled waters of pennyroyal, and other uterine herbs. Some recommend in this caſe the liver of an eel, or the powder of the dry ſecundines of another labour, as ſpecifics; but it ſeems dangerous relying on ſuch helps. While the more powerful medicines are given internally, there may be outwardly laid on the abdomen cataplaſms of aromatic and nervous ingredients.

In caſes of debility of the parent, the moſt powerful analeptics are to be given, and tender perſons who are afraid of pain, and of ſtriving to help themſelves, are to be ſeriouſly and warmly exhorted to do their utmoſt, and bear a greater pain a moment, rather than a leſſer many hours. When the pains are interrupted, vague, or languid, ſmall doſes of borax and ſaffron are to be given, once in four hours; and when they fly upwards to the head and breaſt, and bring on ſtraitneſs of the præcordia, and a difficulty of reſpiration, with pains in the head and teeth, the common antiſpaſmodic powders are to be given, and theſe will be greatly aſſiſted in their operation by a gentle clyſter.

When the patient is fat, and of a plethoric habit, bleeding a little before the time is very neceſſary; and ſometime bleeding in the foot, even in the time of labour. When the patient is in danger of being loſt for want of ſufficient efforts, as is ſometimes the caſe, than ſternutatories and vomits are to be given. When the ſecundines adhere they are to be taken off, either with the finger nails or an inſtrument blunt at the end; and when they are ſo tough as not to break at a proper time they muſt be opened: when the waters have flowed out too ſoon, and the vagina is left dry at the time of the approaching birth of the child, the midwife is to anoint it with oil of almonds, pomatum, or any other lubricating ſubſtance.

Convulſions in the time of labour are to be carefully taken off, if poſſible, by analeptics and cinnabarine medicines: the powder of dried earth-worms is recommended by ſome as a powerful ſpecific: in caſes of a hæmorrhage of the uterus, whether it happen in the time of delivery or of ſome time before, and threaten the life both of the mother and child, it is to be treated in the moſt careful manner by attemperating and aſtringent medicines.

When the fœtus is improperly ſituated, the uſe of forcing medicines, ſo commonly the practice of the ignorant midwives, is extremely dangerous; and the only proper aſſiſtance is the hand of an experienced operator, to bring the fœtus into a proper direction, by carefully turning it while in the uterus. The moſt dangerous of all labours are thoſe in which the fœtus is ill formed, hydrocephalous, monſtrous, complicated, and the like; in theſe caſes nothing can do any good but the hand of an intelligent and experienced practitioner. *Junker*'s Conſpect. Med. p. 719. But quære, whether there be any ground for what this author ſays of the influence of the moon?

DELPHINIUM, *Lark-ſpur*, in Botany, the name of a large genus of plants. The characters of which are theſe: the flower is of the polypetalous anomalous kind, conſiſting of ſeveral irregularly ſized petals, the upper one ending in a ſpur or tail, and receiving into its hollow another of the petals, which has alſo its tail or ſpur: the piſtil which occupies the center of this flower finally becomes a fruit compoſed of ſeveral vaginæ, which open length-wiſe, and contain a number of ſeeds, uſually of an angular form. The ſpecies of *Lark-ſpur* enumerated by Mr. Tournefort are theſe: 1. The hairy aconite leaved perennial mountain *Lark-ſpur*. 2. The ſmooth aconite leaved Portugal *Lark-ſpur*. 3. The blue flowered field *Lark-ſpur*. 4. The white flowered field *Lark-ſpur*. 5. The red flowered field *Lark-ſpur*. 6. The pale fleſh-coloured field *Lark-ſpur*. 7. The deep violet blue field *Lark-ſpur*. 8. The field *Lark-ſpur* with changeable flowers. 9. The field *Lark-ſpur* with white flowers variegated with blue. 10. The tall field *Lark-ſpar* with blue and purple flowers. 11. The tall field *Lark-ſpur* with double flowers. 12. The tall field *Lark-ſpur* with variegated double flowers. 13. The broad leafed field *Lark-ſpur* with ſmall flowers. 14. The garden *Lark-ſpur* with large ſingle blue flowers. 14. The garden *Lark ſpur* with large ſingle bluiſh purple flowers. 15. The tall *Lark-ſpur* with fleſh coloured flowers. 16. The tall *Lark-ſpur* with violet purple flowers. 17. The garden *Lark-ſpur* with large ſingle red flowers. 18. The garden *Lark-ſpur* with large ſingle white flowers. 19. The garden *Lark-ſpur* with large ſingle greyiſh flowers. 20. The garden *Lark ſpur* with ſmall ſingle blue flowers. 21. The garden *Lark-ſpur* with ſmall ſingle red flowers. 22. The garden *Lark-ſpur* with ſmall ſingle white flowers. 23. The garden *Lark-ſpur* with ſmall ſingle fleſh coloured flowers. 24. The garden *Lark-ſpur* with ſmall ſingle greyiſh flowers. 25. The garden *Lark-ſpur* with great double blue flowers. 26. The garden *Lark-ſpur* with great double fleſh coloured flowers. 27. The garden *Lark-ſpur* with great double white flowers. 28. The garden *Lark ſpur* with great double purple flowers. 29. The garden *Lark-ſpur* with great double bright red flowers. 30. The garden *Lark-ſpur* with great double ſilvery white flowers. 31. The great flowered garden *Lark-ſpur* with double purple and white flowers. 32. The double variegated early *Lark-ſpur*. 33. The late flowering *Lark-ſpur* with double white flowers. 34. The late flowering *Lark-ſpur* with double roſe coloured flowers. 35. The *Lark-ſpur* with roſe coloured ſpotted flowers. 36. The *Lark-ſpur* with white flowers variegated with red ſpots. 37. The *Lark-ſpur* with a duſty roſe coloured flower. 38. The platanus leafed *Lark-ſpur*, commonly called *Staves-acre*.

Phyſicians ſeldom preſcribe ſtaves-acre internally, being of a hot burning taſte, and apt to raiſe a great flux of ſpittle. This quality however renders it ſerviceable in ſome caſes. It is ſometimes uſed in maſticatories and gargariſms for the tooth-ach. Its powder, ſprinkled on the head, is ſaid to kill lice; and its ſeeds are bruiſed in oil, and the head anointed therewith, for the ſame purpoſe. Vid. *James*, Dict. Med. in voc. *Delphinium*.

DELPHINUS, *the Dolphin*, (*Cycl.*) in the linnæan ſyſtem of zoology, makes a diſtinct genus of fiſhes of the plagiuri, or tranſverſe tailed order; the characters of which are, that the back has two fins, and there are teeth in both jaws. *Linnæi* ſyſtema naturæ, p. 51.

In the artedian ſyſtem of ichthyology, *Delphinus* is alſo the name of a genus of the plagiuri, or cetaceous fiſhes: the characters of which are theſe; the teeth are placed in both the jaws, the pipe or opening is in the middle of the head, and the back is always pinnated.

The ſpecies of this genus are theſe, 1. The *dolphin*, with a coniform body, with a broad back, and a ſubacute ſnout. This is the *phocæna* or porpeſs. 2. The *dolphin*, with an oblong ſubcylindric body, with a long acute ſnout; this is the *Delphinus* of the generality of authors, and is called the *porpeſſe* alſo by the Engliſh. 3. The *Dolphin* with a back ridg'd upwards, and with broad ſerrated teeth; this is the *orca* of authors, called by us the *grampus* and *north caper*; the body of this fiſh is ſo thick, that its breadth is equal to half its length. *Artedi*. Gen. Piſc. 43. See the article PORPESSE.

The name *Delphinus* is of Greek origin, and is ſuppoſed by ſome to be derived from the word Δελφαξ, a pig or hog; and, according to others, from the word Δελφυς, *vulva*, this fiſh being of the viviparous kind, and one of thoſe few which have the vulva and penis in the different ſexes, like thoſe of land animals.

The fiſh known by the antients, both Greeks and Latins, under the name of the *dolphin*, has been much miſunderſtood by the generality of people; and except the Greeks now living, no nation has any determinate notion of what fiſh is meant by it: the modern Greeks having preſerved the name to the ſame ſpecies of fiſh, and all other nations having called it by ſome different appellation.

The Greek name Δελφις ſeems borrowed from the word Δελφαξ, a pig or young hog; and all the nations who have given this fiſh their ſeveral names, have derived them from its reſemblance to the ſame creature, a hog; and this not without reaſon, as there is much analogy between the two animals; the dolphin being as fat as the hog, and having his intrails extreamly like thoſe of that quadruped; but in this there has yet been ſome confuſion, as the common porpeſſe, which

which much reſembles the *Dolphin* in many reſpects, has alſo been indiſcriminately called by the ſame name with that fiſh. The name *Porcus marinus*, a ſea-hog, porco peſce, and as we ſpeak it, *Porpeſſe*, and the *meer ſchwein* of the Dutch, all being, tho' indiſcriminately, names of the phocæna, properly called the *Porpeſſe*, and the *Delphinus* or *Dolphin*. It would be well however if naturaliſts, and indeed all who write or ſpeak on theſe ſubjects, would keep up the proper diſtinctions, always uſing *Delphinus* as the name of the *Dolphin*, and phocæna and the Engliſh name *Porpeſſe* only as the names of that other fiſh diſtinctively from the *Dolphin*.

The difference between the two is, that the *Dolphin* has a much longer ſnout or noſe, ſticking out ſomewhat in form of a gooſe's bill, and is in the whole a longer, ſlenderer, more fleſhy, and leſs fat fiſh, and is the larger of the two. The *Phocæna* or *Porpeſſe* is fatter, ſmaller, broader back'd, and has a more obtuſe and ſhorter ſnout. See the article PHOCÆNA.

The *Dolphin* is a cetaceous fiſh, covered with a ſmooth, but very tough and firm skin; its body is long and rounded, and its back prominent; its noſe long, and rounded at the end; its mouth very large, but ſhutting very nicely and exactly; its teeth ſmall and ſharp, and placed like the teeth of a comb; its tongue broad and ſerrated; its eyes large, but ſo cover'd with the skin that the pupil only appears. Its eyes are placed near the angle of the mouth; and behind theſe are its ears, or auditory paſſages, which are very ſmall. Above the ſnout it has a double pipe, by which it throws out the water neceſſarily taken in with food. It has two ſharp fins join'd like the ſhoulders of a human body to the muſcles, which move them. In the middle of the back it has alſo one fin, which is partly cartilaginous and partly bony, but has no ſpines or prickles. Its back is black, and its belly white, the fleſh is blackiſh, and it has regular lungs in its breaſt of a more tough conſiſtence than thoſe of quadrupeds. Theſe fiſh are ſuppoſed to live a great number of years. The figures of them on ſome antique marbles and coins, which repreſent them crooked, are unnatural; and have been conceived originally by perſons who had ſeen them playing about on the ſurface of the water, in which caſe they ſometimes deceive the eye, and appear crooked: from theſe probably our ſign-painters took their idea of the *Dolphin*. They are an extremely ſwift fiſh in ſwimming, and are able to live a long time out of the water, tho' they can continue but a little while under it without air; hence they are ſometimes taken up dead by fiſhermen in their nets, having been ſuffocated by being forcibly kept under water: they have been known to live three days on dry ground. *Willughby*, Hiſt. Piſc. p. 30.

DELTOIDES (*Cycl.*) —This is a very thick muſcle, covering the upper part of the arm, and forming what is termed the ſtump of the ſhoulder. It is made up of eighteen or twenty ſmall ſingle muſcles in an oppoſite ſituation in reſpect to each other, and united by middle tendons, ſo that taken all together they form ſeveral penniform muſcles. The outer ſurface appears almoſt wholly fleſhy, but on the inner we ſee the ſeveral tendons. All theſe ſmall muſcles are formed and diſpoſed ſo, as to make a conſiderable extent at the upper part; from whence they contract gradually in breadth, till they end in a thick ſtrong tendon, by which the whole muſcle is terminated in a point.

Above, it is fixed in the whole inferior labium of the ſpina ſcapulæ, in the convex or long edge of the acromion, and in the third part of the anterior edge of the clavicle next that apophyſis; it ſurrounds the angle formed by the articulation of theſe two bones by a particular ſlope and fold contrived for that purpoſe: from thence it runs down above one third of the length of the os humeri, where it is inſerted by a thick tendon, in the large muſcular rough impreſſion below the bony ridge, which goes from the great tuberoſity of the head of the bone, and forms the higheſt border of the groove in that part of the bone.

This muſcle may be diſtinguiſhed into three principal portions, one of which is fixed in the ſpine of the ſcapula, one in the acromium, and one in the clavicle: theſe are ſeparated from one another by a ſmall quantity of fat, or a cellular ſubſtance, chiefly near the baſis of the muſcle. The middle or ſtrongeſt portion runs down almoſt directly to its inſertion in the os humeri; the lateral portions ſeem to end ſooner: but that is only becauſe they turn inward toward the bone, and thereby form the biggeſt and thickeſt part of the tendon; the anterior or clavicular portion ſends off ſome fibres to the bone before it reaches the tendon. The portion fixed in the ſpine of the ſcapula ſends backward a thin aponeuroſis, which is ſtrengthened by another tendinous or ligamentary ſeries of fibres. This aponeuroſis is fixed in the baſis of the ſcapula below the ſpine, and from thence is extended toward the inferior angle. The other ſeries begins at the ſpine, and ends near the ſame angle at the beginning of the inferior coſta. Theſe, together with the great tendon, ſeem to contribute to the formation of the tendinous expanſion which covers the muſcles of the arm.

This muſcle at its upper part joins the inſertion of the trapezium, and below that of the brachialis. Anteriorly it joins the pectoralis major, being diſtinguiſhed from it only by a ſmall line of fat, or of a cellular ſubſtance, and a ſmall vein called the cephalica. It covers the head of the os humeri, and adheres to the capſular ligament of the joint, and likewiſe covers the inſertion of the pectoralis major. *Winſlow*'s Anatomy, p. 178.

DELTOIDE *Leaf*, among botaniſts. See LEAF.

DELUBRUM, in roman antiquity, a temple with a large ſpace of conſecrated ground round it. Vid *Pitiſc.* Lex. Ant. in voc. See the article TEMPLE, *Cycl.*

DELUGE (*Cycl.*) —The moſt full and expreſs accounts which we have of the univerſal *Deluge* are in the holy ſcriptures; yet when we conſider theſe carefully, they ſeem to contain only a ſmall part of that amazing ſtory, and for the want of more circumſtances leave us in the dark as to many points, and give us cauſe to wonder at the reception and agreement of the animals in the ark, and at its preſervation in that immenſe ocean; eſpecially at that time when God cauſed the winds to blow to dry up the waters, particularly when it firſt came to the ground. All the objections however that have been, or can be ſtarted in regard to this hiſtory, leave us no room to doubt the reality of the event. We are well aſſured that there once was ſuch an univerſal *Deluge*, which overſpread the whole ſurface of the earth, and the marine bodies found in all parts at land ſufficiently prove that all parts were once covered with water.

Whether we allow that theſe parts of the earth have ariſen out of the ſea, or that the ſea has at ſome time riſen up to them, there are immenſe difficulties in the way of either ſyſtem, and the ſcriptures give us no light into the caſe. The burſting open of the fountains of the great deep, which is given as one of the cauſes of this flood, muſt have been by far the greateſt, for the raining forty days could be of little conſequence toward the drowning of the world; for ſuppoſing it to rain as much in one day as it does with us in a whole year, this is only about forty inches depth, and therefore forty days of ſuch rain could only cover the whole ſurface of the earth with about twenty-two fathom of water; and this would only be ſufficient to drown the low lands next the ſea, but the much greater part of the ſurface of the earth would eſcape.

What is meant by the fountains of the abyſs being broken up, and the opening of the windows of heaven, ſeems not ſo eaſy to be underſtood, but is intended to indicate the waters of the *Deluge*, which was, according to the Moſaic philoſophy, from the letting in of the waters above the firmament, mentioned *Gen.* i. 7. by the windows of heaven; and the riſing up out of the ground of the waters under the earth, ſpoken of in the ſecond commandment; or, as ſome chuſe to underſtand it, by the overflowing of the ſea riſing upon the land, which is expreſſed by the breaking up of the fountains of the great deep, according to their ſenſe of the word.

Upon the whole we may reaſonably conclude, that by one of theſe expreſſions is meant an extraordinary fall of waters from the heavens, not as rain, but in one continued body; as if the firmament ſpoken of by Moſes to ſuſtain the ſupra-aerial ſea had been broken in, and at the ſame time the ocean flowed in upon the land, ſo as to cover all with water.

This cataſtrophe could not have been effected in the common way of underſtanding the accounts of it, but by an increaſe of the waters, and as the withdrawing the flood afterwards muſt in that caſe have been effected only by the again annihilating thoſe waters, the ſyſtem ſeems to labour under more difficulties than any other which has been advanced.

A change of the center of gravity about which the center of the ſea is formed, ſeems not an improbable conjecture, till it appears that this center of gravity was the natural reſult of the materials of which the globe of the earth is compoſed, and by no means alterable while the parts of it remain in their preſent poſition: and beſides, this ſuppoſition could not drown the whole globe, but only that part of it toward which the center of gravity was changed, leaving the other hemiſphere all dry.

Dr. Burnet's hypotheſis is full of inſufficiencies, and contradicts not only the phyſical principles of nature, but alſo the account given of the *Deluge* in the holy ſcriptures more than any other ſyſtem that has been advanced, notwithſtanding the ſeeming agreement he finds between them. And Dr. Hook's opinion of the compreſſion of a ſhell of earth into a prolate ſpheroid, thereby preſſing out the water of an abyſs under the earth, may very well account for drowning two oppoſite zones of the globe; but the middle zone being by much the greater part of the earth's ſurface, muſt by this means be raiſed higher from the center, and conſequently ariſe more out of the water than before.

Dr. Halley reſolves it into the ſhock of a comet, or ſome other ſuch tranſient body. The great agitation that muſt have been occaſioned by it in the ſea, he obſerves, would be ſufficient to account for all thoſe ſtrange appearances of heaping vaſt quantities of earth and high cliffs upon beds of ſhells, which once were the bottom of the ſea, and raiſing up mountains where none were before: ſuch a ſhock as this impelling the ſolid parts would occaſion the waters, and all fluid ſubſtances that were unconfined as the ſea is, to run violently with an impetus toward that part of the globe where the blow was received, and

that

that with force ſufficient to take with it the very bottom of the ocean, and to carry it upon land.

In this caſe it is much more difficult to ſay how Noah and his family could be preſerved, than how all other creatures were deſtroyed: ſuch a ſhock would change the length of the day and year, and alter the axis of the globe according to the obliquity of the incidence of the ſtroke, and its direction in relation to the axis. That ſome ſuch thing as this has at ſome time happened, appears very probably from this, that the earth in its preſent ſtate ſeems but the ruins of a former world, in which we every where find ſuch animal bodies as lived before this *Deluge*, either in their own ſtate, or petrified.

It may be objected to this ſyſtem, that ſuch a ſhock as is here ſuppoſed to occaſion the *Deluge*, muſt have brought on that cataſtrophe inſtantaneouſly, and all at once, not gradually as it is ſaid to have happened; and therefore that tho' there are the evident remains of ſuch a ſhock in the petrified animal bodies found in ſtone, *&c.* yet this may have happen'd before the formation of the world into its preſent ſtate long before the time of Noah. It is probable alſo, that ſuch another ſhock may be at ſome time neceſſary, in order to render this earth ſufficiently fruitful in vegetables, which are either immediately or mediately the food of all animals. The parts about the ſurface being ſuppoſed to petrify and harden in time, and that ſuch a concuſſion will in fine be neceſſary in order to bury them, and to bring up a ſofter and more nouriſhing matter to cover the world, which muſt be the caſe in a ſhock and overflowing of this kind; as the ſhock would looſen and ſuſpend in the water all the upper part of the globe, and the heavieſt matter out of this ſubſiding firſt, muſt leave the lighteſt for the laſt ſettling, or that which will make the upper coat of the new formed world, which would then be fit for all vegetable productions. Philoſ. Tranſ. N° 383. p. 120.

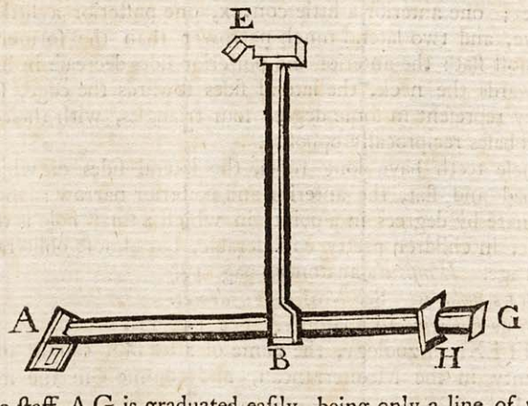
DELVIN, in natural hiſtory, a name ſometimes given by the miners in Cornwall to that ſort of talky ſtone or ſlate, which they more generally call killas; but in ſome places, as at Lowancowiggan, they uſe it as the name of a coarſe, but very hard ſtone in which the ore lies. The ore is tin, and is conſiderably rich there, but the hardneſs of this ſtone makes it difficult to be got out.

DEMARCHUS, Δημαρχος, (*Cycl.*) in antiquity, an appellation given to the chief magiſtrate of the city Neapolis. *Pitiſc.* Lex. ant. in voc.

DEMETRIA, Δημητρια, in antiquity, a feſtival in honour of Ceres, called by the Greeks *Demeter*, Δημητηρ. It was uſual on this occaſion for the worſhippers to laſh themſelves with whips made of the bark of trees, and called μυροπλοι. *Pott.* Archæol. Græc. l. 2. c. 20. T. 1. p. 379.

DEMETRIA was likewiſe the name of another feſtival celebrated by the Athenians in honour of Demetrius Poliorcetes, and was the ſame with that afterward called *Dionyſia*. *Pott.* loc. cit.

DEMI-CROSS, an inſtrument uſed by the Dutch to take the ſun's altitude, or that of a ſtar at ſea; but inſtead of which we uſe the croſs-ſtaff or fore-ſtaff. The *Demi-croſs* is of this figure:



The ſtaff A G is graduated eaſily, being only a line of whole tangents, whoſe radius is E B, the length of the croſs piece or tranſum. It hath three vanes; a horizontal vane, as A; a ſight vane, as H; and the ſhade vane, as E.

When the vanes are on the ſtaff and croſs piece, to take the ſun's altitude, hold the inſtrument with the tranſum as upright as you can, and looking through the ſight vane, as H, look for the horizon through the ſlit in the horizon vane, and then ſlide the croſs piece or tranſum to and fro, till you make the ſhade of the vane at E to fall at the ſame time upon the ſlit of the horizon vane, and alſo at A; then are the degrees cut on the ſtaff, by the edge of the croſs piece, the ſun's altitude required.

But to take the height of a ſtar; you muſt remove the horizon vane A, and put it on the end G, and tranſfer the ſight vane H to A; then holding up the inſtrument as before, looking through the ſight vane, ſee for the horizon through the horizon vane, and for the ſtar by the ſhade vane, ſliding the tranſum to and fro, till the horizon and ſtar are both ſeen by their reſpective vanes, and then the tranſum will cut the degrees of the ſtars Altitude on the ſtaff, allowing about 8 or 10 minutes for your height above the level of the water, as muſt be done in all ſuch caſes.

DEMIDITONE, in muſic, is uſed by ſome for a third minor.

DEMI-HAQUE. See HARQUEBUSS, *Cycl.*

DEMISE (*Cycl.*)—DEMISE *of the King* does not diſcontinue any writ or proceſs. Vid. Stat. 1 Ed. 6. cap. 7. §. 1, 2, 3.

Nor does it determine any commiſſion civil or military, or great office of ſtate, but they ſhall continue in force for ſix months after the ſovereign's *Demiſe*, unleſs made void by the next ſucceſſor. Stat. 7 & 8 Wil. 3. c. 27. ſect. 21. 1 Ann. Stat. 1. cap. 8. 6 Ann. c. 7. ſect. 8.

Neither is a parliament thereby determined till after ſix months. 7 & 8 Will. 3. c. 15.

Nor is a defendant, who hath pleaded to an information, obliged to plead to it again. But he may plead again upon requeſt made to the Court, within five months after the *Demiſe*. 4 & 5 Will. & Mar. c. 18. ſect. 7.

DEMOISELLE, the *Dancing Bird*, a long-leged and long-necked bird of the ſtork kind, a native of Numidia. It is remarkable for its jumping or dancing in its walk. See Tab. of Birds, N° 40.

DEMONIUS *Lapis*, in natural hiſtory, a name given to a ſtone famous among the writers of the middle ages for a number of imaginary virtues, ſuch as rendering people victorious over their enemies, and the like. All the deſcription they have left us of it is, that it was variegated with two colours laid in lines ſo as to repreſent a rainbow. It was probably an agate.

DEMULCENTS, *Demulcentia*, in pharmacy, are medicines which render the acrimonious humours mild. This they do by obtunding or ſheathing their ſharp particles. Vid. *Blancard.* Lex. Med. in voc.

DEN, a ſyllable added to the names of places, and ſhews their ſituation to be in a valley, or near woods, as *Tenterden*, *Biddenden*, &c.

The word is Saxon *Den*, i. e. *Vallis*, or *Locus ſylveſtris*.

DENDRACHATES, in natural hiſtory, the name by which the ancients called that ſpecies of agate we know by the name of the *Mocheoa ſtone*. See Tab. of Foſſils, Claſs 5.

This in its natural ſtate is only a whitiſh ſemi-pellucid ſtone, very beautifully vein'd with a fine milky white; but its great beauties are certain accidental delineations in black, which repreſent in a rude and irregular, but a very elegant manner, trees, moſſes, ſea-plants, and a number of other beautiful figures. Many have ſuppoſed theſe to be real moſſes, *&c.* lodg'd in the ſubſtance of the ſtone, but there is no foundation for this opinion; and nothing indeed can be more abſurd, ſince compleat and beautifully tufted oak trees are frequently delineated there of leſs than an inch in height. Theſe figures are in black, and the ſubſtance of the ſtone being white, they are ſeen to a very great advantage. Their true hiſtory is no more than this: the ſtone is ſubject, like our common flints, to imperceptible cracks and flaws, into which the ſteams and effluvia from minerals, and other foſſile bodies, continually pervading the whole ſtructure of the earth, find their way, and perhaps in ſome caſes water itſelf has been at ſome time in them: either water or theſe vapours, we well know, may be naturally enough tinged with black, or capable of leaving a black tinge on the ſurfaces of the bodies they have long remained on; and theſe finding their way into the natural cracks or ſmall crevices of the ſtone, have from the ſides of theſe inſinuated themſelves farther and farther into the maſs, and run into branched figures; or the water where-ever included has, as the maſs of the ſtone ſhrunk and contracted in the drying, ſpread and diffuſed itſelf into the various detach'd figures we ſee; for all the delineations we find in theſe ſtones may be referr'd either to theſe looſe detached figures or cloudy ſpots, or to thoſe which evidently ariſe from the ſides of ſome long cracks or fiſſures.

That water is continually to this day getting into theſe natural crevices of ſtone, and diffuſing itſelf beyond their natural limits in irregular, and often in beautifully branched figures, we ſee in many of our gravel-pits, where many of the larger flints and pebbles being ſtruck eaſily fall to pieces at theſe crevices, the ſides of which are always either wet, or plainly marked with waters having once been there; and if from theſe we trace the leſſer cracks, we ſhall uſually find numbers of figures imperfectly reſembling the delineations in the agates, and the very ſame often alſo on their ſurfaces, merely the effect of mineral effluvia.

On the ſurfaces of the natural creviſes of our ſeptariæ, or ludus Helmontii of the harder kinds, we often alſo meet with what authors call dendritæ, or fuliginous delineations of trees, which are of the very ſame kind with thoſe of this agate, and are ſo far from being inferior to them in beauty, that they even greatly excel them; nay, ſo low and poor a ſubſtance as common chalk is not without them, but is frequently found beautifully marked with branches, trees, ſtars, and a thouſand other figures like thoſe formed by pulling aſunder two levigating ſtones with the fine matter between them, or the ſhooting of ſalts in chemical veſſels, or the figures of hoar-froſt on our windows. *Hill's* Hiſt. Foſſ. p 473.

DENDRANATOMY, a term uſed by Malpighi and others to expreſs the diſſection of the ligneous parts of trees and ſhrubs, in order to the examining their ſtructure and uſes: Galen has uſed the ſame word, and taken ſome pains to diſcover ſome of the ſubjects of theſe reſearches. There is a very remarkable

analogy between the parts of ſome trees, and thoſe of peculiar parts of animal bodies; and Malpighi has, with great juſtice, uſed the comparative anatomy of trees, to explain, by the formation of the galls, and other preternatural tumors on them, the puſtules and other unnatural fleſhy excreſcences on animal bodies.

DENDROPHORI, Δενδροφοροι, in antiquity, perſons whoſe employment it was to cut down trees, and carry them to market. Thoſe were likewiſe called *Dendrophori*, who, in honour of ſome deity, as Bacchus, Sylvanus, &c. carried trees pulled up by the roots through the city. *Pitiſc.* Lex. Ant. in voc.

DENEB, or ALDENEB *Alchail*, in the writings of the Arabian Phyſicians, the name of the equiſetum or horſe-tail: there is, however, no great dependance to be had on what authors ſay of this plant; for the Greek and Roman writers having ſometimes called this plant *polygonum*, from its having many joints; and polygonum being alſo the name of the common knot-graſs; the virtues of theſe two plants, though conſiderably different, are blended together; and the plants themſelves confounded under the ſame name: nay, Pliny has gone ſo far as to take in the *Polygonatum*, or Solomon's ſeal, into the number of *Polygonums*, from the ſimilar ſound of the names; and ſuppoſing all that had been ſaid of polygonum was applicable to the *hippuris*, or horſe-tail; he has told us, that it grows in ſhady woods, and has large ſpreading roots, and a fruit of a round ſhape, and of the ſize of a coriander ſeed.

DENOMINATIVE, in logic. See DENOMINATION, *Cycl.*

DE NON *reſidentia clerici regis*, in law, the name of an antient writ, the form whereof ſee 2 inſt. fol. 624.

DENS *Canis*, *dogs tooth*, in botany, the name of a genus of plants; the characters of which are theſe; the flower is of the lilliaceous kind, and is compoſed of ſix petals, which are pendulous, and bend backward. The middle of the flower is occupied by a piſtill, which finally becomes a roundiſh fruit, or ſeed veſſel, divided into three cells, and containing a number of oblong ſeeds: to this, it is to be added, that the root is fleſhy, and of the ſhape of a dog's tooth. See Tab. 1. of botany, Claſs 9.

The ſpecies of *Dens Canis* enumerated by Mr. Tournefort are theſe. 1. The *dens canis*, with a broad, and ſomewhat roundiſh leaf, and a purpliſh red flower. 2. The broad and roundiſh leaved *dens canis*, with a white flower. 3. The broad, and roundiſh leaved *dens canis*, with a purpliſh white flower. 4. The broad and roundiſh leaved *dens canis*, with an amethyſtine flower. 5. The yellow flowered *dens canis*. 6. The long and narrow leaved *dens canis*, with a milk white flower. 7. The long and narrow leaved *dens canis*, with a purpliſh flower; and 8. The long and narrow leaved *dens canis*, with a reddiſh flower. *Tourn.* Inſt. p. 378.

The powder of the dried root of this plant is ſaid to kill worms in children. Drank in wine, it is an approved remedy for the cholic. It is ſaid to be reſtrictive and reſtorative, and taken in water, cures children of the epilepſy: it is alſo eſteemed a great provocative to venery. Vid. *James*, Dict. Med. in voc.

DENS *Leonis*, *Dandelion*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the ſemi-floſculous kind, and the petals it is compoſed of are placed on the embryo ſeeds, and ſurrounded by the cup. The embryos finally become ſeeds wing'd with down, which are affixed to the thalamus, but expand their downy ends into a globular head, and the ſtalks are uſually hollow and not branched. The ſpecies of *dandelion* enumerated by Mr. Tournefort are theſe: 1. The ſmooth mountain *dandelion*, with very long foliaceous ſtalks. 2. The common broad leaved *dandelion*. 3. The broader leaved *dandelion*. 4. The narrower leaved *dandelion*. 5. The *dandelion* with broad and roundiſh leaves. 6. The *dandelion* with bulbs like the aſphodell. 7. The fineſt leaved *dandelion*, called by ſome the ſtinking hawkweed. 8. The ſmall *dandelion* with rough leaves. 9. The ſmall *dandelion* with radicated leaves. 10. The tuberous rooted *dandelion*. 11. The hoary or hairy leaved *dandelion*. 12. The hoary rough leaved *dandelion*. 13. The rock *dandelion* with hairy and rough leaves. 14. The hairy *dandelion*, with very ſmall and rough leaves. 15. The narrow leaved mountain *dandelion*. 16. The hoary mountain *dandelion*, with ſmall flowers. 17. The ſmall mouſe ear leaved alpine *dandelion*. 18. The leaſt alpine ſmooth *dandelion*. 19. The ſmalleſt rough leav'd *dandelion*. 20. The ſmall Spaniſh *dandelion*. 21. The *dandelion* commonly called mouſe ear. 22. The mouſe ear *dandelion*, with leſs hairy leaves. *Tourn.* Inſt. p. 468.

The common ſpecies of this plant has much the ſame virtues with the common endive, but in a greater degree: the roots eaten in ſpring are eſteemed of great ſervice in obſtructions in the liver and ſpleen.

DENS *Caninus*. See DENTES *Canini*.

DENSHRING, in agriculture. See DEVENSHRING.

DENTALE, in natural hiſtory, the name of a genus of the tubuli marini: the characters of which are, that they are ſhelly tubes, reſembling the tusks of elephants, or the horn of ſome animal which is a little bent. Some authors have called theſe elephants teeth. See Tab. of Foſſils, Claſs 9.

There are two principal kinds of them, the one ſmooth, the other ſtriated. Of the ſmooth kind, ſome are all over white, others are tipped with red at the end: and of the ſtriated ones, ſome are altogether white, others are green, and in ſome the ſtriæ are more prominent, in others fainter, eſpecially in the leſſer ones. See Tab. of Shells, N° 4.

This fiſh is alſo called *dentalium* and *ſyringites*. Taken inwardly, it is uſed as an alkali to ſweeten acids, to ſtop a looſeneſs of the belly, and for ſpitting of blood. It is alſo uſed externally as a drier. Vid. *Lemery*, Dict. des drog. in voc. *Dentalium*.

DENTALE, is a name given by ſome to a fiſh caught in the Mediterranean, and common in the markets of Italy, known more commonly among naturaliſts by the name *Dentex*. *Bellonius*, de Piſc. *Willughby*, Hiſt. Piſc. p. 312. See DENTEX.

DENTARIA, *Toothwort*, in botany, the name of a genus of plants. The characters of which are theſe: the flower conſiſts of four leaves, and is of the cruciform kind; the piſtill ariſes from the cup, and finally becomes a pod, divided by an intermediate membrane into two cells, and containing roundiſh ſeeds. To theſe marks it is to be added, that the pods when ripe burſt open with violence, and throw out the ſeeds to a conſiderable diſtance, and that the roots are fleſhy, ſcaly, and toothed.

The ſpecies of *dentaria* enumerated by Mr. Tournefort are theſe: 1. The ſeven leaved *dentaria*. 2. The ſmooth five leaved *dentaria*. 3. The rough five leaved *dentaria*. 4. The ſeven leaved bulbiferous or bacciferous *dentaria*. 5. The three leaved *dentaria*. 6. The nine leaved *dentaria*. *Tourn.* inſt. p. 225.

The three firſt ſpecies of this plant are uſed internally, for exulcerated lungs, and the wind cholic; the others only externally. Vid. *Lemery*, Dict. des Drog. in voc.

DENTATED *Leaf*. See LEAF.

DENTES CANINI, *Dogs teeth*, are ſo termed, becauſe they are naturally a little pointed, and appear longer than the reſt, almoſt in the ſame manner as in dogs: they might alſo properly enough be called angular, becauſe they make an angle, by which the inciſors are ſeparated from the grinders; the two ſuperior have alſo been named eye-teeth from their ſituation. The bodies of the *Dentes Canini* are thicker, and more prominent than thoſe of the inciſores, they are convex, and a little rounded on the outſide, and end in a ſhort triangular point, one of the ſides of which is a continuation of the convexity of the outſide, and the other two are flatter and turned inwards. Theſe points are often worn out by maſtication: their roots are commonly larger, thicker, longer, and more pointed than thoſe of the inciſores, and ſometimes perforate the bottom of the maxillary ſinus. WINSLOW's anatomy, p. 43.

DENTES *inciſores*, the cutting teeth, have this name from their uſe; and are by ſome authors called *riſorii*, becauſe they appear in laughing: the four upper *inciſores* are larger and broader than the four lower; and of the upper, the two in the middle are larger than the other two: the bodies of theſe teeth reſemble large cutting wedges, and their roots are pointed. Their bodies are ſo diſpoſed that their ſharp ends lie all in a line, making one uniform edge; each body has properly four ſides; one anterior a little convex, one poſterior a little concave, and two lateral much narrower than the former, and almoſt flat: the anterior and poſterior ſides decreaſe in breadth towards the neck, the lateral ſides towards the edge, ſo that they repreſent in ſome degree four triangles, with their apices and baſes reciprocally oppoſite.

Theſe teeth have long roots, the lateral ſides of which are broad and flat, the anterior and poſterior narrow: they terminate by degrees in a point, in which a ſmall hole is obſervable, in children pretty conſiderable, but almoſt obliterated in old age. *Winſlow*'s anatomy, pag. 43.

DENTES *molares*. See MOLARES *dentes*.

DENTES *Piſcium*, in anatomy. See TEETH.

DENTEX, in zoology, the name of a ſea fiſh, caught in great plenty in the Mediterranean, and common in the markets of Italy.

It is a well taſted fiſh, and is caught of five, or ſix, and ſometimes ten pound weight: it is ſomewhat broad and flat in its ſhape, yet conſiderably thick and long. Its head is flatted, its ſnout very long, and its back ridg'd and ſharp; its back and ſides are of a dusky yellowiſh green colour, and ſometimes, in the full grown fiſh, purpliſh, always ſpotted with very bright blue and black ſpots; the back and gill-fins have each a black ſpot near their origin, and the belly fins are yellow.

The teeth are diſpoſed in a ſingle row in each jaw, and there are at diſtances four, which are longer and broader than the reſt, and look like the canine teeth of men, or of quadrupeds: it is from theſe that it has its name, and theſe as well as the reſt of the teeth are in this fiſh covered with lips, as in quadrupeds: its tail is forked, and its ſcales are very large. *Geſner* de Aquat, p. 1119.

DENTICULI *Elephantis*, in the hiſtory of ſhells, a name given by many authors to the *dentales*, a ſmall ſhell of the tubulus marinus kind, which is ſomewhat bent and pointed at one end, and in ſome meaſure repreſents the elephants tusk. See DENTALES.

DENTIFRICE, *Cycl.* The generality of operators for the teeth allow

allow acids, ſuch as ſpirit of vitriol, &c. to be the readieſt of all *dentifrices*, to take off the foulneſs and yellowneſs of the teeth; but though they allow theſe render them white, for the preſent, they diſcountenance a frequent uſe of them, as wearing away too much of the teeth, and injuring the gums.

Tachenius attacks ſpirit of vitriol even in a ſtronger manner, and affirms that it cannot anſwer the firſt purpoſe of making the teeth white: he alledges, that the mixture of ſpirit of vitriol, with any white alkali, produces a yellowiſh colour, not a white one. It is evident, that our ſweat, and all other matter, tranſpiring through the pores is of an alkaline nature, and there continually tranſpires through the gums ſomething of this kind, which lodging itſelf upon the teeth, muſt needs mix with the remains of the ſpirit of vitriol left on them in the cleaning; and, by that means, the whiteneſs at firſt given will gradually go off; and the yellow, which is the natural reſult of an alkali, with ſpirit of vitriol, will appear in its place. *Tachenii* Hippocrat. *Chym.*

DENTIL, in architecture. See DENTICLE, *Cycl.*

DENTILLARIA, in botany, a name, by which ſome authors call the *plumbago*, or leadwort. See PLUMBAGO.

DE ONERANDO *pro rata portionis*, in the law of England, a writ that lies where one is deſtrained for a rent that is to be paid proportionably by others: thus, if a man holds ten oxgangs of land, by fealty and ten ſhillings rent, of the king; and aliens, one oxgang to one, and another to another, in fee; and afterwards the ſheriff diſtrains only one of them for the rent; he that is ſo deſtrained may have this writ for his relief. *Fitz. Herb.* Nat. brev. f. 234.

DEOSCULATION, *Deoſculatio*, in antiquity, one of the moſt antient forms of adoration. See ADORATION, *Cycl.* and *Suppl.*

DEPARTERS *of gold and ſilver*. See the articles FINERS and DEPART, *Cycl.*

DEPERSONATUS. See DISPERSONATUS.

DEPESTA, in antiquity, a wine veſſel, which the Sabines, on any feſtival day ſet on the table of their gods. *Pitſc.* Lex. Ant. in voc.

DEPOPULATORES *agrorum*, in our ſtatutes, ſuch as depopulate or diſ-people lands.

It appears by the ſtatute 4 *Hen.* 4. c. 2. that theſe were great offenders by the antient law, and that the appeal or indictment againſt them ought not to be in a general, but in a ſpecial manner. They got their name of *depopulatores agrorum*, for that by proſtrating or decaying the houſes and habitations of the king's people, they depopulate towns. *Coke*, 3 Inſt. fol. 204.

DEPOSITION, *Depoſitio*, among the antients, a ceremony obſerved immediately upon a perſon's expiring, and was a ſolemn manner of laying the corpſe upon the ground. *Hoſm.* Lex. in voc. See BURIAL.

DEPRESSED *Leaf*. See LEAF.

DEPRESSOR (*Cycl.*) — DEPRESSOR *Alæ naſi*, in anatomy, a name given by Albinus, to a muſcle of the face, called by Cowper *conſtrictor alæ naſi*, and *depreſſor labii ſuperioris*.

DEPRESSOR *angular oris*, in anatomy, a name given by Albinus to the muſcle, called by others *depreſſor labiorum communis*; which ſee.

DEPRIMENS (*Cycl.*) DEPRIMENS *Biventer*, in anatomy, a name given by Spigelius, and others, to one of the muſcles of the lower jaw, called by others *digaſtricus ſive biventer*; and by Albinus *biventer maxillæ inferioris*.

DEPRIMENS *humerum rotundus*, in anatomy, a name given by Spigelius, and others, to a muſcle called by others the *teres major* and *rotundus major*.

DEPRIMENS *occuli*, in anatomy, a name given by Riolanus, and others, to one of the muſcles of the eye, called the *humilis*, and *rectus inferior* by others. It is the *depreſſor occuli* of Cowper, and of Albinus, being one of his four recti.

DEPRIMENS *quintus*, in anatomy, a name given by Spigelius, and ſome others, to the muſcle called the *ceratogloſſus*. See the article CERATOGLOSSUS.

DE QUIBUS *ſur diſſeiſin*, in law, a writ of entry. See *Fitz. Herb.* Nat. brev. fol. 191.

DER, a ſyllable frequently prefixed to the names of places in England. It is ſaid to ſignify that ſuch were formerly places where wild beaſts herded together, ſo called from the Saxon Deop, *fera*, unleſs the ſituation was near ſome river. *Blount.*

DARAIGN, or DEREYN, *diſrationare* vel *dirationare* in our old laws, is generally uſed for the act of proving: thus we find, *dirationabit jus ſuum hæres propinquior. Glanv.*. l. 2. c. 6. And, *dirationavit terram illam in curia mea.* Id. l. 2. c. 20. Bracton uſes it in the ſame ſenſe, *Habeo ſufficientem diſratiocinationem & probationem*, l. 4. tract. 6. c. 16. And ſo he makes uſe of *diſrationare*, l. 4. c. 22. And we find to *dereyn the warranty* in Old Nat. Br. fol. 146. To *deraign* that right, 3 Edw. 1. c. 4. and Weſtmin. t. 2. cap. 5. When the parſon of any church is diſturbed to demand tithes in the next pariſh, by a writ of *indicavit*, the patron ſhall have a writ to demand the advowſon of the tithes, being in demand; and when it is *deraigned*, then ſhall the plea paſs in the court chriſtian, as far forth as it is *deraigned* in the king's court.

DERAINMENT, or DEREINMENT. The ſubſtantive *dereinment* is ſometimes uſed in the ſame ſenſe with the French *deſrayer* or *deſranger*; that is, to diſplace or ſet out of order: thus we find, *deraignment* or departure out of religion, ann. 31. Hen. 8. c. 6. & 5 and 6 Edw. 6. c. 13. Thus alſo we meet with, *dereinment* or diſcharge of their profeſſion, 33 Hen. 8. cap. 29. which is ſaid of thoſe religious men, who forſook their orders or profeſſions. See Kitchin, fol. 152. The leſſee enters into religion, and afterwards is *deraigned*. And *Briton*, c. 21. uſes *ſemonenſe deſrenable*, for a ſummons that may be challenged as defective, or not lawfully made. *Skene* de verb. ſignific. verbo *diſrationare*, makes it ſignify what we call waging and making of law. See LEX *deraiſnia*.

DERBY *marble*. See MARBLE.

DERDER, in the materia medica of the ancients, a name uſed by Aviſenna and Serapio, to expreſs the common elm, whoſe bark they uſed on many occaſions.

DEREFELD, in our old writers, is uſed for a park, q. d. a field of deer.

DERELSIDE, in botany, a name by which ſome authors have called the tamarind tree. *Alpin.* Egypt. p. 328.

DE REVOCATIONE *parliamenti*, the name of a writ for recalling a parliament. Thus in 5 Edw. 3. the parliament being ſummoned, was recalled by ſuch a writ before it met. Vid. *Pryn's* Animad. on the 4 Inſt. f. 44.

DERVIS (*Cycl.*)—Of theſe there are in Egypt two or three kinds; thoſe that are in convents, are in a manner of a religious order, and live retired; though there are of theſe ſome who travel and return again to their convents. Some take this character, and yet live with their families, and exerciſe their trades: of this kind are the dancing *derviſes* at Damaſcus, who go once or twice a week to a little uninhabited convent, and perform their extraordinary exerciſes; theſe alſo ſeem to be a good people: but there is a third ſort of them who travel about the country, and beg, or rather oblige people to give, for whenever they ſound their horn ſomething muſt be given them. The people of theſe orders, in Egypt, wear an octagonal badge, of a greeniſh white alabaſter, at their girdles, and a high ſtiff cap without any thing round it. *Pocock's* Egypt, p. 178.

DESCENDENS *obliquus*, in anatomy, a name given by Fabricius, and others, to the muſcle, called by Albinus *obliquus externus abdominis*.

DESCENT (*Cycl.*)—The ſeparating mercury from its ore by *deſcent*, is performed in the following manner: take two earthen pots, with orifices of equal diameter; adapt an iron plate to the orifice of one of the two pots, in ſuch a manner that it may reſt upon the brink of it, but not jut out too much all round: let this have ſeveral holes bored here and there in it, but not near its bottom; pour into this pure water, to about two inches high, then ſhut it with the iron plate; put upon this plate a ſmaller veſſel, containing the ore of mercury; then cloſe theſe veſſels, with the ſecond pot inverted, ſtopping the joint well with lute; bury the inferior pot in aſhes, and put about the whole a moderate fire, continue it till the upper veſſel is ſlightly red hot, and the mercury will be driven into the lower, in fumes, which will be condenſed by the water into running quickſilver. *Cramer's* art of aſſaying, p. 352.

DESERTERS (*Cycl.*)—For the manner of puniſhing them among the antients, ſee TRANSFUGA.

DESIDERATUM, is uſed to ſignify the deſirable perfections in any art or ſcience: thus, it is a *deſideratum* with the blackſmith, to render iron fuſible, by a gentle heat, and yet preſerve it hard enough for ordinary uſes; with the glaſs-man, and looking-glaſs maker, to render glaſs malleable; with the clock-maker, to bring pendulums to be uſeful where there are irregular motions; with the braſier and copper-ſmith, to make malleable ſolder; with the ſhip-wright, to build veſſels that will ſail under water; with the diver, to procure manageable inſtruments for conveying freſh air to the bottom of the ſea, ſufficient for reſpiration, and the burning of lights; with the aſſay-maſter, to melt or copel ores, or metals, immediately without the uſe of bellows or furnace; and with the carvers and joiners, to faſhion wood in moulds like plaiſter of Paris, or burnt alabaſter, &c. And though, as Mr. Boyle obſerves, the obtaining of theſe *deſiderata* may be thought chimerical, yet it is proper they ſhould be propoſed; for although perfection may not be attainable, yet approaches to it may be made, and arts thereby improved. Vid. *Boyle's* Works abr. Vol. 1. p. 129, 136.

To this we may add, that the making iron malleable with pit-coal, was once perhaps looked upon as chimerical, yet it is now put in practice, to the great advantage of the owners of ſeveral mines in this kingdom.

It is a *deſideratum* in the tin works, to find a method of obtaining the ſilver out of the tin, as it is now got out of the lead, in places where the ores are ſo rich as to make it worth the while.

In the glaſs-works it is a *deſideratum* to ſolder up the cracks and flaws in the pots, while they are detained in the fire, and another to make glaſs without veins.

A taſteleſs and inodorous wine is a *deſideratum* among vintners, and a taſteleſs acid inodorous ſpirit among diſtillers.

The painters want a permanent green, and the callico printers a laſting blue.

In ſhort, all arts have their defects, and it is not at firſt to be gueſſed, for how many of theſe, remedies may be found, by means of chemical reſearches properly directed.

Chemiſtry itſelf is greatly defective in many particulars, as in an experimental hiſtory of general fermentation, ſeparatory and combinatory, in ſubjects of the animal, vegetable, and mineral kingdoms. A hiſtory of putrefaction, rancidneſs, muſtineſs, mouldineſs; and of the making of glues, mucilages, and the like preparations in the moſt perfect manner is alſo wanted.

The ſublimer metallurgy is in particular yet greatly defective. It wants a more eaſy method of extracting the mercuries of metals, than thoſe commonly deſcribed; a cheaper method of meliorations is wanted; and, in general, all the parts of this branch of the art ſeem equally defective.

The ſchemes for new trades will riſe occaſionally in the proſecuting many of the ſubjects; thus, it is natural for the common operations of brewing and ſugar-baking, to ſuggeſt that ſugar may be procured from malt and other vegetables. That nurſeries of peculiar ferments, both native and foreign, may be raiſed on the common principles; and, it is evident, that the introduction of ſuch new trades, would greatly improve the buſineſſes of brewing, ſugar-baking, and the like.

If a proper number of perſons duly qualified for making expements, and improving from them, would ſet about each his particular ſhare of the neceſſary experiments, and communicate the reſult of all their proceſſes to one another, the buſineſs of chemical experiment, would be much better directed in regard to future ſtudents, and many of the deſiderata in the art probably ſupplied. Vid. *Shaw*, Chem. p. 355.

DESION, in chronology, the Macedonian name of the Athenian month *Antheſterion*. See ANTHESTERION.

DE SON TORT *demeſn*, in our law, words of form, uſed in an action of treſpaſs by way of reply to the defendant's plea. Thus, if A. ſues B. in ſuch an action; B. anſwers for himſelf, that he did that which it calls a treſpaſs by the command of C. his maſter. A. replies that B. did it *de ſon tort demeſne, ſans ceo que C. luy command modo et forma*; that is, B. did it of his own wrong, without C.'s commanding him in ſuch manner and form. *Cowel.*

DESPOTIC. See DESPOTISM, *Cycl.*

DETENTS, in a clock, are thoſe ſtops which, by being lifted up or let fall down, lock and unlock the clock in ſtriking.

DETENT-*Wheel*, or HOOP-*Wheel*, in a clock, that wheel which has a hoop almoſt round it, wherein there is a vacancy, at which the clock locks.

DETERRATION, is uſed to ſignify a removal of the earth, ſand, *&c.* from the mountains and higher grounds, down into the valleys and lower parts. This is occaſioned by rains, which waſh the earthy matter down by degrees; but this cannot be very conſiderable, or much raiſe the ſurface of the earth, as ſome have imagined, becauſe a good part of it is ſunk into the clefts and caverns of the rocks and mountains, a great quantity is born down into rivers, and thence into the ſea, and the richer and finer part helps to compoſe the bodies of plants and vegetables. *Harris.*

DETERSOR, in antiquity, a ſervant whoſe buſineſs it was to attend at dinner, and wipe the table. *Pitiſc.*

DETERSORIUM, in antiquity, a name given to the common waſh, which was bean-meal, called *Lomentum*, or the meal of a ſort of pulſe called *Lupines:* this laſt they called *Smegma.*

The antients when they bathed uſed various waſhes for cleanſing the skin; but natrum, and its thin froth, called in Greek *Aphronitron*, were moſt common.

DETRAHENS *Quadratus*, in anatomy, a name given by ſome authors, particularly Spigelius, to a muſcle, called by the generality of anatomiſts the *Platyſma Myodes*; and by Albinus, *latiſſimus Colli.* Douglas calls it alſo *quadratus genæ.*

DEVENSHRING, or DENSHRING, a term uſed by the farmers to expreſs the burning land by way of manure: the method is to cut off the turf about four inches thick, and burn it in heaps, and then ſpread the aſhes upon the land; they probably call it *Devenſhring* from its having been earlieſt practiſed in Devonſhire. See the article BURNING.

DEVEST, *deveſtire*, in feudal writers, is uſed for the oppoſite to inveſting. *Inveſtire* ſignifies *poſſeſſionem Feudi tradere.* On the contrary, *Diveſtire* is *poſſeſſionem auferre.* Feud. lib. 1. c. 7. *Cowel.*

DEVINCTION, *Devinctio*, in antiquity, was uſed to ſignify a love-charm or incantation to gain the affection of a perſon beloved.

It was done by tying knots, and differed little from what was called *Obligatio* or *Catadeſmus.* Virgil in his 8th Eclogue deſcribes it thus:

Nectе tribus nodis ternos Amarylli colores,
Nectе Amarylli modo, & veneris, die, vincula nectо.

Pitiſc. Lex. Ant. in voc.

DEVOIRS *of Calais*, in our old ſtatutes, cuſtoms due to the king for merchandize brought to or carried out of Calais, when our ſtaple was there. 34 Edw. 3. c. 18. & 2 Rich. 2. ſtat. 1. c. 3.

Devoir is French, ſignifying duty.

DEVOTION (*Cycl.*)—Cornelius Nepos uſes the word *Devotion* for a kind of puniſhment conſiſting of direful curſes and marks of infamy. See the article EXECRATION.

DEUS *Myagrus.* See MYAGRUS.

DEUTEROPOTMI, δευτερόποτμοι, among the Athenians, a deſignation given to ſuch who had been thought dead, and, after the celebration of the funeral rites, unexpectedly recover'd. It was unlawful for the *Deuteropotmi* to enter into the temple of the *Eumenides*, or to be admitted to the holy rites, till after they were purified by being let through the lap of a woman's gown, that they might ſeem to be new born. *Pott.* Archæol. Græc. l. 2. c. 4. T. 1. p. 223.

DEUTEROSIS, the Greek name by which the Jews called their *Miſchnah*, or ſecond law. *Deuteroſis* in Greek has the ſame ſignification almoſt as *Miſchnah* in Hebrew; both ſignify an iteration. Euſebius accuſes the Jews with corrupting the true ſenſe of ſcripture with the trifling explanations of their *Deuteroſes.* Epiphanius ſays, that there were four ſorts of theſe quoted, the firſt under the name of Moſes, the ſecond under that of Akiba, the third under that of Adda or Judah, and the fourth under the name of the ſons of the Aſmonæans or Maccabees: It is not eaſy to determine whether the preſent Miſchnah is the ſame with any of theſe, whether it contains them all, or only ſome part, or whether it be different from them all, Jerom ſays, that the Hebrews referred their *Deuteroſes* to Shammai and Hillel. If it were well proved that they were of this antiquity, it would be conſiderable; ſince Joſephus ſpeaks of Sammeas, who is the ſame with Shammai in the beginning of Herod's Reign. Jerom ſpeaks always of the *Deuteroſes* with the utmoſt contempt: he looked upon them as a collection of fables, childiſh ſtuff, and obſcenities. He ſays, the principal authors of theſe fine deciſions, according to the Jews, are Bar-Akiba, Simeon, and Helles. Bar-Akiba is probably the grandfather or father of the famous Akiba. Simeon and Shammai are the ſame perſons, ſo are Helles and Hillel. *Calmet*, Dict. Bibl. in voc.

DEVUIDER, in the manege, is applied to a horſe, that upon working upon *Volts* makes his ſhoulders go too faſt for the croupe to follow; ſo that inſtead of going upon two treads, as he ought, he endeavours to go only upon one. This comes from the reſiſtance he makes in defending againſt the heels; or from the fault of the horſeman, who is too haſty with his hand. *Guil.* Gent. Dict. in voc. See HASTE.

DEW (*Cycl.*)—Thro' the whole courſe of the operations of nature, when there appear two methods by which any thing that we ſee can be effected, we have many reaſons to believe that it is done by that method which is the moſt different from common appearances. As we know there muſt be a revolution, for inſtance, either of the earth round the ſun, or of the ſun round the earth; tho' common appearances ſeem to inform us, that it is the earth which ſtands ſtill, and the ſun which moves round; yet when we come to enquire more deeply into nature, we very plainly find that it is in reality the earth which makes the revolution, while the ſun remains fixed in its place. A thouſand other parallel inſtances might readily be produced; and according to this method of judging, we are to teach ourſelves to judge of the *Dew*, which then becomes one of the number.

The *Dew* which we ſee continually appearing to fall at its ſtated periods, may thus either fall originally from that middle region of the air, whence it ſeems to us to deſcend; or elſe it may be firſt raiſed from the bowels of the earth in form of a vapour, and ſent up into that region, whence it again falls, if it do fall to us, in form of *Dew.* The moſt natural opinion ſeems that of its falling *ab origine* out of the air; and thus the generality of the world look upon it, eſteeming it a gift of heaven for the enriching and fertilizing the earth. But the truth is on the other ſide of the queſtion; and it is indiſputable, that all that we properly call *Dew*, all thoſe drops of water which, tho' imperceptible, as ſuch while ſeparate, eaſily amaſs themſelves into larger drops, and are in that ſtate found on graſs, and on the herbs of the field and garden in the morning, and remain there for a certain time, all this has unqueſtionably been firſt raiſed in vapour out of the earth to which it now again deſcends.

This is no new opinion, tho' not a general one; the old naturaliſts have many of them affirmed it, and there are ſo many familiar proofs of it, that one would think ſcarce any obſerver could be ignorant of it. Every gardener knows that the glaſs bell, which he places over a tender fruit, will be hung over with drops of *Dew* after a certain time, tho' it have no communication with the external air, nor can have received them any other way than in the vapours raiſed from the earth. There have not however been wanting men of great genius and knowledge who have contradicted this opinion, and endeavour'd to account for all that appears in favour of it from other principles. Experiments however are the great guides to truth; and M. Dufay, of the royal academy at Paris, being reſolved to try firſt of all the grand queſtion, whether the matter of *Dew* did firſt aſcend in vapour, or did not, he brought the firſt proof to this ſimple proceſs: if the *Dew* did aſcend, it muſt

muſt wet a body placed lower ſooner than one placed higher, and muſt wet its under ſide ſooner than its upper, and of a number of bodies placed in this manner, the lower muſt be thus gradually wetted all the way before the upper. It appeared certain to him, that the *Dew* aroſe in vapour from the earth after it had been heated by the ſun, and that not leſs of it aroſe in the middle of the day than afterwards, but that then it was diſperſed and evaporated as ſoon as raiſed. On this foundation he determined to make his trials, and for this purpoſe he plac'd two ladders againſt one another, meeting at their tops, ſpreading wide aſunder at their bottoms, and ſo tall as to reach thirty-two foot high. To the ſeveral ſteps of theſe he faſtened large ſquares of glaſs like the panes of a window, and ſet them in ſuch a manner, that they ſhould not ſhade or overhang one another. It was plain that, on the whole, if the *Dew* deſcended without firſt ariſing, the top ſquares muſt be firſt wetted, and that on their upper ſurfaces; but, on the contrary, if the *Dew* firſt aſcended from the earth, the bottom ſurfaces of the lower panes muſt firſt receive it. On the trial it appeared exactly as expected in the latter manner. The lower ſurface of the loweſt piece of glaſs was firſt wetted, then its upper ſurface; then the lower ſurface of the pane next above it, and ſo on gradually till the whole were wetted to the top of the ladders.

It was happy that this Experiment ſucceeded in ſuch perfect regularity; but this is not always to be expected, for a thouſand accidents may prevent it, and the lighteſt wind deſtroy it: thus, ſuppoſing the *Dew* to have aſcended in this exact order up to a certain height, it may there meet with a guſt of wind, which ſhall diſſipate it in ſuch a manner, that it ſhall no more affect the higher planes, till that wind ceaſing, gives it leave, which perhaps may not be till it has riſen to the height of the whole ladder; and then at an inſtant all the upper planes ſhall after this interruption be wetted at once.

This gentleman afterwards tried the ſame experiment with pieces of cloth tied to the ſteps of the ladder inſtead of glaſſes, as he could be able, by weighing theſe, to know of certainty, how, and in what order they received the dew; in this trial ſome accident prevented the ſame perfect regularity from appearing in the aſcent of the *Dew*, but the quantity of moiſture imbibed by the higher pieces, was ſo much leſs than that imbibed by the lower, as abundantly to prove that the moiſture they received was from below not from above. Mr. Muſchenbroek, who is no friend to this opinion, thought he had invalidated all theſe proofs, by trying the ſame experiments, and finding the ſame ſucceſs on a plane covered with ſheet lead, as had before appeared in the garden of the firſt experiments, where the ladders were placed on the ground. Mr. Muſchenbrock, who eaſily ſaw that the vapour could not aſcend, at leaſt not in ſuch quantity through lead, thought he had proved, that however it appeared on the cloaths, it muſt have deſcended from above; but Mr. du Fay very properly overthrew all theſe arguments, by obſerving, that the vapour need not riſe through the lead, nor from that very ſpot, but that as it aroſe from the adjoining open ground, the continual fluctuation of the air, could not but ſpread it abroad, and carry it in its aſcent thither.

The order and manner of the aſcent of *Dew* is thus aſcertained, and its deſcent again cannot appear at all wonderful when we conſider, that at ſuch times, as the heat of the ſun is not ſo great as to diſſipate it, as it riſes, it will, by its natural attraction form itſelf, into drops ſo large, and of ſuch gravity, that the air cannot ſuſtain them. From the ſame ſource and origin, we muſt alſo ſometimes have thick fogs, and theſe, properly ſpeaking, are only *Dew*, in a certain ſtate. Mr. du Fay has proved alſo, that the vapour which is to fall in *Dew*, continues to mount in a direct courſe upwards the whole night. For having hung up a piece of woolen cloth, after he had carefully weighed it, he examined it, at times, through a whole night; and weighing it every time, he found it ſenſibly increaſed in weight; that is, its quantity of moiſture ſenſibly increaſed every time. Theſe are the moſt obvious qualities in regard to the *Dew*, but there are others more nice and curious, which owe their firſt notice to Mr. Muſchenbroek, and have been afterwards verified by Mr. du Fay.

Several different ſubſtances expoſed to the ſame *Dew*, receive and charge themſelves with it in a very different manner, ſome more, others leſs, and ſome even not at all. The drops ſeem to make a ſort of choice of what bodies they ſhall affix themſelves to; glaſs and cryſtals are thoſe which they affix themſelves to, in the moſt ready manner, and in the largeſt quantity; and metals, of all kinds, do not receive them at all, nor do the drops ever affix on them. The two extremes are thus fixed; the intermediate bodies are to be judged of by repeated experiment. The extremes are indeed ſo well aſcertained, that they are eaſily proved; for, if a cryſtal, or glaſs veſſel be ſet out in an evening on a ſilver plate, the glaſs will be found covered all over with *Dew* drops, and the ſilver perfectly dry. China ware is a ſort of glaſs; ſix pounds of mercury being expoſed to the air in a china plate, the *Dew* was found running in ſtreams on the edges of the plate, while not the leaſt trace of a ſingle drop appeared upon the mercury.

The plain way of accounting for this would ſeem, not that *Dew* falls upon ſome bodies without touching others, but that it readily evaporates from the ſurfaces of ſome, while it remains and collects itſelf into drops upon others: and it is hence that we find ſome wet and others dry, which have had the ſame expoſure; but this, though the moſt obvious, and ſeemingly apparent reaſon, is not the true one. Mr. du Fay has obſerved, that if this were the caſe, in thoſe bodies, which we find dry after expoſure, the evaporation muſt be more ſudden than there are powers in nature, to effect; or, in other words, than it is poſſible for it to be; and the truth, in regard to the obſervation, is not this; but that, in reality, the particles of this aſcending *Dew* really do not affix themſelves at all to ſome bodies, while they very readily do it to others; as we ſee in water itſelf, that in a common river, a rough dog, ſhall be miſerably wetted all over, while the feathers of a ſwan ſhall not receive a ſingle drop of moiſture.

There is alſo another ſingle obſervation, which ſhould ſeem to prove that this vapour only aſcends, and does not at all deſcend in form of *Dew* again; but that what we ſee collected into drops on graſs, and plants, collects itſelf in that manner in the beginning of its aſcent. For if a cup of any metal be expoſed a whole night, it will never be found to contain any *Dew*, which if that liquid deſcended muſt have been the caſe; ſince, though it did not naturally ſtick to that metal, it muſt fall into it, and remain there; but this does not happen. What can be collected from the whole, ſeems, that *Dew* is a vapour, which ariſing into the air, and increaſing in quantity, through the courſe of a whole night, expands itſelf every way in it, and moiſtens or wets ſome ſubſtances, and does not moiſten others, and this merely according to the differences of their ſurfaces.

Theſe however are but probable ſyſtems, not abſolutely known facts: ideas of the manner of the actions and operations of bodies, readily flow into the mind, when we have formed a ratio, be it whatever, in our own thoughts for them. Mr. du Fay has many nice opinions in regard to this vapour or liquid, which it were much to be wiſhed were carefully examined by experiments. He ſuppoſes ſome diſtant alliance between the phænomena he has obſerved in *Dew*, and thoſe which appear in electrical bodies, and in thoſe bodies which afford phoſphori. He has obſerved, that all bodies, which are capable of a ſufficient degree of rubbing, become electrical, excepting only the metals; and that all bodies, except only the metals, may alſo be made phoſphori. The metals are the only bodies alſo which wholly refuſe to admit the *Dew*; here are certain properties all appearing in metals, and in metals only; and it ſeems hence there may be ſome affinity in thoſe things, which do, or do not affect the metals only. It is certain, that there are connections in natural bodies, which are too nice for haſty elucidation, yet are not unworthy all the care that can diſcover them. Mem. acad. Scien. 1736.

It is very certain that ſubſtances of a very different kind from the uſual and natural matter of the *Dew*, have ſometimes fallen in that form. Our Philoſophical Tranſactions give an account, that in the year 1695, there fell in Ireland, in ſeveral parts of the provinces of Leinſter and Munſter, for a conſiderable part of the winter and ſpring, a fatty ſubſtance, reſembling butter inſtead of the common *Dew*; it was of a clammy texture and dark yellow colour; and was, from its great reſemblance, generally called *Dew-butter* by the country people. It always fell in the night, and chiefly in the mooriſh low grounds, and was found hanging on the tops of the graſs, and on the thatch of the houſes of the poor people. It was ſeldom obſerved to fall twice in the ſame place, and uſually wherever it fell it lay a fortnight upon the ground before it changed colour, but after that it gradually dried up, and became black. The cattle fed in the fields where it lay, as well as in others, and received no hurt from it: it fell in pieces of the bigneſs of ones finger end, but they were diſperſed ſcatteringly about, and it had an offenſive ſmell, like that of a churchyard. There were in the ſame places very ſtinking fogs during the winter, and ſome people ſuppoſed this no other than a ſediment or connection of the heavier matter of thoſe fogs. It would not keep very long, but it never bred worms. The country people willing to have ſome good of it, tried it on their childrens fore-heads, and it always cured them. Philoſ. Tranſ. n° 220. p. 222.

Cryſtalline DEWS, a term uſed by ſome modern writers, to expreſs certain *Dews*, or ſteams; which, in their fall upon the earth, become, as they ſay, cryſtal. This greatly favours the opinion of the antients, that all cryſtal was only water frozen into a kind of ice harder than ordinary, but it is erroneous. Mr. Beaumont gives an account in the Philoſophical Tranſactions of theſe cryſtal *Dews* on Mendip hills; in which he tells us, that the miners of that place find ſometimes in the roads where the earth is bare, triangular cryſtals, about two inches in length, and an inch over, not with ſharp angles, but roundiſh and blunted ones, and carried up round at the ends like a cocoa nut; and that none of theſe are ever found under ground in digging, but only lying on the ſurface. He tells us alſo, that he had ſeen ſome taken up in Glouceſter-

ſhire, and confirms the opinion of theſe *cryſtalline Dews*, producing real cryſtals, by the account given of ſome places in Italy, where cryſtals are, as it is ſaid, frequently produced in clear evenings by a coagulation of the *Dews* falling on nitrous ſteams. Whatever the cryſtals are, which authors ſeem to ſuppoſe to have been generated in this manner, it is very certain, that they have in reality another origin; and theſe are only the accounts of ignorant and inconſiderate people, to give credit to the ſtrange and unnatural method here given for their formation. Philoſ. Tranſ. n° 129.

May-DEW. See Ros-*mayalis*.

Orange-DEW. See ORANGE.

Sun-DEW. See Ros-*ſolis*.

Earth of DEW. See the article EARTH.

DEX, a name uſed by many Greek writers, for a worm or maggot, hatched of the egg of a beetle, and remarkable for its eroding wood. It is alſo called thrips and enxylon. The old Greeks uſed the pieces of wood eroded by it in various directions as ſeals. See the article THRIPS.

DIABATHRA, in antiquity, a kind of ſhoe worn by the Grecian women. *Pitiſc.* Lex. Ant. in voc.

DIABE, in zoology, the name of a prickly ſea fiſh of the orbis or globe fiſh kind, and in all things reſembling the hiſtrix or porcupine fiſh, except that its ſpines or prickles are all fixed into its skin by three inſertions. *Marcgrave*'s Hiſt. Braſ. l. 4. c. 14.

DIABETES (*Cycl.*)—In this diſeaſe the urine is thin and pellucid, and has no ſediment, and is of a ſweetiſh taſte; the quantity voided is always very great; and if the patients endeavour to retain it, they are afflicted with ſwellings about the loins, and a ſenſation of weight and preſſure in the hypochondria.

Perſons ſubject to the Diabetes. — It is a very rare diſeaſe, and ſeems to have been ſo in other ages as well as the late ones. Galen expreſsly ſays, that he never met with more than two perſons who had it; the people affected with it are uſually ſuch as have diſorders of the viſcera in general; and it is often but a ſymptomatick affection, ariſing from an improper treatment of perſons in fevers.

Prognoſticks in it. It is always a very terrible diſeaſe, but the longer ſtanding it is of, the more difficult it is to be cured; it is not, however, ſuddenly of fatal conſequence, but the people uſually live ſome time with it, though they in the end generally die tabid, after having been afflicted with it a length of time.

Method of cure. The infarctions of the viſcera, which are the occaſion of this, are firſt to be regarded, and are to be attacked with ſuch aperients as are not ſtrongly diuretick; of this kind are decoctions of the roots of dandelion, ſuccory, polypody, and the like; and of the capillary herbs. Pills alſo are to be taken, made of ammoniacum, and the other reſolvent gumms, with the bitter extracts; and interchangeably with theſe the digeſtive neutral ſalts, ſuch as tartarum vitriolatum, and the like: during this courſe, the febrile heat, which always attends this diſtemper, is to be taken off by the vegetable acids, ſuch as ſorrel and purſelain, and tincture of roſes made in the uſual way. Some recommend the teſtaceous powders in general; and others are peculiarly laviſh in the praiſes of crawfiſh reduced to powder whole, after baking them in an oven. The great diſcharge of urine is to be leſſened, in the mean time, by gentle laxatives now and then given, ſuch as infuſions of ſenna, rhubarb, and the like; and finally, if the diſeaſe goes off, or but remits conſiderably of its violence, the chalybeates, and other reſtoratives, are to be given, to reſtore the parts to their due ſtate.

It is a common error to give aſtringents in a *Diabetes*; for, if they take effect, they too violently conſtringe the viſcera, and bring on pains and ſwellings in the loins, and not rarely an aſcites and death itſelf in the end.

Perſons ſubject to this diſeaſe ſhould be extreamly careful of themſelves in their regimen; they ſhould avoid all hot things, and beware of themſelves that they do not fall into violent paſſions; they ſhould feed principally on emulſive and gelatinous diets, to make up for the waſte of fleſh that always attends this diſeaſe. *Junker*'s Conſp. Med. p. 540.

Dr. Morgan thinks the tincture of cantharides may almoſt be abſolutely depended on for ſtopping the immediate flow of urine in the *Diabetes*. The way he prepares his tincture is, by infuſing half an ounce of cantharides upon a pound of the elixir vitrioli; of which tincture, from fifteen to thirty or forty drops, may be given twice or thrice a day in Briſtol hot well water. Mecan. pract. of Phyſ. p. 114.

Dr. Jurin found the chalybeate waters acidulated with the oil of ſulphur, very ſucceſsful in this diſtemper. Med. Eſſ. Edinb. Abr. Vol. 2. p. 469.

Allum poſſet-drink is alſo ſaid to be an effectual cure for a *Diabetes*. Ibid.

DIABOLUS *Marinus*, *the ſea devil*, in zoology, the name of an ugly and ſtrangely ill-ſhaped fiſh, of the ray kind. Its noſe or ſnout is bifid, and runs out into two horns, and its ſides are both terminated by thin fins: its skin toward the head is variegated with dusky ſpots. It grows to a very conſiderable ſize, being ſometimes caught of ſix or ſeven feet long. *Ray*'s Ichthiogr. append. p. 5. See Tab. of Fiſhes, N° 65.

DIACAUSTIC. See *Cauſtic by* REFRACTION.

DIACELTATESSON, in chemiſtry, a name given by Van Helmont, to a purging preparation, procured from the fixed flowers of antimony, in the following manner: take eighteen grains of the fixed diaphoretick flowers of antimony, ſixteen grains of roſin of ſcammony, and ſeven grains of cream of tartar, make all together into a powder. Or take nine grains of the fixed antimony, nine grains of roſin of ſcammony, and three grains of cream of tartar, make them into a fine powder. The former is the largeſt doſe for a grown perſon, and the latter the leaſt; they are to be taken without any acid; and if they operate too violently, the violence may be ſtopped by taking any thing acid: it is to be given in intermittents, ſo as to finiſh its operation immediately before the coming on of the fit: it is ſaid by the author always to cure quartans before the fourth doſe, and all intermittent and continued fevers.

Boerhaave obſerves, that he had often given it with good effects, but never with that great ſucceſs which the author aſcribes to it; who ſays, that it radically cures the gout and fevers, heals ulcers of the larynx, œſophagus and bladder, and purges the body when in perfect health, but not otherwiſe. This candid writer obſerves, that Helmont ſeems always to have carried the virtues of his medicines by a ſubtilty of reaſoning, beyond what will be found warrantable of them from experience. Boerh. chem. part 2. p. 338.

DIACENTROS, is uſed by Kepler, to ſignify the ſhorteſt diameter of the elliptical orbit of any planet.

DIACHALASIS, in the medicinal works of the antients, a term uſed to expreſs a ſolution of continuity in the bones of the cranium at the ſutures; that is, when the bones recede from their mutual indentations, an accident that frequently happens from large wounds of the head.

DIACHRISTA, a name given by the antient writers in medicine to certain compoſitions, whoſe uſe was to be applied to the fauces, uvula, palate, and tongue, for the abſterſion of phlegm.

DIACODUS, in natural hiſtory, a name given by ſome to the diadochos, a kind of beryll or ſapphire, of which many fabulous things are aſſerted.

DIACOPE, Διακοπη, in Grammar, the ſame with what is otherwiſe called *Tmeſis*. See TMESIS, *Cycl.*

DIADELPHIA, in botany, a claſs of plants with hermaphrodite flowers, whoſe ſtamina, by the conjunction of their filaments, are formed into two bodies.

The word is formed of the Greek δις twice, and αδελφα communities. Among the plants of this claſs are the fumitory, milk-wort, broom, &c.

The characters of the Diadelphia are theſe: the perianthium conſiſts of one leaf, and is of a bell-like ſhape, and gibbous at the baſe: this always falls with the flower. It ſtands on a pedicle, is obtuſe at the top, and carries a drop of honey-like juice at the baſe. Its mouth or rim is divided into five ſegments, which are ſometimes erect, ſometimes oblique, and always irregular, and acute. The bottom ſegment, which has no fellow, is longer than all the reſt; and the top pair are ſhorteſt of all, and ſtand fartheſt aſunder. The receptacle of the fructification is incloſed in the bottom, where it is wetted with the drop of honey. The flower is of an irregular ſhape, and is of that kind called by authors papilionaceous, from its ſomewhat reſembling the wings of a butterfly. The ſeveral parts of theſe flowers have their ſeparate names; a right underſtanding of which is neceſſary, in order to the comprehending the meaning of the deſcriptions authors give of them. Theſe names are vexillum, alæ, and carina. See Tab. 1. of Botany, Claſs 1. *Linnæi* Gen. Plant. p. 335.

The vexillum is a large incumbent petal, which covers the others, and ſtands in a plane horizontal direction, and has its upper unguis inſerted into the margin of the receptacle or cup; in that part of it which is out of the cup it approaches to a roundiſh figure, and is uſually undivided, or very lightly ſo, and has eſpecially near the apex, a line or ſtreak in the center, which ſtands up above the level of the reſt of the petal, and the petal looks as if depreſſed downwards: that part of this petal which is neareſt the baſe, approaches to a ſemi-cylindric figure, and is then affixed within the cup. The diſk of this petal is depreſſed on each ſide, but the two ſides are turned a little upwards near the edges.

In that part where the tubular part of this petal ends, to give place to its expanſion into the body; there are two concave impreſſions toward the back, which appear ſomewhat prominent at their lower extremity, and ſerve to compreſs the alæ that ſtand under them.

The alæ, in theſe flowers, are two equal petals, a regular pair, and placed under the vexillum, one on each ſide of the flower: theſe are incumbent at the edges, and placed perpendicularly at the ſides, and are of a roundiſh, but ſomewhat oblong figure, broader in the outer part than in the inner; their upper rim is ſtrait and thin, their lower ſomewhat inclined toward a circular figure: the baſe of each is bifid, and the lower ſegment is carried on into an unguis much longer than the other, and is inſerted into the ſide of the receptacle.

It

It is in the whole of much the ſame length with the cup, and is ſhorter, and bent above.

The carina is the lower petal, and is often divided into two ſegments: this is placed under the vexillum, and between the alæ; it is of the ſhape of a boat, being hollow and compreſſed at the ſides: it repreſents, in its poſture, as well as ſhape, a boat on the water, but it is mutilated at the baſe, and is extended in its lower part into an unguis, which is of the length of the cup, and is inſerted into the receptacle. The lateral and upper part being jagged, is received among the like part of the alæ: the ſides of the carina are of a ſhape, reſembling the wings; and their ſituation, in the flower, is much the ſame, but they ſtand ſomewhat more inward and lower. The carina or line of this petal is carried ſtrait along half the petal; after this it ariſes into a ſegment of a circle, but the marginal line runs ſtrait quite to the apex, where it forms an obtuſe angle, with the extremity of the carina, or line. The ſtamina, in theſe flowers, which are called Diadelphia, are two filaments of different ſhape, one of them ſtands below the piſtil, and in a manner involves it; and the other ſtands above, and is depreſſed upon it. The lower filament, which involves the germa of the piſtil, is, in its lower half, membranaceous, of a cylindric figure, and ſplit open. In its upper part, where it divides itſelf into nine parts of a ſubulated figure, which in their length and flexure reſemble the ſhape of the carina; the intermediate or lower ſegiments among theſe are longer alternately in pairs. The upper filament is of a ſubulated and ſetoſe make, it covers the ſlit in the middle of the lower filament before deſcribed; it lies upon this, and is placed in the ſame direction, and is ſhorter; it ſeparates itſelf from the other at the baſe, and gives paſſage to a honey-like liquor.

The antheræ of the whole flower are ten in number; there are nine of them placed on the ſegments of the lower filament, and one on the ſummit of the upper one which has no diviſion; they are ſmall, but are all of equal ſize in the ſame flower.

The piſtil, in theſe flowers, is ſingle, and grows from the receptacle within the cup. Its germen is of an oblong figure, ſomewhat cylindric, but compreſſed in a ſlight manner; it is ſtrait, and is of the length of the cylindric part of the lower filament, by which it is involved and incloſed.

The ſtile is of a ſubulated capillary form and aſcendant, its length and ſituation in the flower are the ſame with thoſe of the radii or ſegments of the upper part of the lower filament, among which it is placed; this ſtile is not permanent, but withers with the ſtamina.

The ſtigma is hoary, it is of the length of the ſtile, it turns upward, and is placed immediately under the ſtamina and antheræ.

The fruit, in all the plants of this claſs, is an oblong cylindric and ſomewhat flatted pod; this is obtuſe, bivalve, and marked with two ſutures, the one above and the other below, each running the whole length of the pod, and the upper one deſcending a little at the baſe, otherwiſe they are all the way ſtrait; the pod always naturally opens at the upper ſuture.

The ſeeds are contained ſeveral in every pod, and are of a roundiſh figure, ſmooth, fleſhy, and pendulous, and have a mark of an embryo, prominent near that part where they are inſerted to the ſides of the pod. The proper receptacles of the ſeeds are very ſmall, ſhort, and attenuated at the baſe, obtuſe in the disk, of an oblong figure, and are inſerted longitudinally into the upper ſuture of the pod; and this, in ſuch an order, that when a pod is carefully opened, onehalf of the ſeeds are always found in one of the valves, and the other half on the other.

This is a perfect natural claſs of plants, and is the moſt remarkable of all others in the ſtructure of the flower. The common ſituation of the flower is in an obliquely pendulous direction, it inclines toward an acute angle from a perpendicular line. The former ſyſtematiſts, in botany, as Linnæus obſerves, took great notice of the pod in this claſs of plants, and thought it the principal ſubject of diſtinction; but he very judiciouſly makes it but of very little conſequence, and will not allow it ſufficient to diſtinguiſh the genera one from another: but the cup, which had always before his time been diſregarded, he eſteems a very eſſential part of the plant, and ſufficiently certain to erect the different genera upon in many caſes. Some of the old writers had been uſed to take the leaves into their marks, by which to diſtinguiſh genera of this claſs; but Linnæus wholly excludes this part of a plant from this office. Magnol has obſerved, that the carinæ of the diadelphia or papilionaceous flowers is dipetalous, and is compoſed of two diſtinct oblong petals; the lower edges of which join ſo nicely and cloſely together, that they ſeem only one; and are not joined in their ſubſtance, but only in their ſituation. Linnæus has ſtrictly examined this, and finds that the author is ſo far right, that this is really the caſe in many of the papilionaceous flowers, but not in all: ſome not only appearing to have, but really and certainly having a carina compoſed of only one petal.

The conſideration of the ſtigma, is of more conſequence in this than in moſt other flowers, and even more than that of any other part of the fructification in this. The ſeeds of all the plants of this claſs are eatable, excepting in a very few particulars; their leaves alſo are a grateful food to cattle. *Linn.* Gen. Plant. p. 337.

DIADOCHUS, in natural hiſtory, the name given by the antients to a gemm, approaching to the nature of the beryl or aqua marine, probably a pale ſapphire; for they had no peculiar generical name for that gemm, but call'd the beautiful deep coloured ones only sky blue beryls, berylli acroides. The writers of the middle ages have given ſtrange accounts of the magical virtues of this ſtone, ſuch as its calling up ſpirits, and many other the like things, on being thrown into water: they ſaid, however, that if it happened by any accident to touch a dead body it loſt all its virtue.

DIADROME, is ſometimes uſed for the vibration, motion, or ſwing of a pendulum.

DIÆRESIS, Διαιρεσις, a figure in Grammar, otherwiſe called *Tmeſis*. See TMESIS, *Cycl.*

DIÆTETÆ, Διαιτηται, among the Athenians, were of two ſorts, the cleroti and diallacterii. The former were a kind of public arbitrators, choſen by lot, to determine all cauſes exceeding ten drachms within their own tribe. Their office was annual, at the expiration of which they were obliged to give up their accounts; and if it was proved, that they refuſed to give judgment, or to have been corrupted, they were puniſhed with infamy. Their ſentence, however, was not final, an appeal lying from it to the ſuperior courts.

The *Diallacterii*, on the contrary, were private arbitrators, from whoſe ſentence there lay no appeal; and accordingly they always took an oath, to adminiſter juſtice without partiality, which the *Cleroti* did not. *Potter*'s Archæol. Græc. l. 1. c. 22. T. 1. p. 122. ſeq.

DIAGLAUCIUM, a name given by the old writers on medicine to a ſort of collyrium, in which the juice of the glaucium, or yellow poppy, was a principal ingredient. It was uſed for beginning lippitudes and ophthalmies.

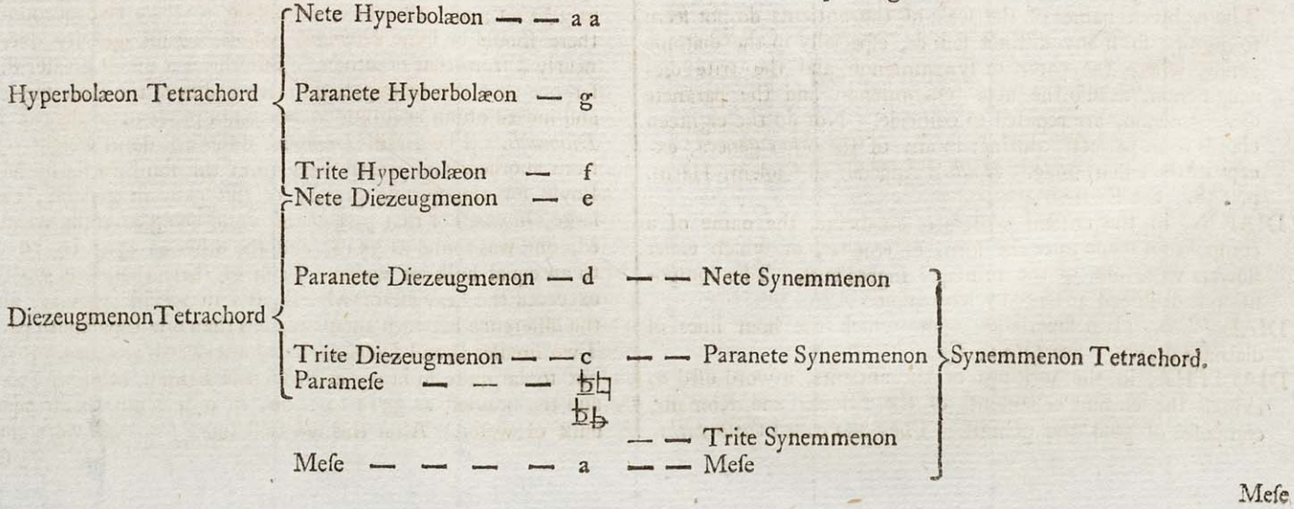
DIAGONAL *Scale*. See SCALE, *Cycl.*

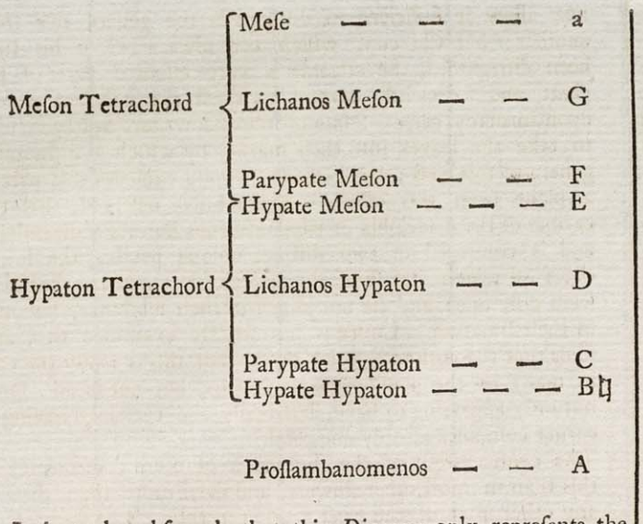
DIAGRAM (*Cycl.*)—The muſical ſcale or *Diagram* of the antients, was of the compaſs of two octaves, and contained eighteen ſounds, whoſe uſual Greek names are mentioned in the Cyclopædia from Malcolm's Treat. of Muſic, p. 519.

Martianus Capella mentions them by the following names, which he thus tranſlates into Latin:

Προσλαμβανομενη, Adquiſitus: ὑπατη ὑπατων, principalis principalium: παρυπατη ὑπατων, ſub-principalis principalium: ὑπατων διατονη, principalium extenta: ὑπατη μεσων, principalis mediarum: παρυπατη μεσων, ſub-principalis mediarum: μεσων διατονη, mediarum extenta: μεση, media: τριτη συνημμενων, tertia conjunctarum: συνημμενων διατονη, conjunctarum extenta: ὑπατη συνημμενων, ultima conjunctarum: παραμεση, prope media: τριτη διεζευγμενων, tertia diviſarum: διεζευγμενων διατονη, diviſarum extenta: ὑπατη διεζευγμενων, ultima diviſarum. τριτη ὑπερβολαιων, tertia excellentium: ὑπερβολαιων διατονη, excellentium extenta: ὑπατη ὑπερβολαιων, ultima excellentium. *Wallis*'s Append. ad Ptolem. Harm. p. 156.

We ſhall here inſert the whole *Diagram*, or Greek Scale, with the correſponding letters of our modern notation.





It is to be obſerved, that this *Diagram* only repreſents the diatonic genus; and therefore, after the names *Lychanos Hypaton*, and *Lychanos Meſon*, ſome add *Diatonos*, to diſtinguiſh them from the Lichanoi of the Chromatic or harmonic genera. *Wallis*, Append. ad Ptolem. Harm. p. 157. See LICHANUS.

The Tetrachords in this Diagram are conjunct or disjunct. The conjunct have a common note, chord, or ſound. Thus the Hypate Meſon, which is the laſt of the Hypaton Tetrachord, is the firſt of the meſon. The meſe alſo is the laſt chord of the meſon, and the firſt of the ſynemmenon tetrachord. So likewiſe the nete diezeugmenon is the laſt chord of the diezeugmenon, and the firſt of the hyperbolæon tetrachord. The disjunct tetrachords are thoſe which are ſeparated by a tone. Thus the meſon and diezeugmenon tetrachords are ſeparated by the tone between the meſe and parameſe: ſo likewiſe the ſynemmenon and hyperbolæon tetrachords are ſeparated by the tone between the nete ſynemmenon, and the nete diezeugmenon.

Some of the names of the chords in this *Diagram* being placed nearer to each other than the reſt, ſignify that there is only a ſemi-tone between them. Thus, between the hypate hypaton and the parypate hypaton, or between the meſe and the trite ſynemmenon, or between the parameſe and trite diezeugmenon, the interval is no more than a ſemi-tone.

It has been obſerved by Dr. Pepuſch [a], that the antients conſidered a deſcending as well as an aſcending ſcale; the former proceeding from acute to grave preciſely by the ſame intervals, as the latter did from grave to acute, and the ſame names ſerved for both. But the proſlambanomenos, and the reſt of the names correſponded to different notes of our ſcale. An example of one octave will explain the learned Author's meaning.

Aſcending		Deſcending
A — Proſlambanomenos		g
B — Hypate hypaton	— —	f
C — Parypate hypaton	— —	e
D — Lychanos hypaton	— —	d
E — Hypate meſon	— —	c
F — Parypate meſon	— —	b
G — Lychanos meſon	— —	a
a — Meſe	— —	G

The intervals here, both aſcending and deſcending, are the ſame, and in the ſame order, viz. tone, ſemi-tone, tone, tone, ſemi-tone, tone, tone. So that the one ſcale is preciſely the reverſe of the other. This diſtinction of an aſcending and a deſcending ſcale, is ſaid to be conducive to the variety and perfection of melody, though little underſtood by modern compoſers.[b] [[a] Phil. Tranſ. N° 481. p. 369. [b] Phil. Tranſ. ibid.]

The eighteen names of the ſcale of the antients do not ſeem to ſignify ſo many diſtinct ſounds, eſpecially in the diatonic genus, where the paranete ſynemmenon and the trite diezeugmenon, as alſo the nete ſynemmenon and the paranete diezeugmenon, are reputed to coincide. Nor do the eighteen chords ſeem perfectly diſtinct in any of the other genera, except in the enharmonic. *Wallis*'s Append. ad Ptolem. Harm. p. 158. See ENHARMONIC.

DIAION, in the antient writers of medicine, the name of a compoſition made into the form of troches, of which violet flowers were one of the principal ingredients. The compoſition is deſcribed at large by Myrepſuus.

DIAL-*Planes*, plain ſuperficies, upon which the hour lines of dials are drawn. See DIAL, *Cycl.*

DIALITHA, in the writings of the antients, a word uſed to expreſs the elegant ornaments of the Greeks and Romans, compoſed of gold and gemms. They alſo called theſe *Lithocolla*, cemented ſtones or gemms: the gold being, in this caſe, as a cement, to hold the ſtones together. They wore bracelets and other ornamental things about their habits thus made; and their cups and table-furniture for magnificient treats were of this kind. The green ſtones were found to ſucceed beſt of all in theſe things; and the emerald and greeniſh topaz, or, as we call it, chryſolite, were moſt in eſteem for this purpoſe. This uſe of the ſtones explains what Pliny very often ſays of them in his deſcription: *Nihil jucundius aurum decet*; nothing becomes gold better: this, he ſays, of the green topaz or chryſolite; and this, and many other like paſſages, have greatly perplexed the critics who did not hit upon this explication. The Latins called theſe *Dialitha* and *Lithocolla aurum gemmatum*; and thus Martial, where he ſays *miratur ſcythicas virentis auri flammas Jupiter*, alludes to cups of Gold, ornamented with Scythian gemms, that is, emeralds. Some of the Latins have expreſſed theſe cups by the word *Gemmium*; but erroneouſly: for *Gemmium* is properly the name of a roſe or cup, formed out of ſome one ſtone, as an agate, or the like; but the *Gemmatum Pocculum* is not a cup made of a gemm, but beſet with gemms: this therefore is properly the Dialithum of the Greeks.

DIALLACTERII, among the Athenians. See DIÆTETÆ.

DIALLELOS, Διαλληλος, in rhetoric, a figure, wherein the words and meaning of a ſentence are inverted, as *doctis diſertior, diſertis doctior*. *Voſſ.* Rhet. l. 5. p. 405.

DIALLING (*Cycl.*)—The general theory of *Dialling* is eaſily deduced from the principles of the ſphere, and thoſe of perſpective. The moſt ſimple kind of *Dial* is the equinoctial, where the ſhadow is received upon a plane parallel to the circles of the ſun's diurnal motion, or to the equator; and is projected by a ſtile, or right line perpendicular to thoſe planes. As the ſun moves over equal arcs on its parallel in equal times; the motion of the ſhadow in this *Dial* muſt likewiſe be uniform, ſo that the intervals between the hours muſt be equal, which is done by dividing a circle into twenty-four equal parts. The conſtruction of other *Dials* may be deduced from this, by the rules of perſpective. For one *Dial* may be conſidered as the projection of another, on a propoſed plane.

Practical Rules for the conſtruction of *Dials*, are given in the Cyclopædia under *Dial*. Thoſe who deſire farther inſtructions may conſult the authors there mentioned in the article DIALLING.

A horizontal *Dial* being given, others may be deſcribed from it, in the manner ſhewn by s'Graveſande, in his eſſay on perſpective, chap. 9.

DIALOGISM, Διαλογισμος, in rhetoric, is uſed for the ſoliloquy of perſons deliberating with themſelves. We have an inſtance of it in Virgil, where Dido ſays,

En quid agam? rurſuſne procos irriſa priores
Experiar? &c.

In which ſenſe it is diſtinguiſhed from dialogue. *Voſſ.* Rhet. l. 5. p. 355. See DIALOGUE, *Cycl.*

DIALOGISM is alſo taken in a more extenſive ſenſe for diſcourſe in general, whether held by a perſon alone, or in company. *Voſſ.* loc. cit.

DIAMARTYRIA, Διαμαρτυρια, in antiquity, a proteſtation that the deceaſed perſon had left an heir; and made to hinder the relations from entering upon the eſtate. *Pott.* Archæol. Græc. l. 1. c. 24. T. 1. p. 128.

DIAMNES, a word uſed by Johannes Anglicus, and ſome other authors, for an involuntary diſcharge of urine.

DIAMOND (*Cycl.*)—*Specific gravity of* DIAMONDS. Mr. Boyle has given us the obſervation of a perſon much converſant in *Diamonds*, that ſome of thoſe gemms in their rough ſtate were much heavier than others of the ſame bigneſs, eſpecially if they were cloudy or foul; and Mr. Boyle mentions one that weighed 8 grains and $\frac{8}{16}$, which being carefully weigh'd in water, according to the rules of hydroſtatics, proved to an equal bulk of that liquor, as $2\frac{2}{3}$ to 1. So that as far as could be judged by that experiment, a *Diamond* weighs not thrice ſo much as water; and yet in his table of ſpecific gravities, that of a *Diamond* is ſaid to be to water as 3400 to 1000, that is, as $3\frac{1}{3}$ to 1; and therefore, according to theſe two accounts, there ſhould be ſome *Diamonds* whoſe ſpecific gravity differs nearly $\frac{1}{8}$ from that of others. But this is a much greater difference than can be expected in two bodies of the ſame ſpecies, and indeed on an accurate trial does not prove to be the caſe in *Diamonds*. The Braſil *Diamonds* differ a little in weight one from another, and greatly vary from the ſtandard ſet by Mr. Boyle for the ſpecific gravity of this gem in general; two large *Diamonds* of that part of the world being carefully weighed, one was found as 3518, and the other as 3521 to 1000, to an equal bulk of water. Each of theſe therefore greatly exceeded the heavieſt of Mr. Boyle's in ſpecific gravity, and the difference between them was leſs than one thouſandth part. Two ſmaller Brazil *Diamonds* being afterwards weighed, proved not to be quite ſo heavy as theſe, the lighteſt being as 3501, and the heavieſt as 3511 to 1000, in proportion to an equal bulk of water. After this ten Eaſt India *Diamonds* were choſen

ſen out of a large parcel, each as different from the other as could be, in ſhape, colour, and whatever other reſpects might make a change; theſe being weighed in the ſame ſcales and water as the former, the lighteſt proved to be as 3512, and the heavieſt as 3525 to 1000, in proportion to water. The very near agreement of theſe laſt with one another, and with the former two, weighed at a diſtance of time, makes it highly improbable there ſhould be ſo great a difference as that expreſſed in Mr. Boyle's tables, in any *Diamonds* whatever, much leſs ſo great a difference as appears between the lighteſt of his, and the heavieſt of theſe, being above one ſeventh of the whole. It is very certain that there may be ſome difference in theſe trials from the nature and temper of the water uſed in the experiments; ſome waters, as that of pumps or wells, being heavier than rain or diſtilled water, and the heat or coldneſs of the water may alſo make ſome variation: this, however, is much leſs than might be expected; careful experiments having proved, that the ſpecific gravity of any body will not differ above $\frac{1}{200}$ at moſt, on account of the difference of the water in quality and temper taken together; whereas the heavieſt and lighteſt of the *Diamonds* in Mr. Boyle's and theſe experiments differ about one thirty-fifth part, which is about ſix times as much as $\frac{1}{200}$.

Mr. Ellicot, who made theſe experiments, has drawn out a table of their ſeveral differences, which is done with great care and accuracy, and taking in all the common varieties in *Diamonds*, may ſerve as a general rule of their mean gravity and differences.

	In air.	In water.	Specific gravity.
	Grains.	Grains.	
Water — — — — — —			1000
N° 1. A Brazil *Diamond*, fine water, and rough coat — —	92,425	66,16	3518
2. Ditto, fine water, rough coat	88,21	63,16	3521
3. Ditto, fine bright coat — —	10,025	7,170	3511
4. Ditto, fine bright coat — —	9,560	6,830	3501
5. An Eaſt-India *Diamond*, pale blue — — —	26,485	18,945	3512
6 Ditto, bright yellow — —	23,33	16,71	3524
7 Ditto, very fine water, bright coat — — —	20,66	14,8	3525
8 Ditto, very bad water, honey-comb coat — — —	20,38	14,59	3519
9 Ditto, very hard, blueiſh caſt	22,5	16,1	3515
10 Ditto, very ſoft, good water	22,615	16,2	3525
11 Ditto, a large red foulneſs in it	25,48	18,23	3514
12 Ditto, ſoft, bad water — —	29,525	21,140	3521
13 Ditto, ſoft, brown coat ——	26,535	18,99	3516
14 Ditto, very deep green coat —	25,25	18,08	3521
The mean ſpecific gravity of the Brazil *Diamonds* appears to be —— — —— ——			3513
The mean of the Eaſt-India Diamonds —— ——			3519
The mean of both —— —— —			3517

Therefore, if any thing determinate is to be ſaid, as to the ſpecific gravity of the *Diamond* it is, that it is to water as 3517 to 1000. Philoſ. Tranſ. N° 476. p. 472.

Valuation of DIAMONDS—Mr. Jeffries lays down the following rule for the valuation of *Diamonds* of all weights. He firſt ſuppoſes the value of a rough *Diamond* to be ſettled at 2 l. per carrat, at a medium; then to find the value of *Diamonds* of greater weights, multiply the ſquare of their weight by 2, and the product is the value required. E. G. to find the value of a rough *Diamond* of two carrats, $2 \times 2 = 4$, the ſquare of the weight, which multiplied by 2, gives 8 l. the true value of a rough *Diamond* of two carrats. For finding the value of manufactured *Diamonds*, he ſuppoſes half their weight to be loſt in the manufacturing them; and therefore to find their value, we muſt multiply the ſquare of double their weight by 2, which will give their true value in pounds: thus, to find the value of a wrought *Diamond* weighing two carrats; we firſt find the ſquare of double the weight, viz. $4 \times 4 = 16$, then $16 \times 2 = 32$. So that the true value of a manufactured *Diamond* of two carrats is 32 l.

By this rule Mr. Jeffries has conſtructed tables of the price of *Diamonds* from 1 to 100 carrats. *Jeffries* on *Diamonds*, p. 8, 9. & p. 11. ſeq. of his tables.

Rough *Diamonds* are more commonly found of a ſix pointed figure than of any other; and theſe are called *ſix pointed rough* Diamonds, the figure of which is compoſed of two ſquare pyramids, joined at their baſes. Hence the whole figure is compoſed of eight triangular faces, or planes, four of which meet in a point above the baſe, and four below it, in another point.

The diſtance of theſe two points is the axis of the figure.

Dimenſions of a ſquare brilliant DIAMOND.—To make a complete *ſquare Brilliant*, if the rough *Diamond* be not found to be of the figure here deſcribed, it muſt be made ſo. And if the work be perfectly executed, the length of the axis will be equal to the ſide of the ſquare baſe of the pyramid.

Jewelers then form the table and collet, by dividing the block or length of the axis into 18 parts. They take $\frac{1}{18}$ from the upper part, and $\frac{1}{18}$ from the lower. This gives a plane at $\frac{4}{18}$ diſtance from the girdle for the table; and a ſmaller plane at $\frac{8}{18}$ diſtance, for the collet; the breadth of which will be $\frac{1}{3}$ of the breadth of the table. In this ſtate the ſtone is ſaid to be, *a complete ſquare table* Diamond. *Jeffries* on Diamonds, p. 13.

The Brilliant is an improvement on the table *Diamond*, and was introduced within the laſt century, according to Mr. Jeffries.

To render a Brilliant perfect, each corner of the above deſcribed table *Diamond*, muſt be ſhortened by $\frac{1}{25}$ of its diagonal. The corner ribs of the upper ſides muſt be flattened, or run towards the center of the table $\frac{1}{9}$ leſs than the ſides. The lower part which terminates in the girdle, muſt be $\frac{1}{8}$ of one ſide of the girdle; and each corner rib of the under ſides muſt be flattened at the top, to anſwer the above flattening at the girdle, and at bottom muſt be $\frac{1}{4}$ of each ſide of the collet.

The parts of the ſmall work which completes the brilliant, or the ſtar and ſkill facets, are of a triangular figure. Both of theſe partake equally of the depth of the upper ſides from the table to the girdle, and meet in the middle of each ſide of the table and girdle, as alſo at the corners. Thus they produce regular lozenges on the four upper ſides and corners of the ſtone. The triangular facets, on the under ſides, joining to the girdle, muſt be half as deep again as the above facets to anſwer to the collet part.

The ſtone here deſcribed is ſaid to be a *full ſubſtanced Brilliant*. If the ſtone be thicker than in the proportion here mentioned, it is ſaid to be an *over-weighted Brilliant*.

If the thickneſs be leſs than in this due proportion, it is called a *ſpread Brilliant*.

The beauty of *Brilliants* is diminiſhed by their being either over-weighted or ſpread. The true proportion of the axis or depth of the ſtone to its ſide, is as 2 to 3.

Brilliants are diſtinguiſhed into ſquare, round, oval, and drops, from the figure of their reſpective girdles.

Dimenſions of a roſe DIAMOND—In *roſe Diamonds* the depth of the ſtone from the baſe to the point, muſt be half the breadth of the diameter of the baſe of the ſtone. The diameter of the crown muſt be $\frac{3}{4}$ of the diameter of the baſe. The perpendicular from the baſe to the crown muſt be $\frac{3}{4}$ of the depth of the ſtone. The lozenges, which appear in all circular roſe *Diamonds*, will be equally divided, by the ribs that form the crown; and the upper angles, or facets, will terminate in the extreme point of the ſtone, and the lower in the baſe or girdle.

The taſte which now prevails of converting roſe *Diamonds* into *Brilliants*, is condemned by Mr. *Jeffries*; unleſs the roſe *Diamonds* be over-weighted. He thinks, that the diſplay of beauty, in roſe *Diamonds*, is often preferable to that of *Brilliants*. See his treatiſe on *Diamonds*, p. 32, 35.

Mr. Jeffreys's table of the value of *Diamonds* differs conſiderably from that in the Cyclopædia. This not following the rule laid down by him, of the values increaſing in the duplicate proportion of the weights.

Complexions of DIAMONDS—The fineſt *Diamonds* are thoſe of a complexion like that of a drop of the cleareſt rock water: and if ſuch ſtones be of a regular form, and truly made; as alſo free from ſtains, fouls, ſpots, ſpecks, flaws, and croſs veins, they will have the higheſt luſtre of any, and be eſteemed the moſt perfect.

If *Diamonds* be tinctured yellow, blue, green, or red, in a high degree, they are next in eſteem. But if they partake of theſe colours only in a low degree, it greatly ſinks their value. There are other complexions of *Diamonds*, ſuch as the brown, and thoſe of a dark hue; the firſt ſometimes reſemble the browneſt ſugar-candy, and the latter duſky-iron.

The *firſt water* in *Diamonds* means the greateſt purity and perfection of their complexion, which ought to be that of the cleareſt drop of water.

When *Diamonds* fall ſhort of this perfection, they are ſaid to be of the *ſecond* or *third water*, &c. till the ſtone may be properly called a coloured one: for it would be an impropriety to ſpeak of a *Diamond* imperfectly coloured, or having other defects, as a ſtone of a *bad water* only.

Magnitude of DIAMONDS—The moſt remarkable *Diamonds* for ſize now known, are, Governor Pitt's Diamond, purchaſed by the late Duke of Orleans for Louis the XVth King of France, weighing $136\frac{3}{4}$ carrats: the *Diamond* of the Great Duke of Tuſcany, which weighs $139\frac{1}{2}$ carrats: that of the Great Mogul, weighing $279\frac{9}{16}$ carrats: and one, mentioned by Mr. Jeffries, in a merchant's hands, weighing $242\frac{5}{16}$ carrats.

According to Mr. Jeffries's Rule, that the value of *Diamonds* is in the duplicate ratio of their weights, and that a manufactured *Diamond* of 1 carrat is worth at a medium 8 l. the Great Mogul's *Diamond* muſt be valued at above 624962 l. this being the value of a *Diamond* of $279\frac{1}{2}$ carrats.

Corniſh DIAMONDS, in natural hiſtory, a name given in England to all the ſpecies of cryſtals, which are compoſed of a column, terminated at each end by a pyramid. The name takes in two genera of cryſtal, of each of which there are ſeveral ſpecies. Dr. Hill has determined this to be the true figure of perfect cryſtal, and accounts all thoſe which are affixed by one end to ſome ſolid body, and terminated at the other by a pyramid, to be mutilated or imperfect cryſtals. The ſame author, according to the length or thickneſs of the intermediate column, has divided theſe bodies into two genera, the firſt the macroteloſtyla, the other the brachyteloſtyla. *Hill*'s hiſt. of foſ. p. 160 to 165. See the articles MACROTELOSTYLA and BRACHYTELOSTYLA.

DIAMOND *Powder* is of great uſe for grinding hard ſubſtances. And Mr. Boyle obſerves, that though it be much dearer than emery, yet it makes ſo great diſpatch, and the tools employed laſt ſo much longer, as greatly to over-balance the cheapneſs of the emery. *Boyle*, Phil. Works abr. vol. 1. p. 135.

DIANÆ *Arbor*.—Lewenhoeck, in one of his papers of the Philoſophical Tranſactions, deſcribes a microſcopic kind of *Arbor Dianæ*; which muſt afford the curious in thoſe obſervations, a very pleaſing ſpectacle. Having diſſolved ſome pure ſilver in aqua fortis, and weakened this ſolution, by adding ſome common water to it; after this, putting this diluted ſolution into a glaſs, and dropping into it a few filings of copper, one particle at a time; there will be found on ſome of theſe, extempore ſilver trees; the ſilver leaving the liquor, and affixing itſelf in very ſmall particles to the copper, which, as they grow more and more numerous, link themſelves to one another, and form the ſame ramoſe maſſes that are called the ſilver trees. A ſtem, or main trunk, is, in this caſe firſt form'd, and after this a number of fine and elegant branches growing from it every way, till at laſt there is a whole tree reſembling thoſe low and headed oaks, which are common on heaths and in other barren places. This is ſo ſudden an effect of the putting in the copper, that a few ſeconds are ſufficient to form ſeveral trees. If a few more particles of copper are thrown into this liquor, the whole quantity of ſilver that was held in a ſtate of ſolution in it will be precipitated from it, and fixed in the form of theſe ſmall trees and ſhrubs on the ſeveral pieces of copper. The formation and arrangement of theſe ſmall particles of ſilver into trees, is not more natural in this ſtate of their ſeparation from the particles of a fluid, in which they were ſuſpended, than in their natural concretions within the bowels of the earth, where they fix themſelves to the ſurfaces, and within the cracks and crevices of hard ſtones, in the ſame arboreſcent forms; and the moſt common ſilver ores afford us an infinite number of what may be called natural *Arbores Dianæ*, or trees of native ſilver. On comparing theſe natural ſilver trees in the ores, with thoſe formed upon the particles of copper, from a water in which they were ſuſpended in a ſtate of ſolution, it appears, highly probable, that in the time of the origin of theſe ores, the ſtone which makes the bed, or matrix, in which the rich metal now lies in branches and flakes, was ſoft and fluid; and that, at that time, the particles of ſilver were as cloſely combined among, and as perfectly ſuſpended in its matter as thoſe of the ſolution in this experiment are in the liquor; and that when the matter of the ſtone came to coaleſce, and harden its particles, uniting together, formed hard concretions; from which the fluid was excluded, or driven out, and with it the ſilver ſtill ſuſpended in it: but, as this fluid, ſo much altered, by the ſeparation of the ſtony matter from it, was now no longer equal to the office of holding the ſilver ſuſpended in ſolution, it became juſt like this diluted ſolution of ſilver in the acid, ready to part with, and depoſite it in the form of trees and ſhrubs, on any ſubſtance proper to receive it; and that the ſtony particles, now ſeparated, and coagulated into hard maſſes, were ſuch proper ſubſtances; and did exactly, in this natural precipitation, what the filings of copper do in the artificial one. There is yet the more analogy in this caſe, becauſe, both the ſilver and the copper added afterwards, are ſubſtances ſoluble in the ſame menſtruum that is employed; and ſo it appears evident, that the ſtony matter of the matrix, or bed of the ſilver ore, and the ſilver itſelf were both equally ſoluble in that menſtruum, whatever it was, which before held them both ſuſpended: and that as ſoon as the one of theſe two ſoluble ſubſtances was added to the liquor in its ſolid ſtate, the other was precipitated upon it in this branched form. Philoſ. Tranſ. N° 286. p. 1496. See ARBOR *Dianæ*, *Cycl.*

DIANDRIA, in botany, a claſs of plants, which have hermaphrodite flowers, with two ſtamina or male parts in each.

The word is formed of the Greek Δις twice, and Ανηρ male. Of this claſs of plants are the jeſſamine, phillerea, olive, roſemary, &c. See Tab. 1. of botany, Claſs 1.

DIAPASON (*Cycl.*)—The antients had ſeven variations, ſchemes, figures, or ſpecies of the *Diapaſon*, ariſing from the various poſitions of the tones and ſemi-tones in the ſcale.

The firſt ſpecies of the *Diapaſon* was from the hypate hypaton to the parameſe; or from B♮ to b♮ of our notation. It was called *Myxolydian*.

The ſecond, called *Lydian*, from the parypate hypaton, to the trite diezeugmenon, or from C to c.

The third, called *Phrygian*, from the Lichanos Hypaton to the Paranete Diezeugmenon; or from D to d.

The fourth, called *Dorian*, from the Hypate meſon to the Nete Diezeugmenon; or from E to e.

The fifth, named *Hypolydian*, from the parypate meſon to the trite Hyperbolæon; or from F to f.

The ſixth, called *Hypophrygian*, from the lichanos meſon to the paranate Hyperbolæon; or from G to g.

The ſeventh, named *Hypodorian*, *Common* and *Locrian*, from the meſe to the nete Hyperbolæon, or from the Proſlambanomenos to the meſe, that is, from our a to a a, or from A to a. *Euclid.* Introd. Harm. p. 15, ſeq. *Bacchius*, p. 18. Edit. Meibom. See DIAGRAM.

DIAPASON *Diateſſaron*. The Pythagoreans did not admit this interval as a conſonance or concord; for this reaſon, that its ratio 8 : 3 was neither multiple nor ſuper-particular. But Ptolemy contends for its being a good concord for this reaſon, that the *Diapaſon* added to any concord, produces a concord. Ariſtoxenus herein agrees with him. Vid. *Wallis*'s Append. ad Ptolem. Harm. p. 155.

DIAPERD, in Heraldry, ſee DIAPRE, *Cycl.*

DIAPHRAGM (*Cycl.*)—The *Diaphragm* is looked upon as a double digaſtrick muſcle, made up of two different portions, one large and ſuperior, the other ſmall and inferior; the firſt is called the great muſcle of the *Diaphragm*; the ſecond, the ſmall one.

The great or principal muſcle is fleſhy in its circumference, and tendinous or aponeurotic in the middle. This centre is of conſiderable breadth, and repreſents in ſome degree a trefoil leaf. The fleſhy circumference is radiated, the fibres of which it is compoſed being fixed by one extremity to the edge of the middle aponeuroſis, and by the other to all the baſis of the cavity of the thorax, being inſerted by digitations in the lower parts of the appendix to the ſternum, of the loweſt true ribs, of all the falſe ribs, and in the neighbouring vertebræ. There are therefore twelve coſtal inſertions, two vertebral, and one ſternal. The fibres inſerted in the appendix enſiformis run from behind directly forward, and from a ſmall parallel plane; The firſt coſtal inſertion runs a little obliquely toward the cartilage of the ſeventh true rib; the ſecond is into the whole cartilage of the firſt falſe rib; the third partly in the bone, and partly in the cartilage of the ſecond falſe rib; the fourth in the bone, and ſometimes a little in the cartilage of the third falſe rib; the fifth in the bone, and a little in the cartilage of the fourth falſe rib, being broader than the reſt; the ſixth is in the cartilage of the laſt falſe rib, and almoſt through the whole length of the bone. At the head of this rib it joins the vertebral inſertion, which runs from the lateral part of the laſt vertebra of the back to the firſt vertebra of the loins. The lateral inſertions of the great muſcle of the *Diaphragm* on the right ſide appear to be lower than thoſe on the left, and the right lateral portion appears to be larger than the left, as being more arched. The ſmall muſcle of the *Diaphragm* is thicker than the other, but of much leſs extent; it is ſituated along the foreſide of the bodies of the laſt vertebræ of the back, and ſeveral of thoſe of the loins, being turned a little to the left hand; it is of an oblong form, repreſenting in ſome meaſure a fleſhy collar, the two lateral portions of which croſs each other, and afterwards become tendinous towards the lower part. The upper part of the body of this muſcle is fixed in the ſlope of the middle aponeuroſis of the great muſcle. The outer edges of the alæ, or lateral portions, join the poſterior plane of the great muſcle, and adhere to the body of the laſt vertebræ of the back. The extremities, called alſo pillars or crura, are inſerted by ſeveral tendinous digitations in the vertebræ of the loins; the upper part of the fleſhy body is formed by a particular intertexture of fibres belonging to the alæ; the fibres that come from the left, croſs over thoſe from the right; and this again ſends a ſmall faſciculus of fibres over thoſe of the left. The right croſs is larger and longer, the left ſmaller and ſhorter. An oval opening in this muſcle gives paſſage to the œſophagus, and the aorta lies in the interſtice between the two crura. There are in all three openings in the *Diaphragm*, one round and tendinous for the paſſage of the vena cava; one oval and fleſhy for the extremity of the œſophagus; and one forked, partly fleſhy and partly tendinous, for the aorta. *Winſlow*'s anatomy, p. 226.

The *Diaphragm* is the chief organ of reſpiration. Dr. Martin thinks the enlargement of the cavity of the breaſt in inſpiration more owing to the depreſſion of the *Diaphragm*, than to any remarkable change in the poſture of the ſternum and ribs. See RESPIRATION.

Mr. Senac has given us a new deſcription of the ſtructure of the *Diaphragm*, with remarks on the action of this muſcle. See Mem. Acad. Scienc. 1729.

DIAPORESIS, Διαπορησις, in rhetoric, is uſed to expreſs the heſitation or uncertainty of the ſpeaker.

We have an example in Homer, where Ulyſſes going to relate his ſufferings to Alcinous, begins thus:

Τί πρῶτον, τί δ' ἔπειτα, τί δ' ὑστάτιον κατάλεξω?
Quid primum, quid deinde, quid poſtremo aloquar?

This

This figure is moſt naturally placed in the exordium or introduction to a diſcourſe. *Voſſ.* Rhet. l. 5. p. 384. See DOUBTING, *Cycl.*

DIARRHOEA (*Cycl.*)—The *Diarrhœa*, looſeneſs or purging of the bowels, as it is uſually called by us, is properly an increas'd periſtaltick motion of the guts, by means of which nature attempts to throw off a mucous or bilious matter lodged in too great a quantity in the primæ viæ, and diſturbing her regular operations.

Phyſicians diſtinguiſh *Diarrhœas* into ſeveral kinds: 1. The ſimple *Diarrhœa*. This is when a ſerous and mucous matter is voided by ſtool. 2. The choleric *Diarrhœa*, in which a bilious foulneſs is thrown off. 3. The Lienteric *Diarrhœa*, in which caſe the food is thrown off ſo ſpeedily, that it appears in its natural ſtate, and to have ſuffered no concoction. 4. The cœliac *Diarrhœa*; in this the excrements are a little different from the food when taken in, and are of a chylous appearance. 5. The dyſenterick and hepatic *Diarrhœa*, ſee DYSENTERY and HEPATIC flux. 6. The critical *Diarrhœa*, which happens in fevers on the day of the criſis. This uſually is the caſe in quotidians of the continual kind, and ſometimes in tertians in the time of the fit. 7. The ſemicritic. Theſe are *Diarrhœas* which appear at irregular times in catarrhal and petechial fevers. 8. The ſymptomatic *Diarrhœas*. Theſe appear in the ſmall-pox, meaſles, and purple fever. 9. The icteric *Diarrhœa*. In this the ſtools are whitiſh as in the jaundice. 10. The periodic *Diarrhœas*. Theſe are ſuch as return upon the patient at certain regular times of the year, particularly at the ſpring and autumn. And finally, 11. The colliquative *Diarrhœa*. This is that kind that appears toward the laſt ſtage of hectics and conſumptions, and uſually carries off the patient. *Junker*'s Conſp. Med. p. 551.

Signs of a DIARRHOEA.—The ſigns which precede a *Diarrhœa* of any kind are uſually a tenſive pain and rumbling, and noiſe in the abdomen, and pungent acute pains, particularly about the region of the navel. The appetite is uſually very bad in the beginning of a *Diarrhœa*, and in its future ſtages the ſtrength fails; and the longer it continues, the worſe ſymptoms it brings on: a teneſmus is one common complaint, and the head is weaken'd and aches at times; and, finally, an internal heat is felt, which is a very bad ſymptom, and threatens miſchiefs of various kinds.

Perſons moſt ſubject to DIARRHOEAS.—The ſimple *Diarrhœa*, in which a mucous and ſerous matter is voided, is principally a diſeaſe incident to people of phlegmatic habits, whoſe ſtools are generally watery. When this kind of *Diarrhœa* obſerves any regular period, it is a ſign of a ſanguine temperament in the perſon. The bilious *Diarrhœas* are moſt frequent with perſons of choleric habits; and the critical *Diarrhœas* in fevers uſually happen to perſons of a ſanguine one. Men of tender and delicate conſtitutions, if they walk about a room when hot with their feet naked, are uſually affected afterwards with a ſimple *Diarrhœa*.

Cauſes of DIARRHOEAS.—Among the principal Cauſes of *Diarrhœas* may be reckoned the ſudden repreſſion of ſweats in a morning while the perſon is in bed.

Crude foods, and ſuch as are difficult of digeſtion, often throw people into *Diarrhœas*, as alſo over fat meats, eſpecially if perſons drink much after them; and nothing ſo frequently as the free eating of ſummer fruits, eſpecially if the perſon chance to ſwallow a quantity of any thing liquid ſoon after them.

Feculent or fermenting liquors will alſo do it, and ſometimes the drinking cold liquors in a large quantity, or even the external cold; but in this caſe the tender habit of the patient is as much to be accuſed as any thing.

The cauſe of a lienteric *Diarrhœa* is principally the cicatrizing of the bowels after their eroſion in a dyſentery, in which the lacteal veſſels have been alſo injured. The cœliac *Diarrhœa* is uſually laid upon a fault in the ſtomach; but it is as often owing to an obſtruction of the lacteal veſſels, as to a weakneſs of that organ. The choleric *Diarrhœa* is uſually occaſioned by an effuſion of a larger portion than uſual of bile into the inteſtines, and this is often occaſioned by a violent fit of paſſion in the perſon. *Junker*'s Conſp. Med p. 553.

Prognoſtics in DIARRHOEAS.—All *Diarrhœas* are diſeaſes of the greateſt conſequence when improperly treated, or raſhly and ſuddenly ſtopped by opiates and aſtringents. On the contrary, the whole courſe of a ſimple *Diarrhœa*, if nature be left to herſelf, is attended with no danger. When the moſt ſimple and, in itſelf, innocent *Diarrhœa* is treated in that manner, the conſequences are violent and pungent pains in the abdomen; and, in old people eſpecially, a tranſlation of the matter, which nature would have carried off by that ſoft way, to the head and breaſt; whence vertigos and ſuffocative catarrhs are often brought on, and the perſons die ſuddenly, and as it is ſuppoſed of apoplexies. The danger of ſtopping a bilious *Diarrhœa* is ſtill greater, for the frequent conſequence of this is a cauſus, or other violent fever of that kind; but the greateſt danger of all attends the ſtopping of a critical *Diarrhœa*. The ſymptomatick *Diarrhœas* in the ſmall-pox, meaſles, and purple fevers are often of fatal conſequence. Periodic *Diarrhœas*, if nature be left to herſelf, are always ſalutary. The ſimple lienteric and cœliac *Diarrhœas* uſually give way eaſily to medicines, and the choleric are of no dangerous conſequence, unleſs they are attended with a fever. Finally, it is to be obſerved, that any *Diarrhœa* continuing an immoderate time will by degrees waſte the ſtrength, and throw the patient into a ſlow fever and an atrophy.

Method of curing DIARRHOEAS.—In a ſimple *Diarrhœa* the firſt intention is to incide and attenuate the mucous matter, and then to abſterge it by digeſtive, reſolvent, and colliquating medicines; ſuch are the bitters and aromaticks, with ſome of the acrid ones, as the roots of gentian, arum and zedoary, together with ginger, galingals, and the aromatic ſeeds. Theſe may be aſſiſted by the digeſtive ſalts, as cream of tartar, arcanum duplicatum, and vitriolated tartar, with the fixed ſalts of wormwood, and the like. To theſe may be added occaſionally the digeſtive and attenuating gums, as ammoniacum, and the like; and in ſome caſes it is proper to reduce the vicious matter into a ſort of pulpy conſiſtence. This is to be done by the abſorbents, as crabs-eyes, and the like. When there is a quantity of a bilious matter mixed with this, the admixture of ſmall doſes of nitre with the other medicines is of great effect; and when the peccant matter is by this means prepared for evacuation, nature is to be aſſiſted in her attempt to throw it off by this proper paſſage by ſmall doſes of gently laxative medicines, ſuch as rhubarb, and the like. After this, if the motion of the bowels do not abate and come to its uſual ſtandard on their being thus eaſed of their load, theſe ſymptoms are to be taken off by gentle aſtringents. For though theſe motions were no way to be impeded, when nature meant them for the throwing off what offended her, and were ſalutary in that ſtate; yet when they remain after the end is obtained, they are to be conſider'd as a diſeaſe. The medicines proper on this occaſion are dried quinces, the abſorbent powders, ſuch as red coral, and the like, gentle opiates, and the aſtringent ſyrups of cinnamon, and the like; and finally, the cure is to be compleated by reſtoring the bowels to their due tone by gentle chalybeates.

The lienterick and cœliac *Diarrhœas* require the ſame method of treatment with theſe, except that in the lienterick a vomit in the beginning is uſually very proper: but in the cœliac, when there is an obſtruction of the lacteal veſſels, a vomit has no uſe; but the reſolvents, aperients, and laxatives alone are to be depended upon.

Periodic *Diarrhœas* are to be treated in this manner like the ſimple ones, and nature is to be aſſiſted, not checked, in her operations in them. In theſe caſes a medicated wine prepared with rhubarb, gentian, zedoary, and black hellebore, is a very valuable medicine. When worms are ſuſpected to be in the caſe, as they very frequently are, the uſual anthelminthics are to be joined to the medicines before directed.

The critical and ſemicritical, as well as ſymptomatic *Diarrhœas* in fevers, are to be treated as directed under the fevers to which they belong; and the icteric *Diarrhœa*, in which the ſtools are white as in the jaundice, is to be treated as the jaundice. *Junker*'s Conſp. Med. p. 557. See the articles WORMS, FEVER, *&c.*

DIARRHOEA *of Infants*, ſee INFANT.

DIARTHROSIS (*Cycl.*)—In the *Diarthroſis*, or moveable articulations of the bones, the pieces are really ſeparated, and the parts in which they touch are each of them covered by a ſmooth cartilage, by means of which they eaſily ſlide over one another; whereas in the ſynarthroſis, or immoveable articulation, the pieces are joined together in ſuch a manner, that the parts in which they touch have nothing particular in their ſurface, and cannot ſlide upon one another.

The *Diarthroſis* is either manifeſt with large motion, or obſcure with ſmall motion. Each of theſe is alſo again of two kinds, one indeterminate, with motion many different ways, as that of the os humeri upon the ſcapula of the os fremoris on the os innominatum. The other alternative, or with motion, confined to the two oppoſite ſides only, as that of the ulna on the os humeri, and that of the two laſt phalanges on the firſt and ſecond. A bone is ſaid to be moveable many different ways, when it can be turned upwards and downwards, forwards and backwards, to the right and to the left, or quite round. The motion quite round is made either on a pivot, that is, about an axis, or in manner of a ſling, when the bone deſcribes a ſort of cone, or the figure of a funnel, one end of it moving in a very ſmall ſpace, the other in a large circle. The firſt of theſe round motions is termed rotation by anatomiſts; the other is only the reſult of a combination of ſeveral different motions upwards, downwards, *&c.* and it is to be remarked, that rotation is not to be met with in all the articulations for motion many different ways; as the articulation of the firſt phalanges with the metacarpal bones, *&c.* does not admit of it.

Moreover, this indeterminate *Diarthroſis* is of two kinds, the one orbicular or globular; the other flat, or planiform. The orbicular *Diarthroſis* is when the round end of one bone moves in the cavity of another more or leſs proportionable to it. As the head of the os femoris in the acetabulum of os innominatum,

tum, or when the cavity in one bone moves upon an eminence in another, as the baſes of the firſt phalanges on the heads of the metacarpal bones. The planiform *Diarthroſis* is when the articulated bones ſlip upon one another, much in the ſame manner as when we rub the palm of one hand upon the palm of the other. This articulation is found in the bones of the carpus and tarſus, and in the oblique proceſſes of the vertebræ. The antients called the firſt of theſe two kinds of articulation enarthroſis, the other arthrodia; and ſome modern French writers ſeem to comprehend both under the word genou, a term borrowed from workmen, who probably firſt ignorantly took it from the human body to apply it to their inſtruments. This term indeed, as they uſe and explain it, agrees well enough with all the degrees of the orbicular *Diarthroſis*; but there are undoubtedly many articulations of the other kind ſo very flat, that a skilful workman would not apply the term genou to ſuch.

The alternative or reciprocal *Diarthroſis* bears ſome reſemblance to a hinge, and for that reaſon the antient Greeks called it ginglymus. This has been divided into ſeveral kinds, but properly ſpeaking there are only two. The firſt is that which is confined to flexion and extenſion, and as in one of theſe motions, the two bones always make an angle, it may be not improperly termed the angular ginglymus: this is exactly the ſame with the motion of a hinge. The ſecond kind is adapted only to ſmall turns toward each ſide, or to ſmall lateral rotations, in the language of anatomiſts: this therefore may be termed a lateral ginglymus. In each kind ſeveral differences are to be taken notice of. In the angular ginglymus, either each bone partly receives, and partly is received by the other, there being reciprocal eminences and cavities in each, as in the articulation of the os humeri with the ulna. Or there are only a number of eminences in one bone received into a like number of cavities in the other, as in the articulation of the os femoris with the tibia. The lateral ginglymus is either ſingle, as in the articulation of the firſt vertebra of the neck with the apophyſis dentiformis of the ſecond; or double, that is, in two different parts of the bone, as in the articulation of the ulna with the radius. It muſt in general be obſerved concerning theſe kinds of articulations, that ſome of them are more perfect and cloſe than others, and that they are not all confined to flexion and extenſion, or to the reciprocal turns already explained.

The obſcure *Diarthroſis*, or that which admits only of ſmall motions, is alſo of different kinds, examples of which are found in the articulations of the bones of the carpus and metacarpus, and of the fibula with the tibia. This articulation has by ſome been called doubtful or neutral, and by others amphiarthroſis, while others have reduced it to a ſynarthroſis. The firſt of theſe names might paſs, but the reſt are improper. *Winſlow*'s Anatomy, p. 152.

DIASCHISM, *Diaſchiſma*, in muſic, the difference between the comma and enharmonic dieſis. This is expreſſed by the ratio $\frac{2048}{2025}$, for $\frac{128}{125} : \frac{81}{80} = \frac{2048}{2025}$. Mr. Euler [a] has taken this term in the ſenſe here mentioned. Others call it the leſſer comma [b]. The octave contains 61 *Diaſchiſms* nearly. [a Tentam. Nov. Theor. Muſic. p. 107 and 112. b Ibid. p. 107.] See COMMA, *Cycl.*

DIASIA, Διασια, in antiquity, a feſtival at Athens in honour of Jupiter, ſurnamed Μειλιχιος, i. e. the *Propitious*. *Pott.* Archæol. l. 2. c. 20.

DIASTASIS, a word uſed by the writers in medicine in many different ſenſes. It is frequently uſed as a name for that ſeparation of the bones, when they naturally recede from one another. Sometimes it is uſed as the term for an interſtice, as that between the ulna and radius, or between the tibia and fibula. Sometimes it is put for a diſtenſion of the muſcles in convulſions; and, when applied to the ſtomach, it is made to ſignify an inclination to vomit.

DIASTEM, Διαστημα, in the antient muſic, was the difference of tenſions [a]. It anſwers to what we call an interval.

Ariſtoxenus [b] enumerates many differences of intervals: ſuch as greater, or leſs; conſonant, or diſſonant; compounded, or uncompounded; related to one genus, or to another; laſtly, rational or irrational. [a *Ariſtox.* ap. *Wallis.* Append. ad Ptolem. Harmon. p. 154. b Id. ibid. p. 16. Edit. *Meibom. Wallis*, ibid.]

DIASTOLE (*Cycl.*)—Authors, who have treated of the heart, have all contented themſelves with accounting for its ſyſtole on rational principles, and have been ſatisfied with referring its *Diaſtole* to no other principle than a motion of reſtitution. But Dr. Drake has thought more deeply on this ſubject, and has found that reſpiration has an effect upon the heart in this ſenſe which had not been underſtood before. The ſyſtole being the proper motion of the heart, a ſtate of contraction by means of that ſyſtole muſt needs be its natural ſtate, and conſequently no motion of reſtitution natural, and without external violence it could have no *Diaſtole* at all.

This will appear more plain, if we conſider the circumſtances of the heart, and its motion as a muſcle, with reſpect to other muſcles. That contraction is the proper action and natural ſtate of all muſcles, is evident from experience as well as from reaſon: for, if any muſcle be freed from the power of its antagoniſt, it is immediately contracted; and is not by any action of the will or ſpirits, to be reduced to a ſtate of dilatation: thus, if the muſculi flexores of any joint be divided, the extenſores of that joint, the oppoſite muſcles to the flexores, being freed from the contrary action of their antagoniſts, will exert themſelves; the joint will be extended without the conſent of the will, and it will continue in that poſture: and, on the other hand, if the extenſors are divided, the contractors will of themſelves exert their force, and the limb will be contracted without the conſent of the will, and it will continue in this poſture. It is very evident from all this, that the muſcles of the human body have no reſtitutionary power of their own, but that all power of this kind in them is derived from the action of their antagoniſts by which they are balanced: thus likewiſe the ſphincters of the gula, anus, and veſica, having no proper antagoniſts, are always in a ſtate of contraction, and ſuffer nothing to paſs through them, but what is forced on by the action of other ſtronger muſcles; which, though not properly antagoniſts to theſe, yet, on all neceſſary occaſions, perform the office of ſuch.

That the heart is a muſcle furniſhed and provided for motion, like other muſcles, has been demonſtrated, beyond all contradiction, long ago, by Lower, and many others, who have written of it, and it is a ſolitary muſcle: it has no antagoniſt, and is not under the direction of the will: as it performs alſo no voluntary motion, it in all things approaches more to the nature of the ſphincter muſcles, than to any kind beſide; but, in its conſtant actions of contraction and dilatation, it differs exceedingly from all the muſcles of the body. This reciprocal motion of the heart has given the learned abundance of trouble, who finding nothing peculiar in the ſtructure which ſhould occaſion it, nor any antagoniſt whoſe relation ſhould produce it, have been extremely perplexed to find out the cauſe of it. Lower having proved the heart a muſcle, and eſtabliſhed the manner of its muſcular motion, takes notice of no farther aſſiſtance that it receives for the performing this, than what it has from the brain, by means of the eighth pair of nerves. Borelli, in his *Animal Oeconomy*, computes the motive power of the heart, to be equal to, at leaſt, that of a weight of three thouſand pounds. The obſtacles to the motion of the blood, through the arteries, he eſteems equivalent to one hundred and eighty thouſand pounds, which is ſix times as much as he rates the force of the heart at; then deducting forty five thouſand pounds, for the adventitious help of the muſcular elaſtic coat of the arteries, he leaves the heart, with the full force of three thouſand pounds to overcome the reſiſtance of a hundred and thirty-five thouſand pounds; that is, with one, to remove forty-five. This ſtupendous effect, he ſatisfies himſelf with aſcribing to the energy of percuſſion; but, had he proceeded, in his calculation, to the veins; which, he allows to contain conſtantly a quantity of blood, quadruple to the contents of the arteries, and to which this energy of percuſſion does not either reach at all, or but very languidly; he might probably have ſeen a neceſſity of ſome other expedient, to remove ſo inſuperable a difficulty.

But not to inſiſt regularly on the exactneſs of this computation, we may allow a much greater deduction than would be juſtifiable, without leſſening the difficulty. Dr. Lower, notſtanding the care and ſagacity with which he examined this ſubject, ſeems to have overlooked ſomething of very great moment, in the explication of the action of the heart; for, though it ſhould be granted, that the muſcular fibres of the heart, acted by the nerves, are the immediate inſtruments of its ſyſtole or contraction, yet it muſt not be denied that the intercoſtal muſcles and diaphragm are of great ſervice, to aid and facilitate this contraction, by opening a paſſage for the blood through the lungs, which denied, would be an invincible obſtacle: neither do the lungs promote the motions of the heart in that way only, but the manner in which they aſſiſt the heart in its contraction, will appear manifeſtly, if we conſider the different poſture, ſituation, and capacity of the blood veſſels of the lungs, in the ſeveral times of elevation and depreſſion of the coſtæ.

The pulmonary artery ariſes from the right ventricle of the heart, and runs in one trunk, till it comes to the aſpera arteria, where it is divided, and ſends a branch along with each diviſion of the aſpera arteria; according to all the minuteſt ſubdiviſions of which, it is alſo ſubdivided, accompanying all the bronchi in their paſſage through the lungs.

The pulmonary vein, which empties itſelf into the left ventricle of the heart, ſpreads itſelf on the aſpera arteria and bronchi, and continues its progreſs in the ſame manner, in which the artery does. The neceſſary conſequence of this diſpoſition is, that this artery and vein, being co-extended with, and faſtened to the bronchi, muſt needs ſuffer ſuch alteration of ſuperficial dimenſions, as the bronchi do in the elevation and depreſſion of the coſtæ; while the ribs are in a ſtate of depreſſion, whether before commerce with the external air, or after the annular cartilages of the bronchi, ſink into one another, and by that means their dimenſions are exceedingly contracted; in conformity to this condition of the bronchi, the pulmonary artery and vein muſt likewiſe either

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