by means of their muſcular coats, contract themſelves to the ſame dimenſions, or lie in folds or corrugations, which is much leſs probable.

On the other hand, when the ribs are elevated, and the diaphragm bears downward, the air ruſhing into the lungs, ſhoots out the cartilaginous rings, and divaricates the branches of the tracheæ, and by them extends and divaricates the ſeveral diviſions of the pulmonary artery and veins, and thereby lengthens and enlarges their cavities. This enlargement of their cavities is very conſiderable, not only upon the ſcore of the addition, which they receive in length thereby, but alſo on account of their divarication; for whereas, when the ribs are depreſſed, and the lungs ſubſide, the blood veſſels are not only contracted, but their branches, which are exceeding numerous approach one another, and lie in juxta poſition, by which their cavities are very much compreſſed and ſtreightned: when the ribs are elevated and the lungs turgid with air, not only the fibres, by which their coats in the oppoſite ſtate were contracted, are extended; but thoſe innumerable veſſels, which lying before in lines almoſt contiguous to one another, compreſſed each other, making an acute angle at their junctures, are divaricated and ſeparated from each other, and make an obtuſe one, whereby their channels are widened.

Thus a paſſage is opened for the blood from the right ventricle of the heart to the left, through the lungs, to which it could not otherwiſe paſs; and the oppoſition, which the blood contained in that ventricle muſt otherwiſe have had made to its conſtriction is taken off, and the ſyſtole thereby facilitated; nor is this all, for the diaſtole being cauſed, as is certainly and demonſtrably the caſe, by the force of the blood ruſhing into the ventricles; this ampliation and extenſion of the pulmonary artery is a ſort of check or counterpoiſe to it, and prevents an endeavour towards two contrary actions at once, which would neceſſarily fruſtrate both: for the heart being a ſpringy and compreſſible body, whoſe proper action, which is contraction, depends upon the influx of certain fluids into its fibres and ſubſtance; and containing beſide a fluid in its ventricles, or great cavities, in one of which is the mouth of this artery, the action of this veſſel muſt in a great meaſure reſemble that of a ſyringe, whoſe extremity is immerſed in water. The enlargement or expanſion of the channels of the artery, anſwering the drawing of the embolus, as the conſtrictive motion of the muſcle of the heart, does the preſſure of the atmoſphere on the ſurface of the water; the one making way for the fluid, and the other forcing it, to flow where the reſiſtance is leaſt. In this ſenſe we may allow a ſort of attraction to the pulmonary artery, depending wholly upon the action of the intercoſtal muſcles, and diaphragm, which we muſt therefore confeſs to be very ſerviceable and inſtrumental in promoting the ſyſtole of the heart. Phil. Tranſ. N° 281. p. 1222.

DIATONIC (*Cycl.*)—The *Diatonic* genus was by the antients divided into two ſpecies: the *molle*, and the *intenſum*. The laſt is in daily practice. It is commonly ſaid to conſiſt of two tones and a ſemi-tone: but, to ſpeak exactly, it conſiſts of a ſemi-tone major, a tone minor, and a tone major. Phil. Tranſ. N° 481. p. 212.

We find it accurately defined by Didymus, in Ptolemy's harmonics publiſhed by Dr. Wallis. Vid. Wallis Oper. vol. 3. p. 92. The numbers by which Didymus expreſſes its intervals, are, $\frac{9}{8} \times \frac{10}{9} \times \frac{16}{15} = \frac{4}{3}$. Ptolemy, indeed, makes the *Diatonicum* intenſum, to be expreſſed by $\frac{10}{9} \times \frac{9}{8} \times \frac{16}{15} = \frac{4}{3}$; but, it is plain, this is only tranſpoſing the tones major and minor, which makes no eſſential difference, nor is it ſufficient to conſtitute a new ſpecies. But the firſt of the before-mentioned ſpecies, the *Diatonicum molle*, has not, till lately, been accurately defined by any author. Its component intervals, according to Dr. Pepuſch, are, the ſemi-tone major, an interval compoſed of two ſemitones minor, and the complement of theſe two to the fourth; which complement is equal to a tone major, and an enharmonic Dieſis. Phil. Tranſ. N° 481. p. 271, 272.

Beſides, the two ſpecies of the *Diatonic* mentioned by Ariſtoxenus and Euclid; Ptolemy, and other antient muſicians, have left us ſeveral different *Diatonic* diviſions of the tetrachord; ſuch are the *Dianotic* of Archytas, of Eratoſthenes, and of Didymus, which laſt agrees perfectly with the truth of muſical proportions. Ptolemy himſelf gives us no leſs than five different *Diatonics*, by the names of *molle*, *tonicum*, *ditonicum*, *intenſum*, *æquabile*. Phil. Tranſ. N° 481. p. 271. See GENUS.

But, except one (the *intenſum*) they are all inconſiſtent with the true theory of muſic; which admits of no numbers, or proportions, but 2, 3, and 5, and ſuch as ariſe from theſe primes. Indeed Ptolemy's tetrachords are ſo miſ-tuned, that Salinas has charged him with having had no ear. Vid. Phil. Tranſ. ibid. p. 267.

DIATONUM, Διατονον, in the the antient muſic, is uſed for the Diatonic genus. See DIATONIC.

DIATRÆTA, a word uſed by Pliny, and other of the antient Romans, to expreſs a ſort of cups and vaſes, which were of great value, and only ſeen at the tables of the great. They were pellucid and colourleſs, and cut into various forms, and were often engraved upon with figures expreſſive of the deeds of honour of the family who poſſeſſed them. The firſt *Diatretæ* were made of pure cryſtal of the rock, and the working of theſe rendered them very expenſive; but afterwards they were made of common white glaſs, and ſunk greatly in their price and value. The antients were very nice in their diſtinctions of the ſeveral kinds of cryſtal. They termed the pureſt and fineſt of all *acentatum*, and the others, which were ſubject to blemiſhes and foulneſſes of ſeveral kinds, they called by names expreſſive of them. There was nothing they ſo much feared in the pieces they ſelected for this work, as what they called an over hardneſs, that is, a brittleneſs, which made the veſſel often fly under the engraver's tool, after it had been formed into ſhape at a great expence: for this reaſon they were cautious of uſing the very brighteſt and cleareſt maſſes; for they often found thoſe ſucceed beſt, which had ſome of thoſe flaws which we call hairs in them. Theſe they thought the tougheſt pieces of cryſtal, and theſe flaws they eaſily concealed among the ſtrokes of their work. See the articles SAL and NUBES.

DIATYPOSIS, Διατυπωσις, in rhetoric, the lively deſcription of a thing, ſetting it, as it were, before the eyes of the audience. Thus Cicero, VII. in Verr. *Ipſe inflammatus ſcelere & furore, in forum venit; ardebant oculi; toto ex ore crudelitas eminebat, &c.*

DIAULION, in antiquity, a deſignation given to a performance on the antient ſtage with the flute alone.

DIAULODROMI, Διαυλοδρομοι, in antiquity, thoſe racers who turned round the meta, or goal, and finiſhed their courſe at the carcer, or place of ſtarting. The *Diaulodromi* always took a ſhort breathing or reſt, when they arrived at the meta, before they ſet out again for the carcer. *Pitiſc.* Lex. Ant. in voc. See CARCER.

DIAULOS, in antiquity, the name of a particular kind of race, wherein the racers always returned to the place from whence they ſtarted, and were called *Diaulodromi*. *Pitiſc.* Lex. Ant. in voc. See DIAULODROMI.

DIAULOS is alſo uſed to ſignify a diſtance of two ſtadia. Id. ibid.

DICE *Marle*, in husbandry. See the article MARLE.

DICERATON, in the writers of medicine, a name given to a collyrium mentioned by Celſus, and thus named from κερας, a horn, burnt hartſhorn being a principal ingredient in it.

DICHORÆUS, in poetry, the foot of a Latin verſe conſiſting of four ſyllables; of which the firſt is long, the next ſhort, the third long, and the laſt ſhort. It is a double *Choræus*, as *cōmprĕbārĕ*.

DICHOTOPHYLLUM, in botany, the name by which Dillenius, and ſeveral others, call the hydroceratophyllum of Vaillant; and ſome other writers, a genus of plants charactered by Linnæus in his genera plantarum under the name of *Ceratophyllon*. *Dillen.* Gen. 3. See CERATOPHYLLON.

DICKER, or DICRE, *Dicra*, in our old writers, a quantity of leather conſiſting of ten hides. *Blount.*

Some derive the word from the Greek δεκα, ten.

We find the word *Dicra* applied to other things beſides leather; thus, *Civitas Glouceſtriæ reddebat* XXXVI Dicras *ferri*, which is interpreted 36 *Dickers* of iron, ten bars to the *Dicre*. *Gale's* Hiſt. Brit. 766. ap. *Blount.*

DICROTUS, in natural hiſtory, a word uſed by the antients to expreſs the deer or ſtag when in its third year's growth. It was called *Nebus* by the antient Greeks in the firſt year, *Puttolea* in the ſecond, *Dicrota* in the third and in the fourth, and all its life afterwards *Ceraſtes*.

DICROTUS, in the medicinal writings of the antients, the epithet given to a peculiar ſort of pulſe, which Dr. Nihill calls very properly in Engliſh the rebounding pulſe. In this kind of pulſe the artery beats as it were double; and it is eſteemed a certain ſign of a future critical hæmorrhage by the noſe. When the rebounding pulſe is perceived at about every thirtieth pulſation, the hæmorrhage uſually follows in about four days after; when it recurs at every ſixteenth pulſation, the hæmorrhage generally follows in three days; when every eighth pulſation, it is to be expected in two days and a half; and, finally, when it recurs at every fourth, third, or ſecond pulſation, or is continual in every one, the hæmorrage is to be expected within four and twenty hours. Sometimes nature runs regularly through all the before-mentioned progreſſions of this critical pulſe from its firſt appearance at every thirtieth ſtroke, to the ſingle pulſation; and in this caſe the hæmorrhage is ſeen gradually approaching, and happens regularly as expected: but ſometimes ſhe haſtens or delays it; and then the pulſe ſhifting in its indications, it cannot be judged of with any certainty; when the artery rebounds upon the finger with great celerity, and very briskly follows the firſt ſtroke, the hæmorrhage is juſt at hand, and will appear on the patient's blowing his noſe.

The quantity of the hæmorrhage may be gueſſed from the ſtrength of the rebound in the pulſe, and as the blood diſcharges itſelf, this ſymptom in the pulſe gradually goes off; and if after the hæmorrhage it ſhould be perceived again, it is a ſign of another criſis of the ſame kind. Finally, when the rebounding of the artery is more evident in one

wriſt than in the other, the blood uſually flows in the greateſt violence from that ſide of the noſe, or that noſtril which is on the ſame ſide with the hand in the artery of which the rebounding has been moſt violent.

DICTORES, in our old writers, is uſed for an arbitrator. *Blount*.

DICTUM, in our old writers, is uſed for an arbitrament or award. *Blount*, in *Dictores*.

DICTUM *de Kenelworth*, an edict or award between king Henry the IIId, and thoſe barons who had been in arms againſt him. It was ſo called becauſe made at Kenelworth caſtle in Warwickſhire, anno 51. Hen. 3. It contained a compoſition of five years rent for the Lands of thoſe who had forfeited them in that rebellion. Id. ibid.

DIDAPPER, a common Engliſh name for the ſmall ſpecies of colymbus or diver, very common in our rivers, and more commonly called the *Dob-chick*. See DOB-CHICK.

DIDAR, among the Arabian authors, the name of the elm. *Ger*. Emac. Ind. 2.

DIDELPHIS, the name by which Linnæus calls the animal called philander by other writers. This creature, in that author's ſyſtem of zoology, is alſo a diſtinct genus of animals, the character of which is their having eight paps placed between the duplicature of the abdomen. *Linnæi* ſyſtema naturæ, p. 36.

DIDYNAMIA, in botany, a claſs of plants, whoſe flowers have two of their male parts or ſtamina of greater efficacy in the action of impregnation of the ſeeds than the others: they are known by the two efficacious ſtamina being always much longer than the others.

The word is formed of the Greek Δις, twice, and Δυναμις, power or efficacy. Of this claſs of plants are thyme, lavender, baſil, *&c.*

This claſs comprehends the plants called by Rivinus *monopetali irregulares*, or plants with flowers of an irregular ſhape, but formed of one leaf; and the plants with labiated or perſonated flowers, according to Tournefort. There are certain general characters which are found in all of this claſs. The perianthium is one leaved, erect, and tubular; it is divided at the end into five ſegments, which are uſually unequal in ſize, and it remains after the flower is fallen. The flower conſiſts of one petal, and ſtands erect: its baſe always contains honey, and ſerves in the place of the nectaria of other flowers. The verge or limb of the flower is uſually ringent or gaping, the upper lip is ſtrait, and the under one broader than the upper, and divided into three ſegments, of which the middle one is the largeſt. The ſtamina are four filaments of a ſubulated ſhape; they are fixed to the tube of the flower, and placed near its back. Two of theſe are uſually longer than the other four. Theſe ſtand near one another, and are placed in the middle: they are all placed in a parallel direction, and rarely exceed the length of the flower. The antheræ are uſually laid under the upper lip of the flowers, and are placed in pairs, joining together near their tops. The germen of the piſtil uſually ſtands above the receptacle or cup; the ſtyle is ſingle and capillary, and is bent in the ſame direction with the ſtamina; it uſually ſtands among them, and a little exceeds them in length; its top alſo is a little crooked, and the ſtigma is commonly emarginated. Many of the genera of this claſs have no fruit, but the ſeeds are contained naked in the cup; and when there is a fruit, it uſually contains two cells. When there is no ſeed-veſſel, the ſeeds are contained in the bottom of the cup, and are four in number; and in ſuch plants as have a ſeed-veſſel, they are uſually more than four, and are always affixed to a ſort of placenta within the capſule.

The flowers of the far greater part of theſe plants ſtand erect, or nearly ſo, making only a ſmall angle with the ſtalk; by this means the antheræ are much better defended from injuries than they otherwiſe would be; and, by means of this poſition, the farina, when diſcharged from the antheræ, naturally falls upon the ſtigma of the piſtil, and is in little danger of being loſt. The characters of this claſs of plants are delivered as general, not particular: moſt of them are found regularly in all the plants of it, but ſome vary in one or other of the particulars, and to this is owing the diſtinction of the ſeveral genera. This is a remarkably natural claſs of plants, not one ſpecies of it deviating from the characters of the reſt; though there are ſome of thoſe plants which have only two ſtamina, which ſeem otherwiſe entitled to a place in it. Such are the pinguicula gratiola, verbena lycopus, and the like. Theſe however cannot be received into it, becauſe the eſſential character of it is that the ſtamina are four in number, two longer and two ſhorter. *Linnæi* Gen. Plant. p. 261.

Linnæus divides this claſs of plants into two general ſeries. The firſt the *gymnoſpermia*, and the ſecond the *angioſpermia*. The firſt of theſe comprehends the labiated plants of Tournefort, and the verticillate plant of Mr. Ray's method, and the other the perſonated plants of Tournefort.

The gymnoſpermia, or verticellate plants, are diſtinguiſhed from the reſt, by having the ſeeds four in number, and ſtanding naked in the cup; and the ſtigma divided into two ſedgments, the lower of which is crooked.

The angioſpermia, or perſonated plants, are diſtinguiſhed from the others, by always having a ſeed veſſel of ſome form, though very various; and, by the ſtigma being obtuſe and various.

Of the firſt kind, or gymnoſpermia, are the galeopſis and ballota, with the like; and, of the ſecond kind, or angioſpermia, are the antirrhinum, &c.

DIEBEL, in ichthyology, a name given by Kentman and others to the chubb or capito. It is properly a ſpecies of the cyprinus. See CAPITO and CYPRINUS.

DIELCYSTINDA, among the antients, a kind of exerciſe performed by boys, who being divided into two parties or ſides, each endeavoured to draw the other over to their ſide, and the party which prevailed gained the victory. *Hoſm.* Lex. in voc.

DIEMERES, in the antient muſic, a word uſed ſometimes alone, and ſometimes joined with the word phorbeia. It expreſſed a ſort of bandage, uſed by the antients, to tie up the lower lip in playing on the pipe. The other kind of phorbeia conſiſted only of one perpendicular piece, which went down the cheek, and one tranſverſe one which covered the whole mouth, but had a hole cut into it, to admit the mouth-piece of the pipe. See PHORBEIA.

DIESIS *(Cycl.)*—Ariſtoxenus, and other antient muſicians, often mention the tone as divided into four parts, and the ſemitone into two; thereby making ten diviſions or *dieſes* in the fourth. And this is true, if we conſider theſe ſounds in one tenſion; that is either aſcending or deſcending: but accurately ſpeaking, when we conſider all the *dieſes* or diviſions of a fourth, both aſcending and deſcending we ſhall find thirteen; five to each tone, and three to the ſemi-tone major. But then it is to be obſerved, that ſome of theſe diviſions will be leſs than the enharmonic *Dieſis*: for, if we divide the ſemitone major, into the ſemi-tone minor, and enharmonic *Dieſis*, aſcending; for inſtance, E, ♮ E, F, and then divide in like manner deſcending F, b F, E, we ſhall have the ſemi-tone major divided into three parts: thus, E, b F, ♮ E, F; where the interval between b F and ♮ E, is leſs than the enharmonic *Dieſis* between E & b F, or between ♮ E & F. Phil. Tranſ. Nº 481. p. 273.

But if we ſuppoſe theſe ſmall intervals equal, by increaſing the leaſt diviſion, and diminiſhing the true enharmonic *Dieſis*, we ſhall then have a fourth divided into thirteen equal parts; and this naturally leads us to divide the octave into thirty-one equal parts, which gives us the celebrated temperament of Huygens. See TEMPERAMENT.

The logarithm or meaſure of the octave $\frac{2}{1}$ being 1. 000,000, the meaſure of the *Dieſis* $\frac{128}{125}$ will be 0. 034215. Hence 29 *Dieſes* will be nearly equal to the octave. *Euler*. Tentam. Nov. Theor. Muſc. p. 106. See INTERVAL.

DIEXAHAEDRIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek δὶς, twice ἓξ ſix and ἕδρα ſide. The bodies of this genus are ſpars, compoſed of twice ſix planes, being formed of two hexædral pyramids, joined baſe to baſe, without any intermediate column. Of this genus there are only two known ſpecies. 1. One with long, narrow, and ſharp pointed pyramids, found in lamb's cave on mendip hills: and 2. one with long, broad, and obtuſe pyramids: this is found in the mine of Goſſelar in Saxony, and in many of the mines of the hart's foreſt. *Hill*'s hiſt. of Foſſils, p. 213.

DIEXODUS, Διέξοδος, in rhetoric, is uſed for digreſſion.

DIFFARREATION, *Diffarreatio*, in antiquity, a religious ceremony, uſed upon occaſion of obtaining a divorce. It was directly oppoſed to the ceremony of contracting marriage, called *Confarreation*. *Pitiſc*. Lex. Ant. in voc. See CONFARREATION, *Cycl.*

DIFFERENCE (*Cycl.*) — It was a fundamental principle among the antient geometers that the *difference* of any two unequal quantities, by which the greater exceeds the leſſer, may be added to itſelf, till it ſhall exceed any propoſed finite quantity of the ſame kind. This principle ſeems inconſiſtent with the ſuppoſition of an infinitely ſmall quantity or difference, which added to itſelf any number of times, is never to be ſuppoſed to become equal to any finite quantity whatſoever; which is the foundation of the modern method of infiniteſimals. However, this laſt may, with proper caution, be made uſeful and accurate. Vid. *Maclaurin*'s fluxions Introd. p. 4. and art. 495. ſeq.

DIGASTRICUS (*Cycl.*) — The *Digaſtric* muſcle, according to Winſlow, is a ſmall long muſcle ſituated laterally between the whole baſis of the jaw and the throat. It is fleſhy at both the extremities and tendinous in the middle, as if it conſiſted of two ſmall muſcles joined endwiſe by a tendon. It is fixed by one fleſhy extremity in the ſulcus of the maſtoide apophyſis, and from thence runs forward inclining to the os hyoides, where the firſt fleſhy body ends in a round tendon, which is connected to the lateral part and root of the cornua of that bone by a kind of aponeurotic ligament, and not by a pulley, as appears at firſt ſight, becauſe of its paſſage by the extremity of the muſculus ſtylogloſſus. Here

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the tendon is incurvated, and preſently ends in the other fleſhy body, which is fixed immediately above the internal labium of the baſis of the chin, near the ſymphyſis, in a ſmall unequal depreſſion. *Winſlow*'s anatomy, p. 254.

The *Digaſtric* muſcles, according to Mr. Monro, do not ſolely pull the lower jaw down, but ſerve to draw up the os hyoides, and parts annexed to it, in deglutition. We have an account of the ſituation and uſes of theſe muſcles, by this learned profeſſor, in the Med. Eſſ. Edinb. vol. 1. art. 11.

DIGESTION (*Cycl.*)—Some ſuppoſe *Digeſtion* owing to gentle heat and motion. By this heat and motion the texture of the nouriſhment is changed in the bodies of animals; and then, the conſtituent ſolid parts are endued with peculiar attractive powers of certain magnitudes, by which they draw out of the fluids moving through them, like parts in certain quantities, and thereby preſerve their forms and juſt magnitudes. See Dr. *Bryan Robinſon* of the anim. œcon.

Others think *digeſtion* performed by a violent trituration of the ſtomach; but ſeveral obſervations ſeem to contradict this opinion. See TRITURATION.

DIGESTION, in chemiſtry—The chemiſts of late years have too much given into the more elaborate and forced proceſſes, and neglected the more natural and eaſy ones. Among theſe latter is *Digeſtion*; a proceſs ſo eaſy, that it requires ſcarce any quality in the operator but patience, and yet will do ſuch things as all the elaborate proceſſes of that art can never arrive at without it. There is ſcarce a proceſs that has more puzzled the chemiſts of an age or two ago, than the volatilizing ſalt of tartar; yet Langelot aſſures us, that after uſing all the caution in the common proceſſes that an earneſt deſire of ſucceſs could inſpire him with, he failed in them all; till trying the effect of a long *Digeſtion*, he ſucceeded ſo well in the firſt attempt, that he converted almoſt the whole ſalt into a pure white volatile ſubſtance, leaving only a few inſipid earthy fæces behind.

Another great uſe of *Digeſtion* is the duly preparing the eſſences of mineral ſulphurs; the ſtony ſea plants, which greatly reſemble the nature of foſſils, are alſo better treated by this proceſs than by any other. Tartariſed ſpirit of wine, receiving a very high tincture from red coral, after a long *Digeſtion*, in any diſtilled vegetable oil, though it will not in the common way be at all coloured by it. Phil. Tranſ. N° 87. See CORAL,

DIGGING, in mineralogy, a term appropriated by the miners to expreſs that penetrating into the earth, where they have the ore before them, and every ſtroke of the tools turns to account. They appropriated the word to this ſenſe, expreſſing the random openings, which they make in ſearch of mines, by the word *hatching*, or *eſſay-hatching*. See the article TRACING *of mines*.

When the eſſay hatches have been opened ſo long, that the orifice of the mine or load is found, the opening which has led to it, loſes its name of eſſay-hatch, and is called a ſhaft or metal-hatch; this is to be ſunk down about a fathom, and then they leave a ſquare ſpace, called a *ſhamble*, and ſo continue ſinking from caſt to caſt; that is, as high as a man can conveniently throw up the ore with a ſhovel, till the load is found to grow ſmall, or elſe to degenerate into ſome unprofitable ſubſtance, or weed, as they metaphorically expreſs it. The degeneracy of the ore is ſoon perceived, by the finding mundick or marchaſite growing more plentiful among it. This is a ſulphureous mineral, of a yellow, whitiſh, or greeniſh colour, and is very troubleſome to the Corniſh miners. The other unprofitable ſubſtances found in the place of the ore, or mixed in large quantities with it, where it degenerates, are daze, which is white, black, or yellowiſh; *iron mould*, which is black or ruſty; *caul*, which is red; *gliſter*, which is blood-red, or black, is alſo another degeneracy of the ore. Theſe are the common names given by the miners to various foſſils, explained under their ſeveral heads, and theſe are the marks by which they know the vein is almoſt exhauſted in that part, and will not long be worth digging.

In this caſe, they begin to drive either eaſt or weſt, as the goodneſs of the land, or the convenience of the hill, unite. The drift or opening, on this occaſion, is three foot over, and ſeven foot high, ſo that a man may conveniently ſtand and work: but in caſe the land is not broad enough of itſelf, as ſome ſcarce are half a foot; then they break down the deads firſt on the north ſide of the land, for the greater conveniency of the right arm in working, and then they begin to rip the load itſelf; by the term deads, they mean that part of the ſhelf, which contains no metal, but encloſes the load or vein as a wall between two rocks.

The inſtruments commonly uſed in mines with us, and that ſerve for ripping the lands are the *beele*, or as it is called in Cornwall the *tubber*. This is a weapon of eight or ten pounds weight, well ſteeled and ſharpened at each end, ending in a point each way, and having a hole in the middle: this will laſt half a year, but muſt be new ſharpened every fortnight. The ſecond inſtrument is a *ſledge*; this is uſually made from ten to twenty pounds weight; and will laſt ſeven years, if new ordered once in three or four months. Beſide theſe, they have *gadds*, or wedges; theſe are of about two pounds weight; they are made four ſquare, and well ſteeled at the point, and they muſt have ladders and wheel-barrows to carry the deads, and the ore out of the adits to the ſhambles. The general proportion of the workmen in Cornwall is this, two ſhovel-men and three beele-men in a drift; theſe are as many as the drift will contain without ſtanding in one another's way. The beele-men rip the deads and the ore, and the ſhovel-men carry it off and land it, by caſting it up from one of the ſhambles to another all the way up; in ſome places they ſave the trouble of this caſting it to the ſhambles by a winder and two buckets; theſe are ſo contrived, that one goes up as the other comes down, and they are filled and emptied with great eaſe. Philoſ. Tranſ. N° 69.

DIGITALIS, *Fox-glove*, in botany, the name of a genus of plants, the characters of which are theſe: the flower conſiſts of one leaf, of a tubular form, very wide, open at the mouth, and ſeeming bilabiated. The piſtil ariſes from the cup, and is fixed in the manner of a nail into the hinder-part of the flower; this afterwards ripens into a fruit, or capſule, of an oval, pointed figure, divided into two cells, and uſually containing very ſmall ſeeds. The ſpecies of *Fox-glove* enumerated by Mr. Tournefort are theſe. 1. The purple *Fox-glove*. 2. The pale red *Fox-glove*. 3. The white *Fox-glove*, with large flowers. 4. The ſmall purple Spaniſh *Fox-glove*. 5. The oriental *Fox-glove*, called by authors ſeſamum. 6. The dusky ſeeded oriental *Fox-glove*. 7. The trifid leaved oriental *Fox-glove*, with ſnow white flowers. 8. The ſmalleſt *Fox-glove*, called by many authors *Gratiola*. 9. The flax leaved Portugal marſh *Fox-glove*. 10. The large flowered yellow *Fox-glove*. 11. The great *Fox-glove*, with ſmall pale yellow flowers. 12. The leſſer *Fox-glove* with ſmall yellow flowers. 13. The ſmall narrow leaved yellow *Fox-glove*. 14. The broad leaved *Fox-glove*, with a ferrugineous flower. 15. The broad leaved *Fox-glove*, with a ſmall ferruginous flower. 16. The middle *Fox-glove*, with a yellowiſh flower. 17. The narrow leaved *Fox-glove*, with a ferruginous flower. 18. The narrow leaved purple *Fox-glove*. 19. The narrow leaved yellow Spaniſh *Fox-glove*. 20. The narrow leaved black flowered Spaniſh *Fox-glove*. See FOX-*glove*.

DIGITATED *Leaf*, among botaniſts. See LEAF.

DIGITUS *Veneris*, *Venus Finger*, in botany, a name by which ſome authors have called the nymphæa, or water lilly. *Ger.* Emac. Ind. 2.

DIJAMBUS, in poetry, the foot of a latin verſe of four ſyllables; it is compounded of two *iambics*, as fĕvĕrĭtās.

DIIPOLIA, Διιπολεια, in antiquity, an Athenian feſtival, celebrated in honour of *Jupiter Polieus*, or protector of the city. For the ceremonies obſerved at this ſolemnity, ſee *Potter*'s Archæol. Græc. l. 2. c. 20. t. 1. p. 381.

DILATATOR *Poſticus Urethræ*, in anatomy, a name given by Heiſter, and ſome others, to what is ſuppoſed to be a peculiar muſcle by many, and called alſo *levator ſextus ani*, and by ſome other names, though it is really only a proceſs of the ſphincter ani running into the perinæum. See SPHINCTER.

DILE, in Botany, a name by which ſome authors have called the iſatis or woad. *Ger.* Emac. Ind. 2.

DILIGENZA, in the Italian muſic, is uſed for a ſoft or ſweet manner of ſinging or playing.

DILL, in botany, &c. See ANETHUM.

DILLENIA, in Botany, the name of a genus of plants, the characters of which are theſe: the perianthium is compoſed of five leaves, which are large, roundiſh, hollow, and of a coriaceous texture, and remain when the flower is fallen: the flower is compoſed of five roundiſh hollow petals; theſe alſo are large and of a coriaceous texture. The ſtamina are numerous filaments forming a ſort of globe, the antheræ are oblong and erect. The germina are about twenty in number, they are of an oval oblong figure, and pointed, they are ſomewhat compreſſed, and adhere together by their inner ſurfaces: there are no ſtyles. The ſtigmata are large and pointed, and are diſpoſed in form of a ſtar; the fruit is roundiſh, and is covered with a number of capſules, divided by ſo many furrows. The ſeeds are numerous and ſmall. *Linnæi* Gen. Plant. N° 253. Hort. Mal. vol. 3. 38, 39.

DILICTUM, a term uſed by Agricola, to expreſs a brine, made by pouring water upon ſand, ſtones, earth, &c. that had been before ſtrongly impregnated with Sea ſalt; from this brine, a ſalt, for the uſe of the table, was made by evaporation in his time, and is ſo ſtill in many parts of the world. At Junthall in Germany they have a ſalt work of this kind, where they make at the rate of eight hundred loaves of ſalt in a week, each loaf weighing four hundred weight. Here, and at ſeveral other places in the Upper Auſtria, there are deep mines, in which they dig mud and earth ſtrongly impregnated with common ſalt. This ſaline earth they break into lumps, of a proper ſize, and caſt them into pits in the bottom of the mines, where they cover them with water; and this, in a few weeks ſtanding, becomes a brine ſaturated to the higheſt degree, every pound of it containing ſix ounces of ſalt. This brine is conveyed thence by pipes into ciſterns, and is boiled in iron pans into a white ſalt. In other places, as at Roche, the

water is directed to pass among earths thus impregnated, and from thence becomes saturated with salt in the same manner, and is afterwards boiled in the common way. *Hoffman* de Salin. Hallens, c. 2. and 4. Obs. Phys. Chym. l. 2. obs. 16. The sand of the sea is also in some places used as a substance to make salt from. There are works of this kind on the coast of Normandy, where a brine is made from the sand, and evaporated at so small an expence, that it is worth their while to export it to England and other countries. We had formerly some works of this kind in England, as at Wirewater, and some other places in Lancashire and Westmoreland, where pit-coal being scarce, they boiled it with turf fires; but since the works of the brine salt, and purified rock salt, have succeeded so happily with us: these are all laid aside, except some inconsiderable ones in Lancashire. These are near Ulverstone, and the sand from which they make their brine there, is extracted from the flat sandy shores, which are only covered with water in the highest tides, which flow two or three days before, and three or four days after the new and full moon; for those parts of the sand which are overflowed by the neap tides are seldom sufficiently dried, and are at too great a distance from the salterns.

This sand they collect in flats and washes, or in parts of the sands, which are perfectly plain, and in little hollows, where the sea water is left, and either sinks into the sand, or is dried up by the heat of the sun, and leaves the salt behind. This is only collected in dry weather, and at such times when the sea water has been exhaled from it by the sun, and there have been no rains afterwards to wash the salt out of it. They dig a pit adjoining to the saltern eighteen foot long, three broad, and one deep; the bottom of this they cover with straw, or rushes, and then fill it up with sand collected in this manner; they pour upon this sea water, and this imbibing the salt from the sand is filtered through the straw or rushes, and runs clear through a pipe at the bottom. *Brownrig* of Salt, N° 136.

DIMACHÆ, in antiquity, a kind of horsemen, first instituted by Alexander. Their armour was lighter than that of the infantry, and at the same time heavier than that used by horsemen, so that they could act as horse or foot as occasion required. *Pitisc.* Lex. Ant. in voc.

DIMACHÆRUS, Διμαχαιρος, in antiquity, a gladiator who fought with two swords. Vid. Hist. Acad. Inscript. T. 2. p. 374. seq.

DIMETIENT, in geometry, is sometimes used for *Diameter*. *Harris*, in voc.

DIMINISHED *interval*, in music, is applied to such as are lessened by a semi-tone minor. Thus from C ♮ to E being a third minor, if E be lowered by a semi-tone minor, we shall have E b, and then from C ♮ to E b is called a *diminished* third, in the language of practical musicians, and occurs frequently in their works. But strictly speaking, in this case, the note E must be lowered more than a semi-tone minor, as shall be shewn farther on.

DIMINISHED *Second* is a semi-tone major, lessened by a semi-tone minor. See the articles INTERVAL and SECOND.

DIMINISHED *Third*, by some called *defective third*, is properly a third minor lessened by a semi-tone minor. But among practical musicians, it commonly signifies an interval equal to two semi-tones major. And this they confound with the former; but there is a difference between them, equal to the difference between a tone-major and minor, that is, a comma. The first mentioned of these *diminished* thirds, will be expressed by $\frac{144}{125} = \frac{6}{5} : \frac{25}{24}$, and is equal to the tone major and enharmonic diesis; for $\frac{144}{125} = \frac{9}{8} \times \frac{128}{125}$. The second *diminished* third will be expressed by, $\frac{256}{225} = \frac{16}{15} \times \frac{16}{15}$, which is a comma less than the former. See the table in the article INTERVAL.

DIMINISHED *Fourth*. See the table in the article INTERVAL.

The *diminished* fourth often occurs in practice, as from C to G ♮ descending; and sometimes, though more rarely from G ♮ to C ascending.

DIMINISHED *Fifth*, in music, is less than the true fifth by a semi-tone minor, and is therefore equal to two lesser thirds.

Practitioners often confound the *diminished* fifth, with the semi-diapente, or false fifth, which is a comma less. See INTERVAL.

DIMINISHED *Sixth*.—This interval, according to Ozanam, contains two tones and three semi-tones major; or a fourth and diminished third; or a *diminished* fourth and third minor. Thus from C ♮ to A b is a *diminished* sixth.

But, as there are two *diminished* thirds, so there may be as many *diminished* sixths; these being the complements of the former to the octave. One of these *diminished* sixths will be expressed by $\frac{1024}{675} = \frac{4}{3} \times \frac{256}{225}$, and this is a semi-tone major more than the semi-diapente: the other *diminished* sixth will be $\frac{192}{125} = \frac{4}{3} \times \frac{144}{125}$, which is a semi-tone minor less than the flat sixth. Practitioners confound these two; and, in effect, in temperate scales they coincide, as do all other intervals, differing only by a comma. See TEMPERAMENT.

DIMINISHED *Seventh*, is of two kinds, differing by a comma. See the table in the article INTERVAL.

That *diminished* seventh, which is the complement of the superfluous second to the octave, is the only one in use. It is a semi-tone major more than the sixth minor, as from C ♮ to B b.

DIMINISHED *Octave*, is a semi-tone minor less than the octave, as from C to *c* b. It occurs sometimes in the basses of instrumental pieces of music. See INTERVAL.

DIMORPHOTHECA, in Botany, a name given by Vaillant to a genus of plants, which Linnæus makes the same with the calendula. The characters are these: the common cup is simple, erect, and divided into several parts. The flower is of the compound radiated kind, its disk is composed of a great number of hermaphrodite floscules, and its radius of a vast number of female flowers: these are very long, and are of the same number with the segments of the cup. The hermaphrodite floscules are tubular, and lightly divided into five segments at the edge, and are of the length of the cup. The female flowers in the radius are of a ligulated form, and divided into three denticulations at the end; they are also hairy at the base, and have no ribs. The stamina in the hermaphrodite flowers are five filaments, very short and slender, and the antheræ are cylindric, tubular, and of the length of the flower. The pistill in the hermaphrodite flowers has its germen standing below the flower. The style is capillary, and is scarcely of the length of the stamina; and the stigma is obtuse, bifid, and erect. In the female flowers, the germen of the pistill is oblong and of a triangular form; the style is capillary, and of the length of the stamina; and the stigmata are two, and are oblong, pointed, and reflex. There is no capsule for the seeds but the cup becomes roundish and depressed, and closes at the summit. There are no seeds from the central flowers of the disk; but those near the margin, have each a single seed after them which is membranaceous, and surrounded with a cordated compressed substance; they are of an oblong figure, broader at the top than elsewhere, and probably are steril.

The seeds which follow the female flowers are single, larger, and of an oblong figure; they are crooked, and approach to a somewhat triangular form, and are externally marked with a sort of figure of a plant in a longitudinal direction. The receptacle is naked and flat. *Linnæi* Gen. Plant. p. 419.

DINUS, in medicine, according to some, is the name of a disease, called more usually *Vertigo*. See VERTIGO.

DIOCALLIA, in Botany, a name by which Apuleius and some other authors have called the common sweet chamomile. *Ger.* Emac. Ind. 2.

DIOCLEIA, Διοκλεια, in antiquity, a solemnity kept in the spring at Megara, in memory of the Athenian hero Diocles, who died in the defence of the youth he loved. *Pott.* Archæol. Græc. l. 2. c. 20.

DIOCTAHÆDRIA, in natural history the name of a genus of spars. The word is derived from the Greek δις twice, οκτω eight, and εδρα a side. The bodies of this genus are spars composed of twice eight planes, or two octangular pyramids joined base to base, without any intermediate column. Of this genus there are three known species. 1. One with long pyramids, which is found in the mines of Rammelsberg in the Hartz forest in Germany, and no where else, so far as is yet known. 2. One with short and sharp pointed pyramids found in many of the mines of the Hartz forest, and sometimes tinged with the colours of the gemms. And 3. One with short and obtuse pyramids, which is found in the mines of Cornwall, and lodged in the cetton stone of Rutland. *Hill*'s Hist. of of Foss. p. 211.

DIODIA, in Botany, the name of a genus of plants. The characters of which are these: the perianthium consists of two leaves, of an oval figure, equal in size, and placed upon the germen, these remain when the flower is fallen. The flower is of the one-leaved labiated kind; its tube is slender and longer than the cup; its upper lip is erect and bifid, and the lower lip is expanded, and divided into two pointed segments. The stamina are four filaments of the thickness of a bristle; and two of these, which are opposite to one another, are somewhat shorter than the others. The antheræ are oblong, and versatile. The germen of the pistil is roundish, but in some degree four cornered, this stands under the cup of the flower. The style is capillary, and of the length of the stamina, and the stigma is bifid. The fruit is a capsule, of an oval figure, with four corners, so as to appear square, and is crowned with the cup grown larger; this is composed of two valves, and contains two cells; the seeds are single, of an oval oblong figure, and convex on one side, and plain on the other. *Linnæi*, Gen. Plant. p. 291.

DIOECESIS, Διοικησις, among the Romans, a præfecture of several provinces joined together, under the same governor, called *Præfectus*. *Hoffm.* Lex. in voc. See PRÆFECT and DIOCESE, *Cycl.*

DIONYSIACA, (*Cycl.*) in antiquity, was also a designation given to plays and all manner of sports acted on the stage; because playhouses were dedicated to Dionysius, i. e. Bacchus and Venus, as being the deities of sports and pleasure. *Potter*, Archæol. Græc. l. 1. c. 8. t. 1. p. 41.

DIONYSIAS *Lapis*, in natural history, the name of a stone described by Pliny, and some other of the antients, as a black

stone

ſtone variagated with red ſpots. There are ſome fabulous accounts recorded of its virtues, ſuch as its preventing drunkenneſs, and giving water the taſte of wine. Some of the writers of the middle age have attributed many other virtues to the ſtone of this name; but they ſomewhat deviate from Pliny's account in their deſcription of it: they ſay it is of a ferrugineous colour variegated with white, and that it is found only in the Eaſt-Indies; theſe are too ſhort deſcriptions to be certain what ſtone they were intended for. *Plin.* l. 37. c. 10. *Hofm.* Lex. in voc.

DIOECIA, in Botany, a claſs of plants which have the male and female parts, not in the ſame, but in different flowers, and thoſe not on the ſame individual, but on different plants of the ſame ſpecies; either of which, though they are called the male and female plants, from their thus carrying the ſeparate male and female flowers, might have ariſen from the ſame ſeed.

The word is formed of the Greek δὶς twice, and οἶκος habitation. Among the plants of this claſs are the willow, miſletoe, hemp, ſpinach, &c.

All the plants of this claſs are in the different individuals, diſtinctly males and females; and thence in every ſpecies of this claſs. There is a male and female plant, which in the time of flowering appear very different from one another. The male plants, as well as the others, growing from the ſeeds of the ſame individual female plant: and it is found, that the female plants of this claſs never produce perfect ſeeds, or ſuch as can yield plants from ſowing, unleſs there be a male plant of the ſame ſpecies near them at the time of their flowering. It is obſerved in ſome of the ſpecies of this claſs, that though in general the plants raiſed from the ſeeds are ſome male and others female ſeparately; yet there are ſome which are hermaphrodites, or have the two ſexes conjoined. It is a curious obſervation, that there are no ſeparate male and female plants in the claſſes of the aſperifoliate or ſtellate plants, nor in the umbelliferous claſs, or that of the didynamia, tetradynamia, monadelphia, diadelphia, or ſyngeneſia. The reaſon of which appears very evidently, from an obſervation of the conduct of the fructification in thoſe claſſes. *Linnæi* Gen. Plant. p. 470.

DIOMEDIS *Avis*, in Zoology, the name of a bird of the web footed kind, with a ſlender beak, hooked at the end, and with its hinder toe not connected by the membrane that joins the reſt. It is of the ſize of a common hen, but its neck and legs are much longer: its colour is a dusky, and ſomewhat greyiſh brown, and under the belly there is more or leſs white: its beak is of a fine red, or in ſome of a yellowiſh colour, with a black end. It is found in the Inſula Diomedea, now called Tremiti, in the Adriatic Sea, and is ſaid to be peculiar to that place.

DIOPTRA, among the antients, an inſtrument invented by Hipparchus, which ſerved for ſeveral uſes, as to level water; to take the height of towers, or places at a diſtance; to determine the places, magnitudes, and diſtances of the ſtars. *Hofm.* Lex. in voc.

DIORTHOSIS, in ſurgery, an operation, by which crooked or diſtorted members, are made even, and reſtored to their primitive and regular ſhape.

DIOSCOREA, in Botany, the name of a genus of plants, the characters of which are theſe: it produces ſeparate male and female flowers; the cup is a one leaved perianthium, of a bell like ſhape, divided into ſix lanceolated ſegments, which expand at the top; there is no other flower but this cup. The ſtamina are ſix very ſhort capillary filaments, with ſimple antheræ. In the female flowers, the cup is the ſame as in the male, and there are no petals. The piſtil has a ſmall trigonal germen, from which ariſe three ſtyles of a ſimple ſtructure, terminated by ſimple ſtigmata. The fruit is a large triangular capſule, which has three cells, and is compoſed of three valves. The ſeeds are two in each cell, and they are compreſſed, and have a membranaceous ring. Linnæus obſerves, that he could never trace out the cup, as Plumier deſcribes it in the dried ſpecimens. *Linnæi* Gen. Pl. p. 479. *Plumier* Gen. 26.

DIOSCURIA, Διοσκουρια, in antiquity, a feſtival in honour of the Διοσκουροι, or Caſtor and Pollux, who were reputed to be the ſons of Jupiter. It was obſerved by the Cyrenæans, but more eſpecially by the Spartans, whoſe country was honoured by the birth of theſe heroes. The ſolemnity was full of mirth, being a time wherein they ſhared plentifully of the gifts of Bacchus, and diverted themſelves with ſports, of which wreſtling matches always made a part. *Potter*, Archæol. Græc. l. 2. c. 20. T. 1. p. 384.

DIOSPIROS, in Botany, a name given by Pliny, and ſome other authors, to the plant called *Lacryma Jobi*, or Job's tears. *Ger.* Emac. Ind. 2.

DIOSPOROS, in Botany, a name given alſo by ſome of the antients to the lithoſpernum or gromwell; ſome chuſe to write it *Dioſpyros*, but this ſeems erroneous. The plain derivation of the word, being from the Greek Διὸς σπορος, the ſeed of Jupiter. It ſeems to have obtained this name from its beauty and hardneſs. *Pliny*, l. 26.

DIOSPYROS, in Botany, the name by which Linnæus calls the Guiacana, of Tournefort and others. *Linnæi* Gen. Pl. p. 166. See GUIACANA.

DIOSPYRUM, in Botany, a name by which ſome authors have called the milium ſolis or gromwell. *Ger.* Emac. Ind. 2.

DIOTA, among chymiſts, a term uſed for a circulating or double veſſel.

DIPHRIS, a ſtone mentioned by the antient writers; and ſaid, by Pliny, to be of two kinds, the one black, the other white; and that theſe carried each of them the mark of one of the ſexes, deſcribed by a line of the oppoſite colours: they were therefore called the male and female: the white was called the male, and had the character of the male ſex figured in a black line, the other the female; and had the marks of that ſex deſcribed by a white one: we know no ſuch ſtones at this time.

DIPHTHERA, Διφθερα, among the antients, a garment made of ſkins, and worn only by ſhepherds and country labourers. *Hofm.* Lex. in voc.

DIPHYES, in natural hiſtory, a name given by ſome authors, to a kind of ſtone, which repreſents both the male and female parts of generation of the human ſpecies. We have ſtones which repreſent the figures of ſhells, becauſe they have been formed in them: and nothing can be more proper than the calling them by the name of the ſhell, from which they borrow their figure; but this is not to be ſuppoſed the caſe in regard to this ſtone, which has nothing to do with thoſe parts in its formation, but owes its figures merely to the accidental conformation of the hinge and protuberances of a ſhell, in which it has been formed. We have a ſpecies of chama, whoſe external form at the mouth repreſents the female pudenda; but the figure of this ſtone is owing to the internal ſhape of the ſhell, in which it has been caſt. This is an unknown ſpecies of concha anomia, which has ſuch ridges on one ſhell, and ſuch cavities in the other, that the ſtone caſt or moulded in it, has on one ſide the figure of the female pudenda, and on the other of the male: it is uſually of a dusky brown colour, and of a ferrugineous ſubſtance; as the ſame ſhell may, however, have received in different places different ſubſtances into its cavity, all which would neceſſarily be of this form, we hear, among authors, of ſome black, and ſome white ſtones of this kind. Authors have treated of this ſtone in a very idle and fabulous manner, but this is its true hiſtory.

DIPLASIASMUS, in medicine, a reduplication of diſeaſes.

Diplaſiaſmus is alſo uſed for two muſcles of the arm, which ſerve to turn it about. *Blancard.*

DIPLOIS, Διπλοις, in antiquity, a double *pallium*, or cloak, worn chiefly by the *Cynics*. *Hofm.* Lex. in voc.

DIPONDIUS, in the ſcripture language, is uſed by St. Luke [a], to ſignify a certain coin, which was of very little value. Our tranſlation of the paſſage is, *are not two ſparrows ſold for two farthings?* In St. *Matthew* [b], who relates the ſame thing, we read, *Are not two ſparrows ſold for a farthing?* The Greek reads *Aſſarion* inſtead of *As*. Now *Aſſarion*, as ſome ſay, was worth half an *As*, that is to ſay, four French deniers and $\frac{1}{8}$: and, according to others, two deniers and $\frac{5}{12}$. *Dipondius* ſeems rather to ſignify half an *As*. *Calmet*, Diction. Bibl. [a *Luke* xii. 6. b *Matt.* x. 29.]

Dr. Arbuthnot differs in opinion from the author laſt quoted. He ſays, that this coin was at firſt *libralis*, or of a pound weight, and even when diminiſhed it retained the name of *libella*. So that *Dipondius* denoted two Aſſes. *Arbuth.* tables of antient coins, &c. c. 3.

DIPPING, (*Cycl.*) in mineralogy, a term uſed to expreſs the deviation of the veins of ore, from that regular and ſtrait line, in which they uſually run. A great deal of the skill of the miners conſiſts in the underſtanding this dipping of the veins, and knowing how to manage in it. In Cornwall they have this general rule to guide them in this reſpect: moſt of their tin loads, which run from eaſt to weſt, conſtantly dip towards the north. Sometimes they underlie; that is, they ſlope down toward the north three foot in eight perpendicular. This muſt carefully be obſerved by the miners, that they may exactly know where to make their air ſhafts when occaſion requires; yet, in the higher mountains of Dartmaer there are ſome conſiderable loads, which run north and ſouth: theſe always underlie toward the eaſt.

Four or five loads may run nearly parallel to each other in the ſame hill; and yet, which is rare, they may meet all together in one hatch, as it were a knot, which well tins the place, and ſo ſeparate again, and keep their former diſtances. Phil. Tranſ. N° 69.

DIPSACUS, *Teaſell*, in the Linnæan ſyſtem of Botany, makes a diſtinct genus of plants; the characters of which are theſe: the calyx is a common perianthium, containing many flowers, and compoſed of ſeveral ſlender little leaves, placed round the receptacle, and longer than the flowers. The flower is formed of one leaf, or petal, the whole making a ſtrait tube, divided into four ſegments; at the extremity all placed erect, and the outer one larger and more pointed than the reſt. The ſtamina are four capillary filaments longer than the flower. The antheræ are laid cloſely on them. The germen of the piſtil is placed below the proper receptacle of the flower; the ſtyle is ſlender, and of the length of the flower, and the ſtigma is ſingle. The fruit is one large and common receptacle, of a conic form, made up of the leaves of the cups longer than

thoſe of the flowers, and ſeparating the flowers one from another. The ſeeds are ſingle, oblong, and ſomewhat cubic in figure, and are crowned with a marginaceous rim. *Linnæi* Gen. Plant. p. 22.

The DIPSACUS, according to Tournefort, is characterized thus: the flower is of the floſculous kind, being compoſed of ſeveral ſmall floſcules, collected into a kind of a honey-comb-like ſtructure; the head is compoſed of ſeveral imbricated leaves, and theſe are fixed to an axis, and laid like ſcales over one another. The floſcules ariſe from the alæ of theſe, and are divided into many ſegments at their ends; theſe are placed on the coronated end of an embryo, which afterwards becomes a ſtriated ſeed.

The ſpecies of *Dipſacus* enumerated by Mr. Tournefort are theſe. 1. The cultivated great *Dipſacus*. 2. The great wild *Dipſacus*. 3. The jagged leaved *Dipſacus*. 4. The four leaved giant *Dipſacus*, with ſmooth ſcabious like leaves, and a pear faſhioned head: and 5. The Indian great *Dipſacus*, with numerous heads. *Tourn.* Inſt. p. 466.

The leaves of the common wild *Teaſell* dried, and given in powder, or infuſion, are a very powerful remedy againſt flatus's and crudities of the ſtomach. There is alſo another, though ſomewhat whimſical uſe, for which this plant is become famous among the country people. If the heads are opened longitudinally about September or October, there is generally found a ſmall worm in them: one of theſe only is found in each head, whence naturaliſts have named it the *vermis ſolitarius dipſaci*. They collect three, five, or ſeven of theſe, always obſerving to make it an odd number, and ſealing them up in a quill, give them to be worn as an amulet for the cure of agues. Faith has wrought ſo many cures for them, that they are in many parts of the kingdom of much higher reputation than the bark.

DIPSACUS, in medicine, according to ſome, is the ſame with a Diabetes. *Caſt.* Lex. Med. in voc. *Diabetes*. See DIABETES.

DIPSAS, a ſort of ſerpent, the biting whereof produces ſuch a thirſt as proves mortal; whence it is called *Dipſas*, which in Greek ſignifies thirſty. In Latin it is called ſitula, a pail. Moſes ſpeaks of it in Deut. viii. 15.

The Hebrew word *tzimaon* anſwers very well to the Greek *Dipſas*, and expreſſes the thirſt occaſioned by the biting of this ſerpent. Some by the Hebrew *tzimaon* underſtand a deſart or dry place. *Calmet*, Diction. Bibl.

DIPYRENON, in ſurgery, the name of a probe, with a double button at the end, reſembling two ſmall berries growing together.

DIRECTION (*Cycl.*)—*Quantity of* DIRECTION, in mechanics, is uſed for the product of the velocity of the common center of gravity of a ſyſtem of bodies, by the ſum of their maſſes.

In the colliſion of bodies, the quantity of *Direction* is the ſame before and after the impulſe. *Bernoulli*, Diſcours ſur le movement. Oper. tom. 3. p. 32 & 56.

DIRECTOR, (*Cycl.*) in ſurgery, a grooved probe, to direct the edge of the knife or ſciſſars in opening ſinus's or fiſtulas, that, by this means, the ſubjacent veſſels, nerves, and tendons, may remain unhurt. Sometimes one end is made in form of a ſpoon, to contain powders to ſprinkle upon wounds or ulcers. Sometimes alſo it is forked at the end to divide the frænum of the tongue. *Heiſter*'s Surg. Introd. Sec. 36.

DIRECTRIX, in geometry, the line of motion, along which the deſcribing line, or ſurface, is carried in the Geneſis of any plane or ſolid figure. It is otherwiſe called *Dirigent*. See DIRIGENT, *Cycl.*

DIRIBITORES, among the Romans, officers appointed to diſtribute tablets to the people at the *Comitia*. See COMITIA, *Cycl.*

DIRITTA, in the Italian muſic, a term intimating that the piece is to be played or ſung in conjoint degrees. Thus, *Contrapunto alla Diritta*, according to Angelo Berardi, is when one is obliged to raiſe or fall the voice by the ſame degrees, i. e. by an equal number aſcending or deſcending, without making a leap, even of the interval of a third. *Broſſ.* Dict. Muſ. in voc.

DISARM, in the manege—To *diſarm* the lips of a horſe, is to keep them ſubject, and out from above the bars, when they are ſo large as to cover them, and prevent the true preſſure or *appui* of the mouth, by bearing up the bit, and ſo hindering the horſe to feel the effects of it upon the bars. *Guil.* Gent. Dict. in voc.

DISBOSCATION, *Diſboſcatio*, a turning wood-ground into arable or paſture, an aſſarting. See ASSART, *Cycl.*

DISCEIT, in our old writers. See DECEIT and DECEPTIONE.

DISCOBOLI, Δισκοβολοι, among the antients, an appellation given to thoſe who gained the victory at the *Diſcus*. *Hofm.* Lex. in voc. See DISCUS, *Cycl.*

DISCOIDES *Fibula*, in natural hiſtory, the name of a genus of the echinodermata, or ſea hedge-hogs; the periphery of the baſe of theſe is exactly round, and the body of a convexo-concave figure. The principal ſpecies of this genus is the ſubuculus, which has ſometimes a roſeaceous top, the lines being very neat and elegant, ſometimes a plain and ſmooth top, ſometimes is all over covered with extreamly minute and fine ſtriæ, and ſometimes it is much flatter than at others. *Klein's* Echinoderm.

DISCRETIONE, in the Italian muſic, is uſed to direct the ſinger or player to execute his part with care diligently.

DISDIACLASTIC *Cryſtal*, in natural hiſtory, a name given by Bartholine, and ſome others, to the pellucid foſſile ſubſtance, more uſually called from the place whence it was firſt brought, *Iſland cryſtal*; though properly it is no cryſtal at all, but a fine pellucid ſpar, called by Dr. Hill from its ſhape parallellopipedum. See ISLAND-*Cryſtal*.

This cryſtal is met with in other places beſide Iſland, but not ſo plentifully. It is there found in great abundance all over the country, but is particularly plentiful in a mountain, not far from the bay of Roezfiord, where the fineſt and moſt pellucid pieces are found on digging. The mountain lies in 65 degrees latitude, and has its whole outſide made up of it; but, though this makes a very bright and glittering appearance, it is not ſo fine as that which lies at a little depth, and is met with on opening the ſurface. This is generally taken up out of the earth in maſſes of a foot long, and its corners very frequently are terminated in theſe large maſſes, by a ſort of cryſtals, very different in figure and qualities from the reſt of the maſs. The ſtone itſelf is of a parallellopiped figure; but theſe excreſcences are either ſingle pyramids affixed to columns, like common cryſtal or double pyramids, with or without columns between. The ſtone itſelf is ſoft; theſe are hard, and cut glaſs; the ſtone calcines to lime in the fire, theſe run into glaſs; in ſhort, the ſtone itſelf is true ſpar, and theſe are true cryſtal: beſide theſe, there ſometimes grows out of the ends of the larger maſſes a pure and fine abeſtus. This likewiſe is the caſe ſometimes in the ſpar, found about Barege in France, and ſhews how nearly together the formation of bodies wholly different from one another, may happen. The general figure of the ſtone is parallellopiped; or, as ſome expreſs it, rhomboide; and it retains this not only while whole, but alſo when broken to pieces. Every fragment it naturally falls into, though ever ſo ſmall, being truly of that ſhape. But it is remarkable, that in ſome places of this mountain, the ſame ſort of matter is found in form of triangular pyramids, all which have the ſame property of the double refraction with the parallellopipeds of the ſame ſubſtance; ſo that the original error of ſuppoſing its qualities owing to its ſhape, is refuted by this, as well as by the trials made with other pellucid bodies of the ſame figure, which do not ſhew this remarkable property. *Bartholine* de Cryſtal-Iſland. Phil. Tranſ. N° 67.

The iſland cryſtal is electrical, and when rubbed will draw up ſtraws, feathers, and other light ſubſtances, in the ſame manner that amber does. It is not ſo hard as to endure poliſhing. The ſides, however, are of an extreamly fine natural poliſh, which is moſt perfectly ſeen on breaking a thinner piece nimbly between the fingers: for where a larger maſs is ſtruck with a hammer, the percuſſion has not the ſame effect upon every part, nor is reſiſted equally every where; and therefore the broken ſurfaces have often ſome of the plates, or thin laminæ, of which they conſiſt, raiſed up, and become ſcabrous and rough by that means. The whole body is rather clear than bright: it is of the colour of limpid water; but that colour, when it has been wetted, and dried again, becomes very much duller; and hence, it is, that the outer ſurfaces of the pieces, which lie on the outſide of the mountain, are uſually very dark and dull in compariſon of the others that it ſhews when broken; the rains and ſnows often wetting and drying again upon it. When the ſurface is bright, there often appears the figure of a rainbow, with all the colours on it. The angles of the regular pieces are not pointed alike; all the flat ſides being obliquely inclined to one another. The oppoſite plains are always parallel in this cryſtaline priſm. Two of the plain angles are always acute, and the other two are always obtuſe, and never any of them is equal to the collateral angles of the inclinations. The objects ſeen through it appear ſometimes, and in certain poſitions of the priſm, double; and, the diſtance between the two images of the object, is always greater or leſs according to the largeneſs or ſmallneſs of the priſm, inſomuch, that in thin pieces of it, the difference of the double image almoſt vaniſhes; and it has been hence ſaid, by ſome, that only thick maſſes of this ſtone had the property. The object appearing double, both images appear with a fainter colour, and ſometimes one part of the ſame ſpecies is obſcurer than another; and, to an attentive eye, one of theſe images will always appear higher than the other.

In a certain poſition of the ſtone the image of the object ſeen through it appears only ſingle, as through any other tranſparent body; and there is, on the contrary, a particular poſition, in which it appears ſix-fold. If any of the obtuſe angles of this priſm be divided by a line into two parts, and the viſual rays paſs from the eye to the object through that line or its parallel; both images of the object will meet in one, either in that line, or in one parallel to it.

Whereas objects ſeen through diaphanous bodies, are wont to remain in the ſame place, in whatever manner the tranſparent body is moved, nor does the image on the ſurface move, unleſs the object itſelf be moved; in this particular pellucid body,

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one of these images is moveable, but the other is all the while fixed. This is the natural and obvious method in the examining the properties of the stone: but there is a way to render the moveable object fixed, and the fixed one moveable; or to render both the one and the other moveable at the same time. The moveable image, in the common way of observing, does not move about at random, but always in a regular manner about the fixed object, and while it turns about this, it never describes a perfect circle, but only in one case. The common laws of dioptricks, teach us, that a diaphanous body having only one surface, sends from one object but one image refracted to the eye, and having more surfaces than one, it represents one image of the object in each; and, as in this island crystal, when we look only upon one surface we have two images, it is evident, that there must be something peculiar in the nature and internal structure of the body itself to occasion it. The whole masses of this stone are wonderfully composed of plates, or laminæ, extreamly thin, laid evenly and regularly on one another; and forming, in a manner, scarce conceivable, both the horizontal and the perpendicular surfaces. Each of these plates is composed of a vast number of small parallellopiped figures, arranged in a neat and orderly manner together; and each of these minute parallellopipeds is again composed of plates composed of other parallellopipeds, and so on as far as microscopes can trace them. There is therefore something singular in the structure of this body, which may very well give it the property of refracting differently from the other pellucid stones; and, it is observable, that all the spars of this massy kind, as well as some of the pyramidal ones, have the same property; and that, in the same degree, in proportion to their bigness, whenever they are sufficiently pellucid. The vast masses of white spar which are found in the lead mines of Derbyshire, though they are not externally of the parallellopiped figure of the island crystal, nor have any thing of its brightness or transparence in the general lump; yet, when they are broken, they separate into rhomboidal fragments, and some of these are found to be tolerably pellucid: all those which are so have the property of the island crystal; and being laid upon paper, where a black line is drawn, they all shew that line double in the same manner as the real island crystal does. Bartholine has two hypotheses for the explication of the various refractions of this stone, not so much founded on reasonings as on experience: the one is, that there are some lines, by which the rays pass through the body of the stone unrefracted, which lines, though they have been held to be perpendicular in the diaphanous bodies, commonly known, yet it does not appear necessary, that they should always be supposed such; since they may, perhaps, in some cases, be much otherwise: the other is, that it may be supposed, that half the light or appearance diffused from the object, is refracted, according to the usual laws of refraction; but the other half, according to the unusual refraction; or which is all one, that the usual and unusual refraction, have the same power to refract the rays of the object. *Barthol.* de Crystal Island. See the article PARALLELLOPIPEDIUM.

DISEASE (*Cycl.*)—The colder the country, in general, the fewer and the less violent are the *Diseases*. Scheffer tells us, that the Laplanders know no such thing as the plague or fevers of the burning kind, nor are subject to half the *distempers* we are. They are robust and strong, and live to eighty, ninety, and many of them to more than a hundred years; and, at this great age, they are not feeble and decrepid, as with us; but a man of ninety is able to work or travel as well as a man of sixty with us. They are subject, however, to some diseases more than other nations: thus they have often *distempers* of the eyes, which is owing to their living in smoak, or being blinded by the snow. Pleurisies and inflammations of the lungs are also very frequent among them; and the small-pox often rages with great violence. They have one general remedy against these, and all other internal diseases: this is the root of that sort of moss, as Scheffer expresses it, which they call jerth. They make a decoction of this root in the whey of rain-deer milk, and drink very large doses of it warm, to keep up a breathing sweat; if they cannot get this, they use the stalks of angelica boiled in the same manner; they have not so great an opinion of this as of the other remedy; but the keeping in a sweat, and drinking plentifully of diluting liquors, may go a great way in the cure of their diseases, whether either the one, or the other of the drugs, have any virtue or not. They cure pleurisies, by this method, in a very few days; and get so well through the small-pox with it, that very few die of it.

It has been always observed, that people of particular places were peculiarly subject to particular *Diseases*, which are owing to their manner of living, or to the air, and effluvia of the earth and waters. Hoffman has made some curious observations on diseases of this kind. He observes, that swellings of the throat have always been common to the inhabitants of mountainous countries: and the old Roman authors say, Who wonders at a swelled throat in the Alps? The people of Switzerland, Carinthia, Styria, the Hartz-forest, Transylvania, and the inhabitants of Cronstradt, he observes are all subject to this disease from the same cause; and, it seems, that these strumous swellings are owing to the water which they drink, and which in mountainous places is usually very highly impregnated with sparry or stony particles. The French are peculiarly troubled with fevers, with worms, and with hydroceles and sarcoceles; and all these disorders seem to be owing originally to their eating very large quantities of chesnuts. The people of our own nation are peculiarly afflicted with hoarsenesses, catarrhs, coughs, dysenteries, consumptions; and the women with the fluor albus, or whites; and children, with a *Disease* scarce known elsewhere, which we call the rickets. In different parts of Italy different *Diseases* reign. At Naples the venereal *Disease* is more common than in any other part of the world. At Venice people are peculiarly subject to the bleeding piles. At Rome tertian agues and lethargic distempers are most common. In Tuscany, the epilepsy, or falling sickness. And in Apulia they are most subject to burning fevers, pleurisies, and to that sort of madness which is attributed to the bite of the tarantula, and which, it is said, is only to be cured by music.

In Spain apoplexies are common, as also melancholy hypocondriacal complaints and bleeding piles. The Dutch are peculiarly subject to the scurvy, and to the stone in the kidneys. Denmark, Norway, Sweden, Pomerania, and Livonia, are all terribly afflicted with the scurvy; and, it is remarkable, that in Denmark, Sweden, and Norway, fevers are very common; but in Island, Lapland and Finland, there is scarce ever such a *Disease* met with; tho' peripneumonies be very common in these places, as also diseases of the eyes and violent pains of the head. The Russians and Tartars are afflicted with ulcers, made by the cold, of the nature of what we call chilblains, but greatly worse; and in Poland and Lithuania there reigns a peculiar *Disease*, called the plica polonica; so terribly painful, and offensive, that scarce any thing can be thought of worse.

The people of Hungary are very subject to the gout and rheumatism: they are more infested also with lice and fleas than any other people in the world, and they have a peculiar *Disease* which they call cremor.

The Germans, in different parts of the Empire, are subject to different reigning *Diseases*. In Westphalia they are peculiarly troubled with peripneumonies and the itch. In Silesia, Franconia, Austria, and other places thereabout, they are very liable to fevers of the burning kind, to bleedings at the nose, and other hæmorrhages; and to the gout, inflammations, and consumptions. In Misnia they have purple fevers; and the children are peculiarly infested with worms. In Greece, Macedonia, and Thrace, there are very few *Diseases*; but what they have, are principally burning fevers and phrensies. At Constantinople the plague always rages; and, in the West-Indian islands, malignant fevers, and the most terrible colics.

DISEASES *feigned*—The cheat of feigning *Diseases*, for idleness, or profit sake, or for other occasional purposes, has been too common in all ages, and is too difficult to be discovered in all cases; though, in many, there are ways of coming at the truth. We have had a very late instance of a young lady, who puzzled several of our best physicians, to account for the nature of a *Disease*, which showed itself in a singular kind of excoriations; and the secret perhaps had never been discovered, had not a bottle of aquafortis been accidentally found in her chamber; the touching the arms, &c. with which had occasioned all the appearances, which some strange fault in the juices had been before accused of.

Dissimulation, in regard to *Diseases*, may be reduced to three kinds: in the first, the sickness is pretended by words only, and really is not; of this nature are the pretended head-ach, colic, and the like; which, as the patient can only know of, the physician may always be deceived by his words. In the second, there are not only words for testimonies of the sickness, but there appear signs and marks of it on the body, which yet are only counterfeited to serve certain purposes. Scabbyness, leprosy, and even the exulceration of the lungs may be thus counterfeited; the last by a pretended spitting of blood. Gravidation is often pretended also. Our beggars often contrive the means of these to excite compassion. In the third kind of dissimulation of *Diseases*, we are to include the concealing a *Disease*, which really exists, instead of the owning one which does not.

The great occasion of this kind of dissimulation is the pox, and the concealing of this often proves the ruin of the patient's constitution, or his reason; a miserable death or madness being too often the consequences.

In the discovery of these deceits, on which the credit of the physician often depends, it is not mere medical knowledge that will succeed, but there must be added to it a sagacity in exploring all circumstances and outward accidents, and especially those things which relate to the genius, temper and state of the person suspected. The Dæmoniacs, of former ages, exorcised by the priests, who wanted to propagate the credit of their religion, or their own sanctity, have generally been cheats of this kind, and might have been discovered by any

who

who had talents and opportunities for the proper examinations. Sylvaticus, an Italian author, has given an excellent ſet of rules for the diſcovery of theſe frauds, and all others of pretended ſickneſſes, to which we refer the curious reader.

DISEASES *of infants*. See INFANTS.

Peſtilential DISEASES. See PESTILENTIAL.

Soporous DISEASES. See SOPOROUS.

DISEASES *of Trees*. See DISTEMPERATURE.

DIS-ERGOT, in the manege. See ERGOT.

DISGORGE, in the manege, is uſed for diſcuſſing or diſperſing an inflammation or ſwelling: thus if a horſe's legs are gorged or ſwelled, we ſay he muſt be walked out to *diſgorge* them.

DISGUISE.—Perſons doing unlawful acts in *diſguiſe* are by our ſtatutes ſometimes ſubjected to great penalties, and even declared felons. Thus perſons convicted of hunting in *diſguiſe* in foreſts, parks, or warrens, or of unlawful hunting in the night, are to ſuffer as felons [a]. But the principal act of parliament in this reſpect is that commonly called the Black-Act, which makes appearing *diſguiſed* and armed in a foreſt, or grounds incloſed, or hunting deer, or robbing a warren, or taking away fiſh, felony [b]. The concealers of ſuch offenders are alſo made guilty of felony [c]. There are alſo rewards of 50 *l.* appointed for thoſe who ſhall be wounded in apprehending the offenders; and if a man be killed in ſo doing, the reward goes to his executors or adminiſtrators [d]. Proſecutions on this act may be commenced within three years, and the trial may be in any county [e]. [[a] Stat. 1 Hen. 7. c. 7. [b] See the Stat. 9 Geo. 1. c. 22. §. 1. [c] Ib. §. 5. [d] Ib. §. 12. [e] Ib. §. 13, 14.]

DISH, (*Cycl.*) in mining, is a trough made of wood, about 28 inches long, 4 inches deep, and 6 inches wide; by which all miners meaſure their ore. If any be taken ſelling their ore, not firſt meaſuring it by the bar-maſter's *Diſh*, and paying the king's duties, the ſeller forfeits his ore, and the buyer forfeits for every ſuch offence forty ſhillings to the lord of the field, or farmer. *Houghton*'s compl. miner, p. 15, and in the explan. of the terms.

DISLOCATION (*Cycl.*) — We have an inſtrument of Mr. Freke's invention for the reduction of *diſlocated* ſhoulders, deſcribed in the Philoſophical Tranſactions, N° 470.

DISPART, in gunnery, is uſed for the ſetting a mark on the muzzle-ring of a piece of ordnance, or thereabouts; ſo that a ſight-line taken upon the top of the baſe-ring againſt the touch-hole, by the mark ſet on or near the muzzle, may be parallel to the axis of the concave cylinder. The common way of doing which, is, to take the two diameters of the baſe-ring, and of the place where the *Diſpart* is to ſtand, and divide the difference between them into two equal parts, one of which will be the length of the *Diſpart*, which is ſet on the gun with wax or pitch, or faſtened there with a piece of twine or marlin: but an inſtrument may be made to do it to all poſſible nicety.

DISPERSION (*Cycl.*)—DISPERSION *of Inflammations*, in medicine. The grand intention in the treatment of all inflammations ſhould be to open ſuch ſmall veſſels as are obſtructed, and to reſtore the blood to its natural conſiſtence and free circulation; and this is commonly term'd in ſurgery the reſolution or *diſperſion* of tumors. When in caſes of this kind the inflammatory ſigns are but gentle, it is always beſt immediately to ſet about the diſperſing the tumor. If the cauſe of the inflammation is external and obvious, as thorns, ſplinters, bullets, or any other foreign body ſtuck in the part, this is to be immediately removed, if that can be done with ſafety. So when the inflammation proceeds from too tight a bandage in wounds, *&c.* or from a luxation or fracture, the firſt thing to be done is to looſen the bandage, to ſet the fracture, or to reduce the luxation. It is after this very proper to open a vein in the arm, and after that to give a brisk but not heating purge; and if the ſymptoms do not abate, this method is to be repeated at proper intervals. Internal medicines which are watery, diluting, cooling, and attenuating, do great ſervice on theſe occaſions.

A proper regimen is alſo to be obſerved in regard to diet: all aliments that are of difficult digeſtion, all pickled or ſalted meats, and all ſpices and fermented liquors, with every thing elſe that may tend to heat and inflame the blood, are to be carefully avoided. The moſt proper aliments are broths, and drinks made of pearl barley, oats, or flower. Decoctions of all the cooling plants, as ſorrel, endive, *&c.* mixed with ſmall quantities of lemon juice, or any other of the vegetable acids; and when the inflammation is great, a little nitre ſhould be added to theſe drinks. Nor is there leſs care required about the external applications; for though ſome to appeaſe inflammations uſe only heating medicines, and others only cooling ones, yet either ſort if applied at random, and in all caſes, may prove pernicious, for one medicine can never in theſe caſes ſerve for all conſtitutions. To perſons of a hot temperament the cooling external remedies are in theſe caſes to be applied. Of this kind are the litharge vinegar applied warm on linnen rags folded together, or hot vinegar mixed with red lead, or with bole armoniac, and applied in the ſame manner; or oxycrate, or vinegar and water mixed in equal quantities; or of any of theſe liquors may be taken ſix ounces, and to this an ounce of common ſalt, and two ounces of either nitre or ſal armoniac being added, and with this mixture linnen rags many times doubled, and applied wet to the part, will be of great ſervice. In the night time alſo, when theſe applications cannot ſo conveniently be renewed, a plaſter of the red lead, or other cooling one, may be of no ſmall uſe. This is the proper method in hot conſtitutions; but, on the contrary, in cold and phlegmatic ones, ſpirit of wine alone, or camphorated ſpirit, or either of theſe with an admixture of a ſmall quantity of Venice treacle, are very ſucceſsful remedies for the *Diſperſion* of inflammations, being applied on linnen cloths doubled in the ſame manner; ſo alſo is ſpirit of wine mixed with lime-water, or even lime-water alone, or Hungary-water with lapis calaminaris, ceruſs, ſal armoniac, or bole armenic, or a mixture of a pint of rectified ſpirit of wine with two ounces of Caſtile ſoap. This laſt applied warm is hardly ſecond to any medicine in theſe intentions. Decoctions of wormwood, mint, ſavin, ſouthernwood, and other ſuch herbs made with ſalt-water or lime-water, are alſo very good external applications; and to theſe may be added when neceſſary, either camphorated ſpirit of wine, or Caſtile ſoap: and not only the decoction of theſe herbs, but the herbs themſelves when boiled may be applied as a cataplaſm, with great ſucceſs. *Heiſter*'s Surgery, p. 181.

DISPROVING, in rhetoric. See REFUTATION.

DISSIPATION (*Cycl.*) — *Circle of* DISSIPATION, in optics, is uſed for that circular ſpace upon the retina, which is taken up by one of the extreme pencils of rays iſſuing from an object.

To underſtand which, it is to be obſerved, that when the diſtance of an object from the eye is too ſmall, or too great, for perfect or diſtinct viſion, the rays of each pencil iſſuing from the object cannot be united at a point on the retina, but beyond it, or before they arrive at the retina; conſequently the rays of each pencil will occupy a circular ſpace upon the retina; and this circle is called the circle of *Diſſipation*, becauſe the rays of a pencil, inſtead of being collected into a central point, are diſſipated all over this circle.

The conſideration of the circles of *Diſſipation* formed by the rays coming from the extremities of objects, is of uſe to account for ſeveral curious phænomena of viſion. See the article MOON, and Dr. Jurin's *Eſſay on diſtinct and indiſtinct viſion*, at the end of Dr. Smith's Optics.

Radius of DISSIPATION, the radius of the circle of *Diſſipation*.

DISTANCE (*Cycl.*)—*Diſtance*, according to an ingenious author, cannot of itſelf and immediately be ſeen. For *Diſtance* being a line directed endwiſe to the eye, it projects only one point in the fund of the eye, which point remains invariably the ſame, whether the *Diſtance* be longer or ſhorter. Dr. *Berkeley*, Eſſay on Viſion.

A late eminent mathematician [a] obſerves, that the *Diſtance* here ſpoken of, is *Diſtance* from the eye; and that what is ſaid of it muſt not be applied to *Diſtance* in general. The apparent *Diſtance* of two ſtars is capable of the ſame variations as any other quantity or magnitude. Viſible magnitudes conſiſt of parts into which they may be reſolved as well as tangible magnitudes, and the proportions of the former may be aſſigned as well as thoſe of the latter; ſo that it is going too far to tell us, that viſible magnitudes are no more to be accounted the object of geometry than words; and that the ideas of ſpace, outneſs, and things placed at a diſtance, are not, ſtrictly ſpeaking, the object of ſight; and are not otherwiſe perceived by the eye than by the ear. [a] Mr. *Maclaurin* in his account of Sir Iſaac Newton's diſcoveries, p. 225.

Apparent DISTANCE. See the article APPARENT.

DISTEMPER, among phyſicians. See DISEASE.

DISTEMPERATURES *of Trees*.—Some of theſe are in the tree itſelf, and others in the ſoil and other things about it. Of the laſt kind are weeds, which are of the utmoſt ill conſequence to all ſorts of trees while young, and ſhould be pulled up by hand after rain: if they are too ſtrong rooted for this, they muſt be dug up; and this will have a double advantage, as the ſtirring the earth about their roots will do the trees very great good. When the trees are grown to any tolerable height, they require no care about weeds, for they kill them with their own dropings.

Suckers are another *Diſtemperature* of trees ariſing from the tree itſelf: they muſt be pulled off, or cut up cloſe to the place where they come out, opening the earth to come at them there. Over-much wet often is a very great prejudice to trees, and eſpecially to thoſe kinds which naturally love a dry ſoil. This is to be remedied by cutting drains: and if a drip fret the body of the tree by the head (which will certainly decay it) the place muſt be firſt cut ſmooth, and then ſome loam or clay, mixed well with horſe-dung, is to be applied to the place, which will defend it from miſchief till a new bark is formed over it. All wounds made in trees in winter are much harder to cure than thoſe made in ſummer; and for theſe it is proper to add ſome tallow to the mixture of loam and dung.

When trees are bark-bound, which is eaſily ſeen by the unnatural tightneſs and ſtraining of the bark over them, it is to be remedied by cutting through the bark with a knife from the top to the bottom of the tree. This may ſeem a dangerous

remedy

remedy to thoſe who have not experienced it, but it never was found to do any injury to trees. It is to be done in February or March; and if the wound gape very much, it may be filled up with cow-dung, which will defend the tree from injury till it heals. The digging about the root of the tree is a very good practice alſo on this occaſion, and the cutting off the dead or withered branches.

The grubs of beetles, called teredines and coſſi, which get between the bark and the tree, do great miſchief: if the places can be found out where they lie, it is proper to pierce into the bark with a pointed inſtrument upon them, and then to open a ſmall hole below to let out whatever moiſture may be there. When trees of the fruit kind are burnt up and bliſter'd on the bark with hot and dry ſeaſons, and this is followed by a vaſt number of the pucerons or tree-lice, which feed on the juices, ſome recommend the boring a large hole in the main root, and pouring in ſome brandy, then ſtopping up the hole with a pin of the ſame wood. The tree ſuffers nothing by this, but the juices are ſo much altered for the preſent by it, that theſe animals do not like them, and conſequently quit their habitation. *Mortimer*'s Husbandry, *&c.* p. 70. See the article PUCERON.

If a tree is by any accident barked or ſtripped all round, ſo that it cannot grow any longer, the proper method is to cut it off juſt above ſome principal branch; the ſtump muſt be cut off ſlanting and covered with clay, and the branch will ſoon become the body of a tree in the place of the other: the place where the ſtump is cut off being covered with a bark in the manner of a tree that is graſted.

Deer and hares, as alſo rabbits, are apt to bark trees, and do them great miſchief. The defences againſt deer are by paling them round, or painting the lower part of the tree, but the firſt is much the better method. The hares and rabbits may be kept off by tying bands of ſtraw round the foot of every tree as far as they can reach. Evelyn recommends the rubbing them over with human dung made into a ſoft paſte with urine, ſo that it may be laid on with a bruſh; but this is attended with great trouble, as it muſt be renewed after every hard rain. Some uſe tar and lime mixed together, but this always damages the tree more than theſe creatures would have done; and in general ſtraw-bands, where any thing is neceſſary, do beſt. Id. ibid. See DISEASES *of Plants*, *Cycl.*

DISTENSION (*Cycl.*)—DISTENSIO, Διαταϛις, in the antient muſic, was uſed for the differences of ſounds with relation to acute and grave. *Wallis* Append. ad Ptolem. Harm. p. 154.

Nature in this reſpect, ſtrictly ſpeaking, aſſigns no limits. But, with regard to our uſe, the antient muſicians held, that the nature of what ſounded, and alſo of what was to judge, that is, the human ear, was to be conſidered: for, neither the human voice, nor even any inſtrument, can give intervals or *diſtenſions* immenſely great or ſmall, nor could the ear judge of ſuch. Ariſtoxenes fixes the leaſt interval or *diſtenſion* in practice, to the dieſis enharmonica. As to the greateſt, he thinks it does not exceed two octaves, and a fourth, or a fifth, if we conſider any human voice; or three octaves, if we conſider one and the ſame inſtrument. He does not deny that the extent of the voice, conſidered in differenr ſubjects, as in men and children, may go even beyond four octaves. *Ariſtoxen.* p. 21. edit. Meibom.

DISTICHOUS *Stalk*, among botaniſts. See the article STALK.

DISTILLATION (*Cycl.*)—*Combinatory* DISTILLATION, a term introduced into uſe by Dr. Shaw, in his Eſſay on *Diſtillation*, to expreſs that ſort of rectification of diſtilled ſpirits which is done with additions, and which he otherwiſe calls improper rectification, by way of diſtinction from that proper rectification, which is only the method of reducing a ſpirit to its utmoſt degree of purity and perfection.

In the *Combinatory Diſtillation* many ingredients are added in order to rectify the ſpirit, as the diſtillers expreſs it; and ſome parts of theſe actually come over and mix themſelves along with the ſpirit ſo intimately, as not to be ſeparable again without great difficulty. This is done with a deſign to alter, improve, or aboliſh the natural flavour of the ſpirit, but inſtead of rectifying it, they only obſcure and pervert its true qualities. In the buſineſs of rectification, properly ſo called, of the malt ſpirit, all that is neceſſary is the rediſtilling the low wines procured from the waſh; the again diſtilling over the ſpirit thus obtained, and called proof ſpirit, into a totally inflammable liquor called alcohol. This is done by the common proceſſes, only taking care not to increaſe the fire by ſudden ſpurts, ſo as to raiſe the oil with the ſpirit, which if once mixed will not be eaſily ſeparated again, and ſcarce ever perfectly, whatever care is uſed. *Shaw*'s Eſſay on Diſtillery.

The methods of combinatory rectification, on the other hand, are very numerous, every diſtiller having his peculiar noſtrum about it. Malt ſpirit is the general ſubject of this proceſs, and the means uſed to rectify it on this plan may be reduced to three heads: 1. That by fixed alkaline ſalts alone. 2. That by fixed alkaline ſalts and acid ſpirits. And, 3. That by ſaline bodies and flavouring additions. The general method is that by fixed alcaline ſalts alone; but it is ſurpriſing to ſee in how careleſs and ſlovenly a manner this is done by the generality of our diſtillers, though we are allowed to excel all other nations in it. The effect of this operation, when carefully performed, is to attenuate and thin the ſpirit, and to keep back a part of its groſs and fœtid oil, and ſo far to alter the part of the oil which comes over, as ſcarce to leave the ſpirit diſtinguiſhable for a malt ſpirit.

This end is greatly promoted by a prudent and ſteady management of the fire, and by leaving out the faints; but this is a thing our diſtillers never attend to, they hurry over the operation, working the ſtill in its full force, and by this means raiſe and carry over the oil; though the whole buſineſs of the proceſs is to keep it back; and they even ſuffer the fulſome bitter oil, made into a kind of liquid ſoap with the ſalt in this proceſs, to run among the ſpirit with the faints; by this the whole intent of the proceſs is fruſtrated, and the ſpirit rendered much harder to clean than it was before.

This operation is uſually performed upon proof ſpirit, and the quantity allowed is from eight to fourteen pounds of ſalt of tartar, fixed nitre, pot-aſh, or more commonly calcined tartar to the piece. The tartar being only roaſted to a blackneſs in this laſt proceſs, is ſold under the abſurd notion of a vinous ſalt, and the dealers will often praiſe the vinoſity of their ſpirit, becauſe diſtilled from this ſalt; but the truth is, that this ſalt never fails to give, inſtead of a vinoſity, a ſaponaceous, urinous, or lixivial taſte and ſmell. This is the great misfortune that attends the method of rectifying by means of fixed ſalt, for they all of them become volatile in part during the operation; and this volatile portion paſſes over the helm with the ſpirit, and impregnates it, uniting itſelf alſo with that portion of oil yet retained in the ſpirit, and much more firmly combining it and the ſpirit together than they were before; ſo that in reality the ſpirit thus rectified is no other than an alkaline or tartariſed ſpirit, as the chemiſts call it; a thing extremely different from a true vinous ſpirit.

This method therefore, though it were practiſed to the utmoſt perfection, would never do what was intended by it, but would alter inſtead of rectifying the ſpirit. Hence there appears the neceſſity of ſome acid to deaden the force of the alkali thus uſed in the rectification. The neceſſity of this gave occaſion to the method of mixing acids and alkalies together for theſe purpoſes. The acids uſed by our diſtillers on this occaſion are thoſe of the mineral kingdom by reaſon of their cheapneſs, and the moſt common in uſe among them are oil of vitriol, ſpirit of nitre, oil of ſulphur, and the like. The moſt celebrated rectifiers in the malt way have got their reputation by the uſe of theſe acids. There is ſome choice however to be made of the ſpirits according to the greater or leſſer foulneſs and need of rectification, and they muſt not only be well proportioned, but carefully introduced, and regularly mixed; and indeed without ſome ſkill and judgment in the management of theſe corroſives, no diſtiller ought to attempt to meddle with them.

Theſe ſtrong and violent acids at beſt are not ſo well adapted to the work as the milder ones, particularly the ſulphureous ſpirit of vitriol, which comes over in the rectification of the oil; to this may be added the common ſpiritus nitri dulcis, and Mr. Boyle's acid ſpirit of wine well prepared.

Some of our rectifiers inſtead of the fixed ſalts uſe quick-lime, which cleanſes and dephlegmates conſiderably: but this method requires the aſſiſtance of acids alſo afterwards, to take off not only the alkaline diſpoſition, but alſo the ſtinking flavour it leaves behind it. Some alſo uſe chalk, virgin earth calcined, and burnt animals bones. Theſe are of conſiderable uſe in the rectifying brandy without rendering the ſpirit any more unfit for the purpoſe of the compounders than before, or requiring much acid afterwards.

The great art of uſing the flavouring ingredients in rectification is the proper admixture of ſalts in the operation, for without theſe the flavours added by this means do very little. The ſalts uſed on this occaſion are either the fixed alkalies, as pot-aſh and calcined tartar, or decrepitated common ſalt, or calcined vitriol, alum, or ſandiver. The flavouring ingredient is to be applied afterwards, and the whole quantity of the ſpirit either drawn over again, or not, as the occaſion and nature of the addition requires. But theſe ſaline bodies perform ſo very little, that the ſpirit is uſually left impregnated with a flavour from its own oil, which is but badly hidden, or overpowered by the other ingredients. The moſt common flavourers, as they call them, are theſe, mace, orrice root, parſnip, artichoak, rhodium, raiſin ſtalks, damask roſes, wine lees, rape or grape husks, and the oil of wine. The laſt of theſe is infinitely preferable to all the others, but is not ſo well known. Theſe and the like ingredients judiciouſly mixed, will, when the ſpirit is very well purified firſt, give the flavour of foreign brandies with ſome tolerable exactneſs; but if this is not attained, their flavour will be loſt in the original one, and the general taſte reſulting from the whole will be like nothing at all. The ultimate perfection aimed at in all the proceſſes of *combinatory Diſtillation*, is the depurating the Engliſh malt ſpirit at one operation, ſo as to render it taſteleſs and inodorous, and yet vinous; or elſe to make it reſemble the French brandy, arrack, or ſome other low-flavoured vinous ſpirits.

This is certainly practicable, though not usually practised to the perfection that it might be: the principal thing to be endeavoured after, is the obtaining a tasteless spirit, capable of receiving any impression, and then the business of flavouring is easy. The method of rectifying, by fixed alkaline salts, is capable of great improvement, as by steeping the spirit first brought near to the state of alcohol, upon a well dried salt of tartar, or any other cheaper, but pure fixed alkali; by this means it will be almost totally freed of its oil without volatilizing much of the salt, as it does in the way of distillation; by this means a weak tincture of salt of tartar may be procured, and an acid added to this, to take off the effects of the alkali in the spirit, the whole is then to be distilled; and the fire being well managed, a very clean spirit will be thus procured at one operation, such as can no way else be obtained at once.

The use of the compound neutral salts in rectification seems not yet to be sufficiently known; what is meant by these salts is a fixed alkaline salt saturated with an acid one. Such a salt has indeed been expected from the caput mortuum, or white saline cake, remaining upon the *Distillation* of the spirit of nitre with oil of vitriol, but it proves too hard, stony, and insoluble, to be of any great use on this occasion: a much better effect may be expected from soluble tartar, carefully prepared, and properly used; though even this is apt to render the spirit a little saponaceous. Some compound neutral salts have been made however upon this foundation, that would rectify common malt spirit from proof at a single operation, much better than all the other more perplexed and tedious methods in use. A prudent use of fine dry sugar may also be of some service, as it readily unites with the essential oil, and detains and fixes it, without imparting any urinous or other nauseous flavour to the spirit rectified upon it; another hint to this purpose, which may be made to turn to very good account, is that given by the ingenious method invented by Dr. Cox, of taking all the oil out of the volatile salts, by first bringing them to a neutral state with spirit of salt, and then subliming them with salt of tartar, which does the business to perfection. In the case of spirits the acid may be varied, and virgin earth, chalk, calcined flints, or the like absorbents used in the stead of salt of tartar, and yet the general effect will be the same. *Shaw*'s Essay on Distillery.

Brewing for DISTILLATION. *See* BREWING.

DISTILLED *juice of Tar*. See TAR-*water*.

DISTILLED *waters*. The waters *distilled* from plants and other medicinal things, may receive something from the vessels in which they are *distilled*, which may in some degree alter their properties. Even water alone *distilled* in glass vessels, and in those of metal, differs so much, that these two distillations being mixed, will render one another turbid. The florentine academicians have taken this change of waters under their consideration among the many other minutiæ, of natural and experimental philosophy omitted by others. They found that common water *distilled* in leaden vessels would render all other waters turbid, on mixing with it; whether it were spring, fountain, river, or well water, except alone the water of the conduit at Pisa: an experiment that proved a quality in that water, different from all others, though never before suspected in it. The experiment being repeated at various seasons afterwards, the water of this conduit was sometimes found to grow turbid also, but this was at such times as other waters, from rain, &c. had blended themselves with the genuine water of the spring. Waters *distilled* in glass vessels, and mixed with waters *distilled* in lead vessels, were supposed by the Florentines indeed not to render one another turbid; but, by the observations often made by the curious Redi, it proved that they did. This author assures us, that having *distilled* the parietaria in a glass cucurbit, and shifted the receiver fourteen times, and mixed all these shifted waters with rose water *distilled* in lead, they always became turbid, though he repeated it after several months: but after distilling in balneo, the remainder of these fourteen shiftings, in a silver vessel, with a glass head, changing the receiver eight times; he found, indeed, the water that was gathered in the eighth or last receiver untroubled: though he mixed with it several shiftings of water *distilled* in lead, but all the other seven shiftings grew still turbid when thus mixed. *Redi*'s Observat.

Common water *distilled* in gold, silver or glass, with a glass head, and kept in glass, remains always clear; but, in crystal of Pisa, it grows turbid in a few hours; then milky, and in a few days yellow, and after all this bitter; whereas in crystal of Rome or Venice, the same water does not grow turbid till after two or three days, and never becomes yellow or bitter in it; and in crystal of Paris it will scarce grow turbid, but after a very considerable time. The various materials used in the making these several kinds of crystal, at the glass-houses of these different places, and the various manner of working them are the occasion of this great difference in them; and on these principles we may find a new and more than ordinary way of judging of the goodness of glasses which seem equal to one another.

DISTILLED *waters* of laurel leaves. See LAUROCERASUS.

DISTILLERY. The business of fermentation is one of the great preparations to the *Distillery*. What we usually call vinous fermentation in particular, is the kind it is concerned principally in. By this we usually understand that physical action, or intestine commotion of the parts of a vegetable juice tincture, or solution, which renders them fit to yield an inflammable spirit on distillation.

This fermentation in the hands of the distiller differs from the common one, that is used in the making of potable vinous liquors, as being much more violent, tumultuary, active, and combinatory than that. A large quantity of yeast, or other ferment, is added to the distiller's fermentation: the free air is admitted, and every thing is contrived to quicken the operation, so that it is sometimes finished in two or three days. This great dispatch, however necessary to the large dealer, has its inconveniencies attending it; for the spirit is by this means always fouler, more gross, and really terrestrial, than it would have been if the liquor had undergone a proper fermentation in a slower manner. It also suffers a diminution in its quantity, from the violent and tumultuary admission, conflict, and agitation of the free air, both in the body and upon the surface of the liquor, especially if the liquor be not immediately committed to the still as soon as the fermentation is fairly slacked or fully ended. It is a very difficult task to render the business of fermentation at once perfect and advantageous. To ferment, in perfection, necessarily requires length of time, and careful attendance, and close vessels, beside several other articles of nice management, which cannot be expected to be received and practised in the large way, on account of the trouble and expence, unless it could be proved to the distillers, as possibly it some time may, that the quantity of spirit would be so much greater from the same quantity of materials managed thus, than by the common way, that it will more than pay its own expence; to which may be added, the very well known advantage of the spirit thus procured by perfect fermentation, being much finer than that obtained in the common way: till this shall be made out, it may not be amiss to try how much of the more perfect art of vinous fermentation, is profitably practicable by the distiller in the present circumstances of things. The improvements to be made in this affair will principally regard, 1. The preparation or previous disposition of the fermentable liquor. 2. The additions tending to the general, or some particular end. 3. The admission or exclusion of the air. 4. The regulation of the external heat or cold; and 5. A suitable degree of rest at last. When proper regard is had to these particulars, the liquor will have its due course of fermentation, and it will thence become fit to yield a pure and copious inflammable spirit by distillation. The tincture, solution, or liquor intended for fermentation, for the still, should be considerably thin and aqueous. That sort of richness that there is in the ten shilling small beer, is the utmost that ought to be allowed to it. This property not only fits it to ferment readily, but also to yield a larger quantity in proportion of a pure vinous spirit, than it would do if it were more rich and clammy: the gross, foul, viscid, and earthy particles of such glutinous liquors, being after fermentation apt to rise up with the boiling heat which must necessarily be employed to raise the spirit; and the spirit thus of course comes over foul and fetid. There is also another advantage attending the thinness of this liquor, which is, that it will sooner become fine by standing before fermentation; whence it may be commodiously drawn off from its fæces or bottom, which must always in case of corn, malt, or any other mealy substance, be kept out where the purity of the spirit is consulted. A certain degree of warmth seems necessary in all the northern climates, to all sorts of artificial liquors, intended for immediate fermentation, especially in winter; but the natural juices of vegetables, which have never been inspissated, as that of grapes, and other fruits, when fully ripened, will usually ferment, as soon as they are expressed without any external assistance. But, as a certain degree of inspissation, prevents all tendency to fermentation in all vegetable juices, though otherwise strongly disposed to ferment; so a long continuance, or an increase of the inspissating heat, especially if it acts immediately through a metalline or solid body upon the juice, will destroy its fermenting property; and it will do this the more effectually, as the heat employed approaches to that of scorching, or the degree capable of giving an empyreuma. After the same manner, several experiments make it appear that there is a certain degree of heat; the continuance, or least increase of which, proves detrimental or destructive to fermentation; as there is another, which in a wonderful manner encourages and promotes it. These two degrees of heat ought to be carefully noted and settled by the thermometer, or other certain methods, for philosophical and chymical uses; but for common, or all oeconomical occasions, they may be limited to what we call a tepid and fervid heat: a fervid heat is the bane of all vinous fermentation, as a tepid one, or rather an imperceptible warmth is the great promoter of them. In this neutral state therefore, with proper contrivances to preserve and continue it, the liquor is to be put into a suitable vessel for fermentation; at which time if it works not of itself, it must be quickened by addi-

additions; and, in general, by ſuch things are generally called ferments. *Shaw*'s Eſſay on Diſtillery. See the articles FERMENT, SPIRITS, MAKING *up*, LOWERING, *&c.*

Malt DISTILLERY. See MALT *Diſtillery.*

DISTORTION (*Cycl.*)—A terrible malady to the human ſhape, has been very often the mere effect of careleſsneſs and ill habits. Mr. Winſlow, in the memoirs of the academy of ſciences of Paris, gives a very remarkable account, to this purpoſe, of a lady of quality, whom he had known to be perfectly ſtrait for ſeveral years; but who taking afterwards to a ſedentary courſe of life, got a cuſtom of dreſſing herſelf very careleſsly, and of leaning as ſhe ſat, either forwards, or to one or the other ſide. It was not many months before ſhe found it troubleſome and painful to ſtand or ſit upright, and ſoon afterwards ſhe found an inequality in the lower part of the back bone: alarmed at this, ſhe conſulted the gentleman who gave the account. Who, to prevent the increaſe of the malady, ordered the wearing a particular ſort of jumps inſtead of her ſtays, and had a pad applied of proper ſize: but this was ſoon neglected; and the conſequence was, that the back bone, in a little time became more and more crooked, and at length bent itſelf ſideways, in two contrary directions, ſo as to repreſent the figure of the Roman S; and the lady refuſing to take the proper meaſures, loſt a fourth part of her height, and continued for the remainder of her life, not only crooked both from right to left, and from left to right; but ſo oddly folded together, that the firſt of the falſe ribs on one ſide approached very near the creſt of the os ilium on that ſide, and the viſcera of the lower belly became ſtrangely puſhed out of their regular places to the oppoſite ſide; and the ſtomach itſelf was ſo compreſſed, that whatever ſhe ſwallowed, ſeemed to her to fall into two ſeparate cavities. Mem. Acad. Scienc. 1740.

DISTRIBUTION (*Cycl.*)—The ſurplus of an eſtate, or *pur autre vie*, is diſtributable by adminiſtrators. See ADMINISTRATORS, *Cycl.*

DISUNITE, in the manege, is uſed for a horſe that drags his haunches, that gallops falſe, or upon an ill foot. See GALLOP.

DITCH (*Cycl.*)—In marſhes, and other wet land, where there are no hedges, the common fence or incloſure for land is a *Ditch*. They allow theſe *Ditches* ſix foot wide againſt highways that are broad, and againſt commons five foot. But the common *Ditches* about incloſures, dug at the bottom of the bank, on which the quick is raiſed, are three foot wide at the top, one at the bottom, and two foot deep; by this means each ſide has a ſlope, which is of great advantage; for where they neglect this, and dig them perpendicular, they are always waſhing down; beſide, in a narrow bottomed *Ditch*, if cattle get down into it, they cannot ſtand to turn themſelves to crop the quick; but where the *Ditch* is four foot wide, it ſhould be two and a half deep; and where it is five wide, it ſhould be three deep, and ſo in proportion.

DITCH *water* is often uſed as an object for the microſcope, and ſeldom fails to afford a great variety of animalcules.

This water very often appears of a greeniſh, reddiſh, or yellowiſh colour; and this is wholly owing to the multitudes of animals of theſe colours which inhabit it. Theſe animals are uſually of the ſhrimp kind: and Swammerdam, who very accurately examined them, has called them from the branched figures of their horns *pulex aquaticus arboreſcens*. They copulate in May and June; and are often ſo numerous at that ſeaſon, that the whole body of the water they are found in, is ſeen to be of a red, green, or yellow colour, according to the colours of their bodies. The green thin ſcum alſo, ſo frequently ſeen on the ſurface of ſtanding waters in ſummer is no other than a multitude of ſmall animalcules of this or ſome of the other kinds. Dunghill water is not leſs full of animals than that of *Ditches*; but is often found ſo thronged with animalcules, that it ſeems altogether alive; this is ſo very much crowded with theſe creatures, that it is proper to dilute it before they can be diſtinctly viewed, by adding clear water to it. There are uſually in this fluid a ſort of eels, which are extremely active; and beſide theſe, and many other of the common inhabitants of fluids, there is one ſpecies found in this which ſeems peculiar to it; the middle part of theſe is dark, and beſet with hairs, but both ends are tranſparent; their tails are tapering, with a long ſprig at the extremity, and their motion is ſlow and wadling. *Baker*'s microſcope, 87. See PEPPER-*water*.

DITONICUM *Diatonum*. See GENUS.

DITRIHÆDRIA, in natural hiſtory, the name of a genus of ſpars. The word is derived from the Greek δις twice, τρις three, and ἑδρα, a ſide, or plane. The bodies of this genus are ſpars compoſed of twice three planes, being formed of two trigonal pyramids joined baſe to baſe, without the intervention of any intermediate column. Of this genus there are five known ſpecies. 1. One with long and pointed pyramids, found in the mines of Cornwall, and ſome other parts of England. 2. One with long and broad pyramids found looſe in the fiſſures of the alabaſter quarries of Blanckenberg in Germany. 3. One with ſhort and broad pyramids found in the mines of Rammelsberg. 4. One with extreamly broad depreſſed pyramids, found in the alabaſter quarries at Blankenberg, and ſometimes in the mines of Goſſelaer in Saxony. 5. One with ſhort but ſharp pointed pyramids, found very frequently in the mines of the Hartz-foreſt, and ſometimes on Mendip Hills with us. *Hill*'s Hiſt. of Foſſ. p. 218.

DITTANY, in Botany, *&c.* See FRAXINELLA.

DITTANY *of Crete*, *dictamnum creticum*, in medicine, was highly extolled by the antients, as a vulnerary, and antidote againſt venomous bites. They alſo gave it to promote the menſes and aſſiſt delivery. With us it is diſuſed, except in ſome officinal compoſitions.

DIVALE, an Engliſh name uſed by ſome writers, and in ſome counties of England in common expreſſion, for the deadly nightſhade, or ſolanum lethale, a plant with poiſonous berries, looking like black cherries. *Ger.* Emac. Ind. 4.

DIVER, in zoology, the Engliſh name of the *Colymbus*, a genus of water birds; the characters of which are, they have narrow, ſtrait, and ſharp bills, their heads are ſmall, their wings ſhort, their feet placed far backward on the body, and near the tail, and their legs broad and flatted, their claws broad like the nails of ones fingers. They are called *Colymbi*, and in Engliſh *Divers*, from their great expertneſs in diving, and long continuance under water.

There are properly two ſubordinate genera of theſe birds. The one having the feet not webbed, but the toes looſe, yet all widened by a membrane, and having no tail. Thoſe of the other genus have webbed feet like the duck, and have tails. Of each of theſe genera there are ſeveral ſpecies; thoſe of the firſt, or ſuch as have no tails are, 1. The *Colymbus major*, or greater loon, called by the Venetians *Fiſſanelle*. 2. The *Colymbus major criſtatus*, or creſted great loon. This is called alſo the *lepus marinus*, or ſea hare, and is common both in Europe and America; the baſe of its beak is covered with a deep yellow membrane; the head is black on the crown and grey on the ſides, the back part of the head is ornamented with a black creſt, the top of the neck is black, and the reſt of the neck is of a mixed colour of red and a ferruginous brown; the back and wings are black, and the breaſt and belly of a greyiſh white; it has no tail, and its toes are ſeparate. 3. The *Colymbus cinereus*, or grey *Diver*. This is a very rare ſpecies, but is found in ſome parts of England; it is all over of a pale grey, and has a creſt behind its head. 4. The *Colymbus major criſtatus & cornutus*, the greater creſted and horned *Diver*; this has a long and ſtrong beak, and the feathers on the top of its head, and on the upper part of its neck, ſtand prominent, and are part black and part yellow; the neck is ſhort, and is all over partly reddiſh, partly black; the breaſt and belly are of a whitiſh red, and the back is mottled with grey, browniſh red, and black. It is common in ſome parts of Yorkſhire; the laſt ſpecies is the common *Dedapper*, or *Dobchick*. See Tab. of Birds, N° 47.

Of the ſecond genus there are only three known ſpecies. 1. The *Colymbus maximus caudatus*, or great tailed *Diver*, which is a very remarkable bird, and ſeems of a middle nature between thoſe web footed fowls, which have their hinder toe joined and brought forward with the reſt, and thoſe which have not. It is of a middle ſize, between the duck and gooſe; its head is ſmall, and its tail rounded at the end; and the upper part of its neck is ſo thick ſet with feathers, that it appears even larger than the head; its colours differ ſomething in the different birds; ſometimes it is ſeen in the back, neck, and head, of a fine black, variegated with white ſpots and lines, and with a ring of white about the neck; and ſometimes without the ring, and with the back of a greyiſh colour, variegated only with ſpots without any lines: poſſibly this may be the difference of the ſexes. It is ſuppoſed, that this bird cannot fly, by reaſon of the ſhortneſs of its wings, but this is erroneous. It is common in Italy, and ſometimes is ſeen with us. The other two ſpecies of the tailed *Divers* are the *Colymbus arcticus Lumme dictus*. The northern *Diver* called the *Lumme*, and the *Colymbus maximus* of Geſner, called the *Fluder*, or ſea fludder. *Ray*'s Mythol. p. 258 to 260. See LUMME and FLUDDER.

DIVERGENCY—For the *Point* of divergency or divergence in optics, ſee VIRTUAL *Focus*, *Cycl.*

DIVERSIFYING, in rhetoric, is of infinite ſervice to the orator; it is an accompliſhment eſſential to his character, and may fitly be called the ſubject of all his tropes and figures. Voſſius lays down ſix ways of *diverſifying* a ſubject. 1. By enlarging on what was briefly mentioned before. 2. By a conciſe enumeration of what had been inſiſted on at length. 3. By adding ſomething new to what is repeated. 4. By repeating only the principal heads of what had been ſaid. 5. By tranſpoſing the words and periods. 6. By imitating them. *Voſſ.* Rhet. l. 5. p. 281. *ſeq.*

DIVIDEND (*Cycl.*) —Stealing of any *dividend* warrants of the Bank, South-Sea Company, Eaſt-India Company, or of any other corporation, is made felony, with or without benefit of clergy, in the ſame manner as if the offender had ſtolen, or taken by robbery, goods to the value of the money due on ſuch *dividend* warrants. Stat. 2 Geo. 2. c. 25. Sec. 3.

DIVIDUAL, in arithmetic, is uſed for that part of the dividend

dend, distinguished by a point, in working by the rule of division.

DIVING (*Cycl.*)—Diving *Bladder*, a term used by Borelli for a machine, which he contrived for *Diving* under the water to great depths, with great facility, and prefers to the common *diving* bell. The vesica, or bladder, as it is usually called, is to be of brass or copper, and about two foot in diameter. This is to contain the *Diver*'s head, and is to be fixed to a goat's skin habit, exactly fitted to the shape of the body of the person. Within this vesica there are pipes, by means of which a circulation of air is contrived; and the person carries an air pump by his side, by means of which he may make himself heavier or lighter, as the fishes do, by contracting or dilating their air bladder: by this means, the objections all other *diving* machines are liable to are obviated, and particularly that of the air; the moisture by which it is clogged in respiration, and by which it is rendered unfit for the same use again, being here taken from it by its circulation through the pipes, to the sides of which it adheres, and leaves the air as free as before. *Borelli* Opera Pusthuma.

DIUIOHU, in Botany, a name given by the people of Guinea to a species of plant, with which they use to ripen and break boils, beating the leaves and laying them on.

DIVISIBILITY (*Cycl.*)--Divisibility *of magnitude*.—All that is supposed, in strict geometry, concerning the *Divisibility* of magnitude, amounts to no more, than that a given magnitude may be conceived to be divided into a number of parts, equal to any given or proposed number. It is true, that the number of parts, into which a given magnitude may be conceived to be divided, is not to be fixed or limited, because no given number is so great but a greater may be conceived and assigned: but there is not, therefore, any necessity of supposing the number of parts actually infinite; and if some have drawn very abstruse consequences from such a supposition, yet geometry ought not to be loaded with them. *Mac Laurin*'s Fluxions, art. 290. See Extension.

DIVISION (*Cycl.*)—The sign of *Division* made use of in algebra, is sometimes a line drawn between the dividend or divisor, thus: $\frac{a}{b}$; sometimes the sign $\div$ is placed between the two quantities thus, $a \div b$. Others, particularly the Germans, after Leibnitz, make use of two points only; thus, $a : b$. All which equally signify a divided by b.

Division, in rhetoric, the arrangement of a discourse under several heads, to be spoken to separately. *Voss.* Rhet. l. 3. p. 366. See Disposition, *Cycl.*

Divisiones, in antiquity, certain presents of money, oil, bread, wine, or the like, appointed by will to be distributed annually among certain persons or companies, and sometimes to the people in general. *Pitisc.* Lex. Ant. in voc.

DIUTURNITY, the long continuance or duration of any being.

DIZOSTOS, in Botany, a name given by some of the old Greek writers to the *apios* or knobby rooted spurge: it is so called, because of its having usually two or three slender, and rush like stalks, growing up from the roots, which seem as if they were fit to be used as cords or bandages. See the article Apios.

DO, In the Italian music, is a syllable used instead of *ut*, being supposed more resonant and musical than *ut*. *Bross.* Dict. Mus. in voc.

Do *Law*. To *do law*, *facere legem*, is the same as to *make law*, anno 23 Hen. 6. c. 14. See Make.

DOBCHICK, in zoology, the common English name of a small water fowl, the least of all the *Diver* kind, and known among authors by the name of *Colymbus minor*. It seldom exceeds six ounces in weight, and has a short beak not more than a finger's breadth long, large at the base, but tapering to a point at the end; its eyes are large, and it is covered with a very thick downy plumage; it is of a very deep blackish brown on the back, and very white on the belly; its wings are very small, and it has no tail.

DOBULA, in ichthyology, a name given by Gesner, and other writers to the chubb. It has been called *capito* and *cephalus* by the moderns, and *squalus* by the antients; but it requires no generical name, being properly only a species of the cyprinus. See the articles Cephalus and Cyprinus.

Dobula is also used for a fresh water fish, of the leuciscus, or dace kind, but is of a larger and thinner shape, and a much better tasted fish. It is caught in the fresh waters of Germany about Hamburgh, and in many other places. *Schonefeldt* Hist. pisc.

DOCIMASIA, Δοκιμασια, in antiquity, a custom among the Athenians, by which every man, before he was admitted to a public employment, was obliged to give an account of himself, and his past life, before certain judges in the forum; for if any man had lived a vicious and scandalous life, he was thought unworthy of the meanest office. Nor was this thought enough: for the first ordinary assembly after their election, they were a second time brought to the test; when, if any thing scandalous was found against them, they were deprived of their honours. *Pott.* Archæol. Græc. l. 1. c. 11. T. 1. p. 73.

DOCIMASTICAL *Experiments*. See Assaying.

DOCIMENUM *marmor*, a name given by the antients to a species of marble, of a bright and clear white, much used in the large sumptuous buildings, as temples and the like. It had its name from Docimenos, a city of Phrygia, afterwards called Synaia, near which it was dug, and from whence it was sent to Rome. It was accounted little inferior to the Parian in colour, but not capable of so elegant a polish; whence it was less used by the statuaries, or in other smaller works. The Emperor Adrian is said to have used this marble in building the temple of Jupiter, and many other of the great works of the Romans are of it.

DOCK (*Cycl.*)—Dock-*root*, in the materia medica. See the article Lapathi *radix*.

Dock, in the manege, is used for a large case of leather, as long as the *Dock* of a horse's tail, which serves it for a cover. The French call the *Dock*, *trousse-queue*. It is made fast by straps to the crupper; and has leathern thongs that pass between his thighs, and along the flanks to the saddle straps, in order to keep the tail tight, and to hinder it to whisk about.

Dock-*Yards*, in ship-building, are magazines of all sorts of naval stores; the principal ones in England, are those at Chatham, Portsmouth, Plymouth, Woolwich, Deptford, and Sheerness. In time of peace, ships of war are laid up in these *Docks*, those of the first rates mostly at Chatham, where, and at other yards, they receive, from time to time, such repairs as are necessary.

These yards are generally supplied from the northern crowns, with hemp, pitch, tar, rosin, and several other species. But as for masts, particularly those of the largest size, they are brought from New England.

How much it imports the good of the public, to keep those magazines constantly replenished, every one is able to judge: and it were much to be wished, the improving the fore-mentioned commodities in our English plantations, might meet with all possible encouragement; lest one time or other, it may prove difficult to get them elsewhere. It is reasonable to think such an undertaking will put the nation to some considerable charge, ere it be brought to perfection; but when so, many are the advantages that will arise from it.

DOCTOR (*Cycl.*)—A *Doctor* of the civil law may exercise ecclesiastical jurisdiction, though a layman. Stat. 37 Hen. 8. c. 17. Sect. 4.

DODDER, *Cuscuta* and *Epithymum*, in medicine, is an attenuant and aperient; and as such prescribed in obstructions of the viscera, in dropsies, jaundies, and other chronic diseases. See Cuscuta and Epithymum.

DODECACTIS, in natural history, a name by which Linkius, and some other authors, have called a kind of astrophyte, or branched star-fish, which has twelve rays, first parting from the body, and each of these finally divided into many others.

DODECADACTYLON, in anatomy, a name given by some of the old authors, to the gut called the *duodenum*, from its being usually about twelve fingers breadth long.

It is the first part of the small guts, beginning from the pylorus of the stomach, and ending where the gut *jejunum* begins: it is so called, as if it were the length of twelve fingers, which yet is never observed in any men amongst us; perhaps the antients mistook, from inspecting the guts of some brutes. It is most usually called *Duodenum*. *Blancard*.

DODECANDRIA, in Botany, a class of plants which have hermaphrodite flowers, with twelve stamina or male parts in each. See Tab. 1. of Botany, Class 1.

The word is formed of the Greek δωδεκα twelve, and ανηρ male. Of this class of plants are the asarabacca, agrimony, &c.

DODO, in zoology, the name of a bird, called also by some *cygnus cucullatus*, by others *gallus gallinaceus peregrinus*, and by Bontius *dronte*. It is a very singular bird, somewhat larger than a swan, but wholly different from the swan in shape, though by some esteemed a kind of that bird. Its head is large, and is covered with a membrane resembling a hood; its beak is of an oblong figure, and is yellow at its origin and black at the point, and is somewhat crooked: it is very naked, having only a few feathers scattered over its body, and the rudiments of wings made up of a few naked quills; the hinder part of its body is very bulky and fat, and has a tail made of four or five curled greyish feathers, resembling those of the ostrich. Its legs very thick and strong. See Tab. of Birds, N° 22. *Ray*'s Ornithol. p. 107.

DODONÆA, in botany, the name of a genus of plants about which authors were very unsettled in their opinions, till Linnæus characterized it under this name. Burman has made it a species of the carpinus, and Plumier of the staphylodendron. The characters are these: The perianthium is divided into three oval, erect, and equal segments. There are no petals. The stamina are eight in number, and are extremely short. The antheræ are of an oblong figure, they stand very low, and

and ſcarce exceed the length of the cup. The germen of the piſtil is of a three-corner'd ſhape, the ſtyle is ſubulated and very long, and the ſtigma is ſimple. The fruit is a roundiſh capſule, having three inflated cells with prominent angles. The ſeeds are contained one in each cell. The cup has ſometimes four ſegments, and the fruit four cells. *Linnæi*, Gen. Pl. p. 159.

DODRA, in Roman antiquity, a drink prepared from nine different ingredients; which are enumerated by the epigrammatiſt in the following line,

Jus, aqua, mel, vinum, panis, piper, herba, oleum, ſal.

Vid. *Auſon.* Epigram. 86. *Pitiſc.* Lex. Ant. in voc.

DOG (*Cycl.*)— The manner of chuſing a *Dog* and bitch for breeding of good whelps is this. The bitch muſt be of a good kind, and well proportioned, with large ribs and flanks. The *Dog* muſt be of a good kind, and young. The beſt rule is, that a young *Dog* and an old bitch breed excellent whelps. The months of January, February, and March are the beſt for theſe creatures to couple in. The bitch ſhould be uſed to a good kennel, that ſhe may like it after her whelping, and ſhe ought to be kept warm at the time. The whelps ſhould be weaned at two months old, and the firſt or ſecond never choſen. Among the reſt it is hard to chuſe which is beſt: but many prefer that which was pupped laſt againſt all other appearances.

Another method of chuſing is the taking the cunning of the bitch into the aſſiſtance, by removing the whole litter out of the kennel, and watching to ſee which ſhe takes up firſt to carry back: this is eſteemed the beſt and ſtrongeſt puppy. Others chuſe by weight, eſteeming the lighteſt puppy likely to make the beſt *Dog*. As ſoon as the choice is made, which ſhould be ſoon after the creature has littered, all thoſe are to be drowned which are not pitched upon, that thoſe which are to be bred up may have the more care and the better nouriſhment. Hounds for the chace are to be choſen by their colours: the white with black ears and a black ſpot at the ſetting on of the tail, are generally eſteemed the beſt to compoſe a kennel of, and are of the beſt ſcent and condition. The black hound, the black tanned, or the all liver-colour'd, or all white, the true Talbots, are beſt for the ſtring or line; and the grizzled, whether mixed or unmixed, if their hairs are ſhagged, are uſually the beſt runners. There ſhould always be a couple of theſe in the pack.

The general marks of a good hound are, that the head be in a good proportion, neither too long, nor too round, but rather inclining to the former than the latter; the noſtrils ſhould be even, the ears large, the back broad, the fillet great, the haunches large, the thighs well truſſed, the hams ſtrait, tall, and big near the reins, the reſt ſlender, the leg ſhould be big, and the ſole of the foot dry, and in the form of that of a fox, with long and large claws.

DOG-*Fly*, *Cynomyia*, in natural hiſtory, the name of a ſpecies of fly common in woods and among buſhes, and particularly troubleſome to dogs. It uſually ſeizes upon the ears, and 'tis in vain to beat it off, for it returns in a moment, and cannot be prevented but by being killed. It ſtings very ſeverely, and always raiſes a bliſter in the part. It ſomewhat reſembles the flat black fly ſo troubleſome to cattle. It has no trunk, but has two teeth much reſembling thoſe of the waſp. Its wings are always placed ſo cloſe upon its body that they are not ſeen. There are two kinds of it, one larger and found in woods, and the other common in hedges.

DOG-*Roſe*, a name for the common bryar or hip-tree. It is obſervable of ſome kinds of this ſhrub, that the flowers ſmell extremely ſweet in the night, or very early in the morning, but not at all ſo in the day-time. The reaſon of which ſeems to be the ſame as in all the noctuolent plants, of which there are ſeveral kinds, as ſome of the geraniums, and of the jaſmines, *&c.* that is, that the ſun exhales and diſſipates their odorous effluvia in the day-time as ſoon as they are expanded from the flower, but that in theſe cold times the vapours are condenſated, and reach our noſe in an agreeable manner. Phil. Tranſ. N° 114.

Mad DOG. See MAD.

Water DOG. See WATER.

DOGA, in antiquity, a large veſſel into which the wine was put when newly brought from the vintage. *Pitiſc.* Lex. Ant. in voc.

DOGGERS, in the Engliſh alum works, a name given by the workmen to a ſort of ſtone found in the ſame mines with the true alum rock, and containing ſome alum, though not nearly ſo much as the right kind. The county of York, which abounds greatly with the true alum rock, affords alſo a very conſiderable quantity of theſe *Doggers*; and in ſome places they approach ſo nearly to the nature of the true rock, that they are wrought to advantage.

Whether the finer of theſe *Doggers*, or the right alum rock be uſed, they always add urine and a ſea-weed in the making the alum. Moſt of the hills between Scarborough and the river Tees abound in both kinds of ſtone, and there is alſo a great abundance of it about Preſton in Lancaſhire. It is of a bluiſh colour. Thoſe mines which lie deep in the earth, and are tolerably well moiſtened with ſprings, are the beſt. Thoſe mines that are abſolutely dry are not good, and the ſtone they contain is often of the *Dogger* kind inſtead of the true rock. On the other hand, where there is too much water the ſtone is apt to be rotted and corrupted, and a great quantity of the alum is loſt.

The mine often lies ſeventy yards or more under the ſurface of the earth; and for the more convenient working of it, they generally begin to dig on the declining of a hill, where they may have water at command. They dig down the mine by ſtages to ſave carriage, and to throw down the ſtone ore near the place where they calcine it.

The true alum rock, while it remains in the earth, is a hard ſtone; but on being expoſed to the air, it moulders in pieces, and yields a liquor of which vitriol or copperas is made; but being calcined, it yields no vitriol, but is fit for the making of the alum. The *Doggers* are of the ſame hardneſs with the true rock while in the earth, but they do not break and moulder ſo eaſily in the air where the mine is all of the true rock. There will often iſſue out at its ſides a brackiſh water, which is a ſort of liquid alum, and with the ſun's heat will be evaporated, and leave pure alum behind it. The general way of calcining the rock is with cinders of Newcaſtle coal, wood, and furze-buſhes. The fire place is made about two foot and a half thick, two yards wide, and ten yards long; and betwixt every two fires of this kind there are ſtops made of wet rubbiſh, ſo that any one or more of them may be kindled without damage to the reſt. They lay on every heap of this fewel eight or ten yards thickneſs of the alum rock broken to pieces, and then kindling the fire, as it burns up toward the top, they lay on more and more of the rock. The ſulphur remaining in the ſtones aſſiſts the burning; and if the heap be finally carried to twenty yards high, it will burn as fiercely at the top as at the bottom. When the ſtones are properly calcined they become whitiſh; but in windy weather the fire is apt to be irregular, and where it is carried moſt by the wind it over calcines the ſtones, and makes them red; and where it has leaſt force, they are left black and half calcined; ſo that to the proprietor of a work of this kind, it is of great conſequence to attend a fair day for the burning. The alum rock when thus calcined is thrown into pits of water, where there is a communication with other pits to the number of four; and it is ſo contrived, that every parcel of the alum rock is waſhed with four waters, and every quantity of the liquor, before it comes to the boiling, has waſhed four parcels of the rock; every quantity of the rock is left four and twenty hours ſteeping in the water, and conſequently every parcel of the liquor is four days in preparing before it comes to the boiling-houſe.

When the works are firſt begun in any place, they uſually boil the liquor into alum alone without the mixture of any other ingredient; but after a time they generally add the ſea-weed and urine to ſave expence by procuring the more alum from an equal quantity of the liquor. The things they add are the urine of healthful people, and the ſalt extracted from the ſea-weed, which is a ſort of pot-aſh. The urine of poor labouring people, who drink little ſtrong drink, is beſt. The kelp or pot-aſh is put into the liquor while boiling, but the urine is put into veſſels of wood cover'd with clay, and the liquor after boiling is put to it. The redder the liquor looks, the more urine is required in proportion to it. The liquor remains four days in theſe veſſels; the alum begins to ſhoot on the ſecond day, and continues ſhooting till the end of the fourth. The maſters of the works not being willing to loſe time, never ſuffer the liquor to remain more than four days in the coolers: they tell the workmen that if it ſtood longer the ſalt would turn to copperas or green vitriol, which ſtory, however abſurd, is firmly believed by them.

Temperate weather is greatly the moſt eligible for alum making; if the weather be too hot, the liquor is longer in cooling, and the alum in gathering, than it ſhould be, and is always obtained in leſs quantity, though purer, than otherwiſe. In very cold and froſty weather, on the other hand, the alum ſhoots too ſoon, and the nitrous matter and ſlime not having time to ſubſide, are mixed with the alum. This produces ſometimes a double quantity of alum, but ſo foul, that it is afterwards in great part conſumed in the waſhing. This waſhing is done with water already impregnated very ſtrongly with alum, ſo that the ſalt when tolerably pure loſes little or nothing by it. Being waſhed, it is put into another pan with a quantity of water, where it melts and boils a little; and thence it is ſcraped into a great cask, where it commonly ſtands ten days, and is then fit for the market. The *Doggers* treated in the ſame manner as the alum rock yield the ſame ſalt, but in leſs quantity, and are often not worth the expence of working; as ſome of them are however much richer in alum than the others, it is always worth while to try them, where they are found in large quantities, and in ſufficiently convenient places for working. Philoſoph. Tranſact. N° 142.

DOGGER-*fish*, in our ſtatutes, ſeem to be fiſh brought in the fiſhing veſſels, called *Doggers*, to Blackneſs Haven, *&c.* anno 31 Edw. 3. Stat. 3. c. 2.

DOGGER-*men*, fiſhermen belonging to *Dogger* ſhips. 25 Hen. 8. c. 4.

DOGGET. See DOCKET.

DOGS-BANE, *Apocynum*, in Botany, the name of a plant, which conſtitutes a large genus, the characters of which are theſe: the flower conſiſts of one leaf and is made in the faſhion of a bell, but not regularly figured in all the ſpecies.

In ſome the flower is bell faſhioned, and divided into ſeveral ſegments; and from its cup there ariſes a piſtil, which perforates the bottom of the flower, and is fixed to its hinder part like a nail; this changes into a fruit, compoſed of two vaginæ, and opening from the baſe to the apex, and filled with large quantities of ſeeds, winged with down, and fixed to a rough placenta. *Tournefort's* Inſt. p. 91.

In others the flower is bell faſhioned, and is multifid and inverted; and its middle is filled by a very elegant head, compoſed of five little horns expanded into a circle; to the lower part of this head there is affixed a piſtil, which is joined to it in the manner of a nail; this ariſes from the cup, and finally ripens into a fruit, compoſed of two vaginæ, which open from the baſe to the apex, and contain numerous ſeeds, winged with down, and placed in the manner of ſcales, and affixed to a foliacious placenta. To this, it is to be added, that the *Apocynums* all abound with a milky juice.

The ſpecies of *Apocynum* enumerated by Mr. Tournefort are theſe. 1. The upright, hoary, broad leaved Egyptian kind, called by many authors *Beidelſar*. 2. The hoary broad leaved erect kind of malabar, with purpliſh white flowers. 3. The hoary broad leaved erect American kind, with pale bluiſh red flowers. 4. The hoary broad leaved erect Syrian kind, with ſmall dusky purple flowers. 5. The great erect Syrian kind, with green ſtalks and whitiſh flowers. 6. The narrow leaved erect Syrian kind. 7. The ſmall erect American kind, with very long and narrow leaves. 8. The Virginian kind, with a green flower, and very long pod. 9. The Indian *Apocynum*, with leaves like thoſe of the tutſan, and flowers like thoſe of the lilly of the valley, and of a beautiful reddiſh colour. 10. The roundiſh leaved *Apocynum*. 11. The Venetian, willow leaved ſea *Dogsbane* with purple flowers. This has been called very improperly by ſome a *tithymal*, *eſula*, and *alypum*. 12. The hairy *Apocynum* of New England, with a tuberous root and yellow flowers. 13. The *Dogsbane* of Curaſſo, with long leaves, like thoſe of oleander, and with a fibroſe root, and orange coloured flowers. 14. The broader leaved orange coloured flowered *Dogsbane* of Curaſſo. 15. The erect African *Dogsbane*, with a broad, ſmooth, and willow like leaf, and a hairy pod. 16. The green climbing *Apocynum*, with periwinkle leaves, and a hairy fruit. 17. The hoary climbing *Dogsbane*, with periwinkle leaves. 18. The climbing African *Dogsbane*, with a tuberoſe root, like that of aſphodell, and very narrow leaves. 19. The American *Apocynum*, with leaves like thoſe of the agnus caſtus. 20. The climbing American *Dogsbane*, with a large hairy yellow flower, and very long and ſlender pods. 21. The long almond leaved American *Dogsbane*. 22. The climbing American *Dogsbane*, with almond like leaves, and pods like thoſe of the emerus. 23. The climbing American *Dogsbane*, with pods rough at the end, and ſticking to peoples cloaths. 24. The citron leaved, climbing American *Dogsbane*, with ſpotted pods. 25. The bay-leav'd and climbing American *Dogsbane*, with white umbellated flowers. 26. The Tree *Dogsbane* of the Canaries, looking like æleagnus. And 27. The ſhrub by the Spaniſh *Dogsbane*, with leaves like thoſe of toad's flax. Moſt of the ſpecies are poiſonous. *Tourn.* Inſt. p. 92.

DOG's-*tail*, in Botany. See CYNOSURUS.

DOG's-*teeth*, in anatomy. See DENTES *Canini*.

DOG's-*tooth*. in Botany. See DENS *Canis*.

DOG-*wood*—This wood, when put into water, is ſaid to ſtupify fiſh there, ſo that they are eaſily taken with the hand. It is uſed in America for this purpoſe, and the method is to tie it to the ſtem of the fiſhing boat. See *Boyle's* Works abr. vol. 1. p. 137. It is the wood of a ſpecies of cornus.

DOITKIN, a kind of baſe coin of ſmall value, prohibited by the ſtatute 3 Hen. 5. c. 1. Hence came the phraſe, *Not worth a Doitkin*.

DOLABRUM, among the Romans, a kind of knife uſed in ſacrifices among that people. Vid. Hiſt. Acad. Inſcript. T. 2. p. 345.

DOLE, (*Cycl.*) in the law of Scotland, is uſed for a malevolent intention. The word is taken from the civil law term *Dolus*.

Dole, in the law of Scotland, as well as in the civil law, is an eſſential ingredient to conſtitute an action criminal. In crimes wherein the will, not the event muſt be regarded, no negligence can equal *Dole*; unleſs the negligence be ſo extremely ſupine, as not to be conceivable without implying *Dole*.

Under *Dole* are comprehended the vices and errors of the will, which are immediately productive of the criminal fact, though not premeditated, but the effect of ſudden paſſion. In this reſpect *Dole* differs from what the Engliſh law calls malice. However both laws agree in this, that the bare intention never brought forth into act, is no crime; yet giving counſel to perpetrate, and the fact following, is.

DOLE-*fish*, in our ſtatutes, ſeems to be that fiſh, which the fiſhermen, yearly employed in the north ſeas, do of cuſtom receive for their allowance or ſhares. V. ſtat. 35 Hen. 8. c. 7.

DOLET, in natural hiſtory, a word uſed by ſome writers, in medicine, for red vitriol, or colcothar of vitriol.

DOLG-BOTE, in the Saxon laws, a recompence, amends, or ſatisfaction, made for a ſcar or wound. Sax. Dict. LL. Aluredi Regis, c. 23.

DOLICHODROMUS, in the antient exerciſes, one who ran the length of a *Dolichos*. See DOLICHOS.

DOLICHOLITHOS, in natural hiſtory, a name given by ſome authors to a ſpecies of ſtone, of a blackiſh colour, and of the ſhape of a kidney bean, found in great abundance about Tyrol, and yielding a ſmell on rubbing.

DOLICHOS, in Botany, the name of a genus of plants of the papilionaceous kind; the characters of which are theſe: the perianthium is compoſed of one leaf; it is very ſhort, and is divided into four ſegments at the end; the upper ſegment is emarginated. The flower is of the papilionaceous kind; the vexillum is roundiſh, large, and emarginated, and is wholly bent backward; and there are two callous oblong bodies running parallel to one another, and growing in the tender part of the vexillum toward its baſe. Theſe compreſs the alæ together: the alæ are of an obtuſe oval figure, and are of the length of the carina: the carina is compreſſed, the filaments are diadelphous, and the antheræ are ſimple. The germen of the piſtil is ſlender and compreſſed, the ſtyle points upward, the ſtigma is bearded, and runs from the middle of the inner part of the ſtyle to its apex, which is callous and obtuſe. The fruit is a large pod of a pointed oblong figure, it is bivalve, and is divided into two cells; the ſeeds are of an elliptic figure, and uſually are compreſſed. This plant approaches greatly to the phaſeoli, but is diſtinguiſhed at firſt ſight by the carina of the flower, which is not ſpiral, as in that genus. *Linnæi* Gen. Pl. p. 350.

DOLICHOS, in antiquity, a word uſed by different writers in different ſenſes. The antient phyſicians underſtood by it long or prolix, and uſed it in this ſenſe in their deſcriptions of diſeaſes. Others uſed it for the fruit or pod of the kidney bean. Suidas makes it ſignify a race, or courſe, of twelve ſtadia, or of twenty-four.

DOLIUM, in natural hiſtory, the name of a genus of ſhells, called by ſome *conchæ globoſæ*, and by the French, *tonnes*. The characters are theſe: it is an univalve ſhell, with a globoſe, or round belly, with a lax aperture, ſometimes ſmooth and ſometimes dentated. The clavicle is either moderately umbonated or depreſſed; and the columella is, in ſome ſpecies ſmooth, in others wrinkled. Some authors have called theſe *conchæ ampullaceæ*; and they have had, at times, many other names, but all tending to the ſame ſenſe, and expreſſing the globular figure of the body, which is the great character by which theſe are diſtinguiſhed from all other ſhells. See Tab. of ſhells, N° 15.

The Perſian ſhell, ſo much eſteemed in cabinets, is a very ſingular one; but the globoſe figure of its body evidently refers it to this genus, though it differ in many other particulars from all the ſpecies of it. Aldrovandus could not tell what to make of the ſhells of this genus; but has thrown them together at the end of his book, obſerving, that they would ſeem of the turbinated kind, but that they want the turbo. Hiſt. Naturel. Eclairc. p. 300.

The author of the Armarium Balfourianum, calls the Perſian ſhell the *turbo cochlea*; and ſays, that many range it among the porcelains. The Ethiopian crown is another very remarkable ſpecies of the *Dolium*; it is always of a fine yellow, and is ſurrounded with a crown of regular eminences. The lyra, or harp ſhell, called alſo the caſſandra, is another very elegant ſhell of this genus, often finely variegated with the moſt brilliant colours. That peculiar ſpecies, known by the name of lyra nobilis, is variegated in an extreamly elegant manner, with a dark brown. The fig and the radiſh ſhells are alſo of this genus, and are very particular in their long ſhape, their crooked tail, and their colours. *Fabius Column.* de Purpura. p. 28. c. 18.

Rumphius is very much to be blamed for confounding theſe ſhells with the helmet ſhell kind, which he calls *Caſſides*. But nothing can be more erroneous than this, as the helmets are a genuine kind of murex, and theſe a genus wholly diſtinct from thoſe, and from all other ſhells. The ſhell which Rondeletius has figured under the name of the echinophora, is alſo one of theſe globoſe ſhells, or dolia, and is covered all over with ſmall and ſhort ſpines, or buttons: he has placed it among the buccinums. Armarium Balfour. p. 144.

Fabius Columna has deſcribed the little gondola ſhell, which is a ſpecies of this genus, much at large; and ſays, that it ſails at pleaſure in the manner of the nerites; he calls it conchæ natatilis, or neritodes minima. This genus of ſhells, comprehending a great number of ſpecies; and there appearing

ing among them ſeveral marks and characters peculiar to certain ſpecies, and not to others; it may be proper to arrange them under ſeveral ſeries denoted by theſe marks.

I. Of the round umbilicated *Dolia* we find the following ſpecies. 1. The white, thin, and ſtriated *Dolium*. 2. The furrowed *Dolium*, with yellow circular ridges. 3. The furrowed *Dolium*, ſurrounded with ſpotted ridges. 4. The partridge ſhell, or regularly ſpotted and ſtriated *Dolium*. 5. The white thick *Dolium* furrowed all over, and with dentated edges. 6. The ſtriated and ſpotted *Dolium*, with a wrinkled columella.

II. Of the oblong and ſmooth *Dolia*, we have the following ſpecies. 1. The yellow *Dolium*, without an umbo. 2. The white *Dolium*, with an umbo. 3. The Ethiopian crown, or the brown coronated *Dolium*, with an umbo. 4. The oblong *Dolium*, with no umbo. 5. The contabulated and variegated *Dolium*, with an exerted clavicle.

III. Of the oblong coſtated and umbonated *Dolia* we have the following ſpecies. 1. The *Lyra* or *Harp-ſhell*, pennated and adorned with thicker roſe coloured ribs. 2. The *Harp-ſhell*, with eleven ribs. 3. The noble *Harp-ſhell*; this is of a very elegant figure, and is of a brown colour variegated with white. 4. The reddiſh *Harp-ſhell*, with fourteen red ribs. 5. The umbonated *Perſian ſhell*, otherwiſe called the *Perſian Purpura*, or *Panama ſhell*. When this is poliſhed, it appears of a very different kind, and has ſeveral white lines on it, and is ſmooth. 6. The *Mullberry-ſhell*. 7. The ſtriated *Dolium*, with brown and white ſpots.

IV. Of the *Dolia* of the fourth ſeries, which have long and arched tails, there are the following ſpecies. 1. The *Fig-ſhell*, with a depreſſed clavicle. 2. The violet coloured, or ametleyſtine rediſh *Dolium*. 3. The ſtriated pale yellow *Dolium*. 4. The thick yellow *Dolium*, with ſtreaks and protuberances regularly placed. 5. The white *Dolium*, with ſtreaks and protuberances placed regularly.

V. Of the *Dolia* of the fifth ſeries, which from their ſhape are called bullæ, we have the following ſpecies. 1. The great and thick *Gondola ſhell*; this is of a grey colour, and is called by ſome the *ſea nut*. 2. The oblong greeniſh *Gondola ſhell*. 3. The oblong reddiſh *Gondola ſhell*. 4. The thin white papyraceous *gondola ſhell*. 5. The yellow *Gondola ſhell*, with four brown faſciæ. 6. The yellow *Gondola ſhell*, with brown capillary ſtreaks. 7. The great white *Gondola ſhell*, umbilicated on each ſide.

VI. To theſe is to be added a very rare ſpecies of *Dolium*, which is faſciated, of a blue colour on the outſide and white within, this is called by ſome the *Vitta Cerulea*; and there is an olive coloured ſhell of the ſame kind. Hiſt. Nat. Eclairc. N° 303.

DOLPHIN, (*Cycl.*) in ichthyology, the Engliſh name of a fiſh of the cetaceous kind, called alſo ſometimes the *Porpeſſe*, but improperly. The word *Porpeſſe* is properly the name of the conick bodied *Dolphin*, with a broad back and ſubacute ſnout; but the *Dolphin*, properly ſo called, and to which the name *Porpeſſe* is erroneouſly given, is the *Delphinus* of Artedi, with an oblong and ſubcylindric body, and a long and acute ſnout. This is the *Delphis* of Ariſtotle and the other Greek writers, and the other properly called the *Porpeſſe* is their *Phocæna*. Ælian, Appian, and Athæneus, all join in calling this *Dolphin*, properly ſo named, the *Delphis* and *Delphin*, and the ſame name is preſerved by all the more accurate of the Latin writers. See DELPHINUS.

DOLPHIN, is alſo a name given by the Engliſh to the fiſh called *Hippurus*, by the generality of authors; but by ſome *Hippoſele* and *Equiſele*, and by others *Dorado*. According to the new ſyſtem of Artedi, this fiſh is a ſpecies of the *Coryphæna*, and is diſtinguiſhed from all the other kinds, by its having a forked tail. See HIPPURUS and CORYPHÆNA.

DOM *and* SOM, words uſed in antient charters, ſignifying a power of judging, and ſecurity in poſſeſſing.

DOMENGER, in middle age writers, is ſometimes uſed for damſel. See DAMSEL, *Cycl.*

DOMICELLUS. See DAMSEL, *Cycl.*

DOMINARUM AQUA, a name given by Mynſicht to a diſtilled water, which he recommends to the ladies to facilitate delivery.

DOMNICELLUS. See DAMSEL, *Cycl.*

DOMO *Reparanda*, a writ that lies for one againſt his neighbour, by the fall of whoſe houſe he fears damage to his own. Reg. of writs, fol. 153. In which caſe the *Civilians* have the action *de damno infecto*.

DONARIA, among the antients, in its primary ſignification, was taken for the places where the oblations offered to the gods were kept; but afterwards was uſed to denote the offerings themſelves; and ſometimes, though improperly, the temples. *Hofm.* Lex. in voc.

DONAX, in zoology, a name by which ſeveral of the old authors have called the ſolen or razor fiſh. See SOLEN.

DONAX, in botany, the name by which ſome authors call the great reed, the arundo maxima, or arundo cypria of others. *Tourn.* Inſt. p. 256. See ARUNDO.

DONGON, in natural hiſtory, a name given by the people of the Philippine Iſlands to a peculiar ſpecies of crane, which has a large body like a gooſe, and a ſhorter neck than the common kind: it has a long and very broad beak, and is of a grey colour; they have, beſides this, another ſpecies of crane, which they call tipul or tihol; as remarkable for the length of its neck and legs, as this for the breadth of its beak. This tipul can ſtand erect, and look over a tall man's head. See TIPUL.

DONNA, or *La* DONNA, in ichthyology, a name given by Zuchelli, and ſome other authors, to the manati or ſea cow. See the article MANATI.

DONZELLINA, in zoology, a name by which ſome called the *julis* a very beautifully painted fiſh, of the Mediterranean, approaching to the nature of the turdus or wroſſe. *Willughby*, Hiſt. piſc. p. 324. See the article JULIS.

DOR, the Engliſh name for the common black beetle. Some alſo apply it to the duſty beetle, that flies about hedges in the evening. See SCARABÆUS.

DORADO, in zoology, the name of a large ſea fiſh, called by the Braſilians guaracapema; and ſo much reſembling the hippuris, as by many to be ſuppoſed to be the ſame fiſh; it grows to ſix or ſeven feet in length, and is of a ſomewhat broad and flatted form, being a foot and a half broad near the head; the head ends in a ſquare, and is thinned away to an edge, for the advantage of the creatures ſwimming the more ſwiftly. Its mouth is but ſmall for its ſize, and is furniſhed with very ſharp teeth; its eyes are large and round, and placed but a little above its mouth; its gills are large. It has one long fin running the whole length of the back, and another anſwering it on the belly, reaching from the anus to the tail; the tail is long, large, and forked; its ſcales are very ſmooth, and ſcarce ſenſible to the touch; its head, back and ſides are of a ſilver green, its belly white; its back and ſides are ſpotted with blue; it is a very ſwift fiſh in ſwimming, and is a very delicate and well taſted one. *Willughby*, Hiſt. piſc. p. 214.

DOREAS *Lybica*, in natural hiſtory, the name by which Ælian and ſome other authors have called the common antelope. See GAZELLA.

DOREE, or *John* DOREE, in ichthyology, a name given by us to a fiſh, called by authors, the faber and gallus marinus. We have borrowed the name *Doree* from the French; and, as to the word *John*, by ſome writers prefixed to it, it ſeems only a corruption of the French word *jaune*, yellow. They expreſſing the colour of the ſides of this fiſh, which is a gold yellow, by the phraſe *jaune doreé*: this has given us the words *John Doreé*, or by thoſe who ſpell yet worſe, *John Dory*; as we ſee it in ſome authors. See FABER.

According to the new Artedian ſyſtem, this is a ſpecies of the Zeus, and is diſtinguiſhed by that author from the others of that genus, by the name of the Zeus, with a prickly belly, and with a tail, not forked at the end, but rounded. *Willughby*, Hiſt. piſc. p. 295. See Tab. of fiſhes, N° 50, and ZEUS.

DORIALTIDES, in natural hiſtory, the name of a ſtone, to which great virtues, medicinal and magical, were attributed by the writers of the middle ages. It was ſaid to be found in the head of a cock, or of ſome other animal; and that it was made lucid by being laid on an ant-hill, the account ſeems altogether idle and imaginary.

DORIAN, in antient muſic, the fourth ſpecies of the diapaſon. See DIAPASON.

DORING, or DARING, among the ſportſmen, a term uſed to expreſs a method of taking larks, by means of a clap-net and a looking-glaſs. For this ſport there muſt be provided four ſticks, very ſtrait and light, about the bigneſs of a pike; two of theſe are to be four foot nine inches long, and all notched at the edges, or the ends. At one end of each of theſe ſticks there is to be faſtened another of about a foot long on one ſide; and on the other ſide a ſmall wooden peg, about three inches long. Then four more ſticks are to be prepared, each of one foot length; and each of theſe muſt have a cord of nine foot long faſtened to it at the end. Every one ſhould have a buckle for the commodious faſtening on to the reſpective ſticks when the net is to be ſpread.

A cord muſt alſo be provided, which muſt have two branches. The one muſt be nine foot and a half, and the other ten foot long, with a buckle at the end of each: the reſt, or body of the cord muſt be twenty-four yards long. All theſe cords, as well the long ones, as thoſe about the ſticks, muſt be well twiſted, and of the bigneſs of ones little finger. The next thing to be provided is a ſtaff of four foot long, pointed at one end, and with a ball of wood on the other, for the carrying theſe conveniencies in a ſack or wallet.

There ſhould alſo be carried, on this occaſion, a ſpade to level the ground where there may be any little irregularities; and two ſmall rods, each eighteen inches long, and having a ſmall rod, fixed with a packthread at the larger end of the other. To theſe are to be tied ſome packthread loops, which are to faſten in the legs of ſome larks; and there are to be reels to theſe, that theſe birds may fly a little way up and down.

When all this is done, the looking-glaſs is to be prepared in the following manner. Take a piece of wood, about an inch and half thick, and cut it in form of a bow, ſo that there may be

about

about nine inches ſpace between the two ends; and let it have its full thickneſs at the bottom, that it may receive into it a falſe piece; in the five corners of which, there are to be let in five pieces of looking-glaſs. Theſe are to be ſo fixed, that they may dart their light upwards, and the whole machine is to be ſupported on a moveable pin, with the end of a long line fixed to it; and made in the manner of the childrens play-thing of an apple and a plum-ſtone; ſo that the other end of the cord being carried through a hedge, the barely pulling it may ſet the whole machine of the glaſſes a turning. This and the other contrivances are to be placed in the middle between the two nets. The larks fixed to the place, and termed calls, and the glittering of the looking-glaſſes, as they twirl round in the ſun, invite the other larks down; and the cord that communicates with the nets, and goes through the hedge, gives the perſon behind an opportunity of pulling up the nets, ſo as to meet over the whole, and take every thing that is between them. The places where this ſort of ſporting ſucceeds beſt are open fields remote from any trees or hedges, except one by way of ſhelter for the ſportſman, and the wind ſhould always be either in the front or back; for if it blows ſideways, it prevents the playing of the nets.

DORONICUM, *Leopard's Bane*, in botany, the name of a genus of plants, the characters of which are theſe: the flower is of the radiated kind; its disk is compoſed of floſcules, and its outer edge of ſemifloſcules, all ſtanding upon embryo's, and incloſed in a funnel-like, or baſon-like cup. The embryo's finally become ſeeds winged with down, and affixed to the thalamus of the flower.

The ſpecies of *Doronicum* enumerated by Mr. Tourneſort are theſe: 1. The ſweet rooted *Doronicum*. 2. The branched or ſcorpion-rooted *Doronicum*. 3. The broad leaved ſcorpion-rooted *Doronicum*. 4. The plantain leaved *Doronicum*. 5. The German plantain leaved *Doronicum*. 6. The long leaved rough and hairy *Doronicum*. 7. The broad leaved large flowered *Doronicum*. 8. The largeſt *Doronicum* with leaves ſurrounding the ſtalks. 9. The black rooted *Doronicum*. 10. The Portugal plantain leaved *Doronicum*. The *Doronica* are all eſteemed poiſonous. *Tourn.* Inſt. p. 487.

DORONICI *Radix*, in the materia medica, the name of a root kept in the ſhops in ſome places, but at preſent little uſed. It is a ſmall yellow root, appearing white when broken, of a ſweet aſtringent taſte, and viſcous in the mouth. The faireſt and plumpeſt roots ſhould be choſen, and ſuch as are freſh dried, or at leaſt not worm eaten. The root is brought from the mountains of Swiſſerland, and ſome other places. The plant which produces it is the *Doronicum Officinarum* of Gerrard, and is kept with us in the gardens of the curious. The leaves are broad, and the flower is yellow, and of the ſize of a marygold.

It is ſaid to be an alexipharmic, but is not uſed in the preſent practice. Authors are indeed not at all agreed about its nature; ſome accounting it a very valuable medicine, and others a poiſon. *Pomet*'s Hiſt. of Drugs, p. 40.

DORSCH, in ichthyography, the common name of ſmall fiſh of the cod kind, frequent in the Baltick, but more rare in other ſeas, and called by authors the aſellus varius, or ſtriatus. It is remarkable for having the ſmootheſt and ſofteſt skin of all the cod kind; nevertheleſs it has ſmall ſcales. It is uſually caught of a foot, or a little more, in length. Its head is proportionably ſmaller than the haddocks, and ends in a ſharper point; the jaws being both alſo furniſhed with teeth, its mouth opens very wide, its back and the upper part of its ſides are black, or of a dusky brown, and ſometimes, eſpecially in winter, is of a paler greyiſh colour, and ſpotted with black ſtreaks. The lines running from the gills to the tail are one on each ſide, and are whitiſh. Its belly is of a greyiſh or yellowiſh white. It approaches neareſt to the ſpecies called the whiting pollack, but differs from it in having a beard. It is a fine fiſh for the table. *Willoughby*, Hiſt. Piſc. p. 172.

DORSI (*Cycl.*)—DORSI *primus*, in anatomy, a name given by Fallopius, and many other authors, to a muſcle, now generally known by the name of *Quadratus Lumborum*, or the external lumbal muſcle. See QUADRATUS.

DORSTENIA, in botany, is uſed by Plumier, and ſome other authors, for the plant of which the contrayerva uſed in medicine is the root. *Plum.* Nov. Gen. 29. T. 8.

DORSTENIA, in the Linnæan ſyſtem, is uſed for a genus of plants, the characters of which are theſe: the cup is a common involucrum, large, of a fat figure, and angular, covered with the common receptacle of the flowers, and with numerous very ſmall flowers in it. Each ſingle perianthium is quadrangular, hollow, buried in the common involucrum, and growing to it. There are no petals. The ſtamina are four ſlender and very ſhort filaments. The antheræ are roundiſh. The germen of the piſtillum is roundiſh, the ſtyle ſimple, and the ſtigma obtuſe. The common receptacle becomes thick and fleſhy, and contains the ſeeds which are numerous and ſmall. *Linnæi* Gen. Plant. p. 50.

DORSUM *Piſcium*. The back in fiſhes is a part from which authors take the characters of ſeveral of their diſtinctions. Its principal differences taken notice of by Artedi are theſe: conſidered in regard to its length, it is either ſtrait, as in the pike, &c. or gibboſe, riſing up into a prominence in the middle, as in the pearch, bream, and many other fiſh. Then conſidered tranſverſly, it is either flat, as in the pike; or convex, as in moſt other fiſhes; or finally, it is formed into a ſubacute angle, as in the pagrus and ſome others. From the conſideration of the back, the ichthyologiſts generally deſcend to the ſides: theſe alſo are the ſubject of ſeveral characters and diſtinctions, as they are in the different fiſh more or leſs flat, or more or leſs convex. The breaſt and belly follow theſe in deſcription, and their principal differences are their being convex, as in the petromyzon, the eel, &c. or flat, as in the pike, the bream, and many others; or finally, raiſed or pointed, with a ridge or acute angle, as in the clupeæ. There is alſo another ſingularity, which is, that in ſome the belly and breaſt are flat, but the lower part of the belly, between the ventral fins and the anus, is contracted into a ſort of ſharp angle: this is ſeen in ſome of the cyprini. *Artedi* Ichthyolog.

DORYCNIUM, in botany, a name given by ſome to the upright umbellated ſilvery bindweed, called by others *Cneorum*. See the article CONVOLVULUS.

DORYDREPANON. See the article DREPANON.

DORYPHORI, an appellation given to the life-guard-men of the Roman emperors. They were held in ſuch high eſtimation, as frequently to have the command of armies conferred on them.

It was uſual alſo for chief commanders to have their *Doryphori*, or life-guard, to attend them. *Pitiſc.* Lex. Ant. in voc.

DOSENS, ſtreight cloths made in Devonſhire, and ſo called in Rot. Parl. 2 Hen. 5. See DOWSEINES.

DOSSER, a ſort of basket to be carried on the ſhoulders of men. It is uſed in carrying the overplus earth from one part of a fortification to another, where it is wanted. There are likewiſe ſmall carts and wheel-barrows for the ſame uſe. *Guillet.* Gent. Dict. in voc.

DOSSIL, in ſurgery, is lint made into a cylindric form, or reſembling the ſhape of dates or olive-ſtones. *Doſſils* are ſometimes ſecured by a thread tied round their middle. *Heiſt.* Surgery, Introd. §. 53.

DOTE (*Cycl.*)—DOTE *Aſſignanda*, in law, a writ that lay for a widow, where it was found by office, that the king's tenant was ſeized of tenements in fee, or fee-tail, at the day of his death; and that he held of the king in chief, &c. in which caſe, the widow came into the Chancery, and there made oath, that ſhe would not marry without the king's leave. Anno 15. Edw. 3. c. 4. And hereupon ſhe had this writ to the eſcheator; for which ſee Reg. of writs, fol. 297. and Fitz. Nat. Br. fol. 263.

Theſe widows are called the king's widows.

DOTE *unde nihil habet*, in law, a writ of dower that lies for the widow againſt the tenant, who bought land of her husband in his lifetime, whereof he was ſolely ſeized in Fee-ſimple or Fee-tail, in ſuch ſort, as the iſſue of them both might have inherited. *Fitz.* Nat. Br. fol. 147.

DOTIS *Admenſuratione*. See ADMEASUREMENT, *Cycl.* and Reg. of Writs, fol. 171.

DOTTERELL, in zoology, the name by which the mainellus is commonly known in moſt parts of England. See MAINELLUS.

DOTTO, in natural hiſtory, a name given by ſome authors to a ſpecies of the emerald, which was of a good green, but not clear or fine.

DOUBLE (*Cycl.*)—DOUBLE, in the manege. A horſe is ſaid to *double* his reins, when he leaps ſeveral times together to throw the rider. Thus we ſay, this *Ramingue doubles* his reins, and makes *Pontlevis*. See RAMINGUE and PONTLEVIS.

DOUBLE *Caſt*, in husbandry, a term uſed by the farmers for that method of ſowing that does not diſpenſe the neceſſary quantity of ſeed for a piece of land at one bout, but requires the going over it every where twice in a place. *Plot.* Oxf. p. 251.

DOUBLE *Horizontal Dial*, one with a *double* gnomon, whereof one points out the hour on the outward circle, and the other ſhews the hour on the ſtereographic projection drawn upon it. This dial finds the meridian, hour, the ſun's place, riſing, ſetting, &c. and many other propoſitions of the globe. See DIAL, *Cycl.*

DOUBLE *Dancette*, in heraldry. See DANCETTE, *Cycl.*

DOUBLES, in our ſtatutes, ſignify as much as letters patent, being a French word made of the Latin diploma. Anno 14 Hen. 6. c. 6.

DOVE, in zoology. See COLUMBA.

Ring-DOVE. See the article RING-*Dove*.

DOVELLA, in ichthyology, a name given by the Maſſilians to the fiſh called the donzellina: by the Italians, it is the julia or julis of authors; and, according to the Artedian ſyſtem, it is a ſpecies of the labrus. That author diſtinguiſhes it by the name of the labrus of variegated colours, with two large teeth in the upper jaw. See LABRUS.

DOULEIA, Δουλεια, among the Athenians, a kind of puniſhment by which the criminal was reduced into the condition of a ſlave. It was never inflicted upon any but the Ατιμοι, ſojourners

journers and freed ſervants. *Pott.* Archæol. Græc. l. 1. c. 25. T. 1. p. 130.

DOWLE and DEAL, in our old writers, are uſed to ſignify a diviſion. The word comes from the Saxon *dal*, i. e. *diviſio*, and that from *dælan*, *dividere*; whence our Engliſh word *dealing* is formed.

In this ſenſe it is that the ſtones laid to the boundaries of lands are called *Dowleſtones*.

DOWSEINES, a ſort of kerſeys made in Devonſhire, in length twelve yards; whence alſo their name, which is otherwiſe writ *doſens*, *dozens*, or *dozeins*.

DOZEIN, *Decenna*. In the ſtatute for view of frank-pledge, made 18 Edw. 2, one of the articles for ſtewards in their leets to enquire of, is, if all the *Dozeins* be in the aſſize of our Lord the king, and which not, and who received them. Art. 3. See DECINERS.

DOZEIN is alſo uſed for a ſort of Devonſhire kerſeys. Anno 5 and 6 Edw. 6. c. 6. See DOWSEINES.

DOZELLINA, in zoology, a name by which ſome authors have called the muſtela of the common ſpecies, which we in Engliſh term the *Sea Loche*, and *Whiſtle-fiſh*. *Willoughby*'s Hiſt. Piſc. p. 121.

DRABLER, in the ſea language, a ſmall ſail in a ſhip, which is the ſame to a bonnet, that a bonnet is to a courſe, and is only uſed when the courſe and bonnet are too ſhoal to cloath the maſt. See BONNET and COURSE.

DRABS, in the Engliſh ſalt works, a name given to a ſort of wooden caſes into which the ſalt is put, as ſoon as it is taken out of the boiling pan. Theſe are partitions like ſtalls made for horſes, they are lined on three ſides and at the bottom with boards, and at the front have a ſliding board to put in or take out occaſionally. Their bottoms are made ſhelving, being higheſt at the backſide, and gradually inclining forwards; by which means the ſaline liquor that remains mixed with the ſalt eaſily drains out from it, and the ſalt in three or four days becomes ſufficiently dry, and is then taken out and laid up in large heaps for ſale. In ſome places they uſe cribs inſtead of the *Drabs*. See CRIBS.

DRACO *Marinus*, in zoology, the name of a fiſh of the cuculus kind, known in England by the name of the weaver. It is a very long bodied fiſh, ſomewhat flat, with a crooked belly and ſtrait back. The ſides are variegated with browniſh and yellow lines running obliquely from the back to the belly, and leaning toward the tail. The coverings of the gills are yellow, and the belly is white. Its ſcales are very ſmall and thin, and its head is of a moderate ſize, ſomewhat flatted, and ſinking into a hollow between the eyes. The eyes are placed very near one another, and ſtand nearer the end of the ſnout than in any other fiſh of the ſcaly kind. The mouth is very large, and the lower jaw is longer than the upper; both the jaws are furniſhed with teeth, and the head is full of tubercles. It has two fins on the back: the foremoſt of theſe is very ſhort, and the other very long. The foremoſt of theſe fins have ſeveral prickly points, and theſe are ſaid to inflict a ſort of poiſonous wound. Its tail is but ſlightly forked, and is bluiſh in colour. Its fleſh is delicate, and it grows in ſome ſeas to twelve, or even eighteen inches in length. The fiſhermen are much afraid of its pricking them, and always as ſoon as they have caught it, cut off the back fin. *Geſner* de aquat. p. 89.

DRACO *Volans*, in natural hiſtory, a name given by ſome people to one of the flying lizards. Others have applied the ſame term to a very different ſubject, expreſſing by it a ſort of ignis fatuus very common in this iſland, and others of the more northern countries, which is much redder, larger, and more terrible than our common lambent fires, or will in the wiſps, as our country people expreſs them. This ſort of exhalation is principally ſeen on the borders of rivers, and in marſhy places, and ſeldom riſes very high from the ground, but plays and dances about the ſurface in an agreeable manner; and if people go up to it, will ſtick to their hands or cloaths without burning, or doing them any injury. They are more common in the ſummer months than in the winter, and are more frequently ſeen in thick weather than in clear.

DRACOCEPHALON, *Dragon's Head*, in botany, the name of a genus of plants, the characters of which are theſe. The flower conſiſts of one leaf, and is of the labiated kind, and the upper lip which is galeated, and the lower which is divided into three ſegments, reſemble in ſome ſort the head of a ſerpent. The piſtil ariſes from the cup of the flower, and is fixed in the manner of a nail to the hinder part of it; the four embryos which ſurround this, ripen into ſo many ſeeds, which the cup ſerves as a receptacle for. See Tab. 1. of Botany, Claſs 4.

The only known ſpecies of this is the American *Dracocephalon* of Breynius, which has been called by others a ſpecies of digitalis or foxglove. *Tourn.* Inſt. p. 181.

DRACONTEAS, a name given by Neophytus, and ſome others of the later Greek writers, to two plants diſtinguiſhed by the epithets of the great and the little kinds. The great *Draconteas* is the plant we call dragons[a], and the ſmall *Draconteas* is the arum. Neophytus ſays that the roots of ſome ſpecies of the ſmall *Draconteas* were eatable, which we alſo know to be true at this time; for though with us the juice of this plant is fiery and corroſive, yet we know that there are eſculent arums in other parts of the world. The Greek writers, from the earlieſt times we have accounts of, were not ignorant of this; and Theophraſtus in particular has deſcribed an eſculent rooted arum under the name of arum edodimum. [a] See DRACUNCULUS.

DRACONTHEMA, a name uſed by ſome of the old writers in medicine for what we call *ſanguis draconis*, or dragon's blood, a red vegetable reſin.

DRACONTIA, or DRACONTIA *Lapis*, in natural hiſtory, a name given by authors to a roundiſh or oval pellucid ſtone, which ſeems no other than a cryſtal cut into that form, and poliſhed by the ſavage inhabitants of ſeveral nations before the Roman conqueſts, and intended to be worn as ornaments. Authors tell a number of idle and fabulous ſtories about this ſtone, imagining it to be naturally of this figure and poliſh, and to be found in the head of a dragon. Pliny, Solinus, and many other authors, give us ridiculous and idle accounts of the manner of taking this ſtone out of the creature's head, which, they ſay, muſt be done while it is yet not quite dead; and ſuppoſe it to have great virtues againſt the bites of ſerpents and other venomous beaſts. They are not indeed all agreed about the ſpecies of the ſtone; Ficinus deſcribing an aſtroites under this name, and others ſome other coloured ſtone; but the generality of writers, eſpecially the old ones, make it colourleſs and pellucid.

DRACONTIUM. The Greeks, from whom the botanical writers have taken this name, never uſed it ſingly as the denomination of a plant, but only as an adjective expreſſing ſome peculiarity in which that plant differed from ſome others of the ſame ſpecies. Thus the plant which we now call ſimply *Dracontium*, was called by the Greeks *Arum Dracontium*, that is, the arum with ſtalks ſpotted like dragons or ſnakes skins; and the plant we call dracunculus or tarragon had the ſame epithet from its fiery heat.

DRACUNCULI, (*Cycl.*) a name uſed by authors for a ſort of long and ſlender worms, which breed in the muſcular fleſh of the arms, legs, &c. and from their being more frequent in ſome parts of Guinea than elſewhere, are called by many Guinea worms. They have been long known in the world; and Plutarch quotes Agathercidas for an account of theſe animals, which, he ſays, the people about the red ſea were at a certain time very much afflicted with. Plutarch tells us that they thruſt out their heads through the skin, and on being hurt draw them in again, and cauſe an intolerable pain and inflammation. Theſe worms principally affect children, and their origin is not unlike that of the worms in the inteſtines. While they move about, they create no trouble; but when they fix their reſidence, the place about them ſuppurates, and then being uneaſy they thruſt out their heads; and if they are broken in attempting to draw them out, the conſequence is very bad. They may ſometimes be manifeſtly ſeen to move. They are no where ſo frequent as on the gold coaſt in Guinea about Anamaboe and Cormantyn. The worm is white, round, long, and uniform, very much reſembling a piece of white round tape or bobbin. It is lodged between the inteſtines of the membranes and muſcles, where it inſinuates itſelf to a prodigious length, ſometimes exceeding five ells. It occaſions no great pain in the beginning; but when it is about to ſhow its head, a ſwelling and inflammation appear on the part, which is uſually the ankle, or ſome part of the leg or thigh.

The countries where this creature is thus produced are very hot, and ſubject to great droughts, and the inhabitants make uſe of ſtagnating and corrupted water, in which it is probable the ova of theſe animals lie: the white people and negroes who drink this water are equally ſubject to theſe worms.

The ſurgeons ſeldom attempt to extract this worm by inciſion, but when the tumor appears, they endeavour to bring it to a ſuppuration as ſoon as they can; and when they have broke the ſwelling, and the head of the worm appears, they faſten it to a ſtick, and continue gradually winding it round at the rate of an inch or two in a day, till they by this means have wound it all out. If it be wound too haſtily, it is apt to break in the operation; and if it does, the end is not eaſily recovered again; and if not, there are abſceſſes formed, not only at the place where it breaks, but all along the whole winding of the muſcles where the dead worm remains; ſo that often from one worm thus broken, there are produced a number of obſtinate ulcers in different parts. When the worm has not been broken, the ulcer out of which it was extracted heals eaſily, and there is no farther trouble about it. *Town*'s Diſeaſes of the Weſt Indies, p. 561.

DRACUNCULUS, in zoology, the name of a ſea-fiſh, called by Bellonius and Geſner, a kind of the exocætus. It is a ſmall fiſh, of about a hand's breadth long, and ſometimes a little larger. It is of a long and rounded body, and of a dead greeniſh or olive colour on the back, and white on the belly, and is marked on the ſides with a great number of bluiſh, white, and very light ſmall ſpots. On the upper part of its head below the eyes, it has alſo a purpliſh triangular ſpot. The eyes are large, and ſtand very cloſe together, and the mouth

very wide; the upper jaw is a little longer than the under, and both are furniſhed with very ſmall teeth. The apertures of the gills are only two ſmall holes near the upper part of the head. It has two pair of fins on the belly, and two fins on the back, the one placed toward the head, and the other a little lower. Both are ſituated in a kind of furrow, and the hinder is very high, and beautifully ſpotted with black and white, and has its ribs running to a vaſt length beyond its edge. The tail is very long, and not forked. It is common in the Mediterranean and other ſeas, and is brought to market among other ſmall fiſh at Rome, and in other places. See Tab. of Fiſhes, N° 17. *Ray*'s Ichthyograph. p. 136.

DRACUNCULUS, *Dragons*, in botany, the name of a genus of plants, the flower and fruit of which wholly agree with thoſe of arum; but the leaves are divided into ſeveral deep ſegments. The ſpecies of *Dragons* enumerated by Mr. Tournefort are theſe:

1. The common *Dragons*. 2. The common *Dragons* with leaves variegated with yellow. 3. The common *Dragons* with leaves variegated with white. 4. The great Indian late flowering *Dragons* with ſtalks not ſpotted. 5. The leſſer Indian *Dragons* with plain ſtalks. 6. The great Ceyloneſe *Dragons* with rough ſtalks variegated with green and yellow. 7. The great Ceyloneſe *Dragons* with rough ſtalks, green variegated with white. 8. The great purple ſtalked American *Dragons*, with roots like thoſe of the cyclamen. 9. The polypody-leaved prickly *Dragons* of Ceylon, with a creeping root. 10. The ſmooth Ceyloneſe *Dragons* with green and white ſtalks. 11. The great Ceyloneſe *Dragons* with a trifid ſtalk. 12. The climbing American *Dragons*. 13. The climbing American *Dragons*, with trifoliate and auriculated leaves. 14. The dwarf American trifoliate *Dragons*. 15. The colocaſia-like American *Dragons* with jagged leaves. 16. The low American *Dragons* with a white flower and white fruit. 17. The American *Dragons* with an extremely long, green piſtil. 18. The five-leaved Indian *Dragons*. 19. The Indian *Dragons* with trifid leaves. *Tourn.* Inſt. p. 160. See the the article SERPENTARIA, *Cycl.*

All the ſpecies are propagated by parting their knobby roots, which when they have ſtood undiſturbed for three years will afford a great number of off-ſets. Theſe are to be taken off and planted in autumn ſoon after the green leaves decay; for if they are removed after they have taken freſh root and began to ſhoot, they ſeldom produce flowers the ſucceeding ſummer; or if they do, they are very weak: they will thrive in almoſt any ſoil and ſituation.

DRACUNCULUS, *Dragons* or *Tarragon*, an eſculent garden herb. The latter name has moſt univerſally obtained for this plant in England, the other being the uſual Engliſh name of the great dracontium. Some of the antients have ſhewn their great ignorance in natural philoſophy, by ſuppoſing the *Dracunculus* not to be an original ſpecies of plant, but to be raiſed at pleaſure out of two other plants, by ſowing the ſeeds of the common flax in the roots of an onion.

DRAGMA, in pharmacy, a name uſed by the antients for a handful of any herb or other medicine.

DRAGMIS, in pharmacy, a word uſed by the antients to ſignify a pugil, or as much of any thing as can be taken up at a pinch, between the thumb and two fingers.

DRAGON-*Beams*, in architecture, are two ſtrong braces or ſtruts, which ſtand under a breaſt ſummer, and meet in an angle on the ſhoulder of the king-piece.

DRAGON-*Fly*. See LIBELLA.

DRAGON-*Shell*, in natural hiſtory, a name given by people curious in ſhells to a ſpecies of concamerated patella or limpet. This has its top very much bent, and is of an aſh-colour on the outſide, but of an elegant and bright fleſh-colour within. This has been found ſticking on the back of a tortoiſe, as the common limpets do on the ſides of rocks: and ſome have been found affixed to large ſhells of the pinna marina brought from the Eaſt Indies at different times. Hiſt. Nat. Eclacic. part 2. p. 243.

DRAGONS, in botany, *&c.* ſee DRACUNCULUS.

DRAGOON, (*Cycl.*) in ornithology, the name of a ſmall kind of carrier-pidgeon, called *columba tabellaria minima* by Moore. It is a baſtard breed between the two ſpecies of pidgeons called the *horſeman* and the *tumbler*. They are very good breeders, and as they are lighter than the horſeman, they are ſuppoſed more expeditious in flight for a few miles, but the horſeman outdoes them at greater lengths. *Moore*'s Columb. p. 32.

DRAGS, in the ſea language, is uſed for whatever hangs over the ſhip in the ſea, as ſhirts, coats, or the like: and boats when towed, or whatever elſe that, after this manner, may hinder the ſhip's way when ſhe ſails.

DRAINS, a name given in the fen countries to certain large cuts or ditches, of twenty, thirty, nay ſometimes forty foot wide, carried through the marſhy ground to ſome river, or other place capable of diſcharging the water they carry out of the fen lands. Moſt of theſe drains are made in our fen countries by a body of men called *The Undertakers*, whoſe reward is one third of the ground they *drain*. They erect ſluices alſo at a great expence, often not leſs than two thouſand pounds each. Yet theſe, with all the care they employ in erecting them, are ſubject to be blown up by the vaſt weight of water that lies upon them when the lands are overflown. Some of theſe ſluices have two or more pair of doors, of ſix, eight, or ten foot high, which ſhut when the water in the river is higher than in the *Drains*, by the weight and force of it; and ſo, *è contra*, throw out a body of eight foot ſquare of water for about ſix or ſeven hours during the ebb. The real uſe of theſe *Drains* is very evident from the preſent ſtate of the land where they are cut, and that of it before. In Cambden's time all this was bog, and now it is all firm land. The country about Crowland was in that author's time ſo ſoft, that it was not paſſable by carriages; and thus grew a witticiſm upon it, that all the carts that entered this town were caſed on the wheels with ſilver: but this is now ſo firm ground, that carriages of any kind paſs over it. The duck ponds uſed to be called the fen corn fields, and they now are ſuch in reality, their bottoms being dry, and producing oats, and rape ſeed or cole ſeed with great increaſe. Philoſ. Tranſ. N° 223.

DRANK, a name given by our farmers to the great wild oats. Theſe are often very troubleſome to the plowed lands, eſpecially after wet ſeaſons and much froſt. Many to deſtroy this weed ſow the land with black oats, which being ripe much ſooner than the ſeeds of this plant, are cut down before it can ſow itſelf for another year; eſpecially if they are cut a little the earlier, which will do them no harm, if they be ſuffered to lie a while upon the ground afterwards for the grain to ſwell before they are carried in. But, in general, when plowed lands begin to run to theſe weeds and thiſtles, it is a token to the farmer that it is time to fallow them, or elſe to ſow them with hay-ſeed, and make paſtures of them. The ſowing beans upon a land ſubject to theſe weeds is alſo a good method, becauſe the farmer may ſend in his ſheep when they are about three inches high, which will eat up the *Drank*, and all the other weeds, and will not hurt the beans. The general method is to put twenty ſheep to an acre; but they muſt be put in only in dry weather, and not left too long. *Mortimer*'s Husband. p. 318.

DRAPERY *Painter*. See PAINTER.

DRAUGHT (*Cycl.*) — DRAUGHT *Compaſſes*, thoſe provided with ſeveral moveable points, to draw fine *Draughts* in architecture, *&c.* See the article COMPASS, *Cycl.*

DRAUGHT-*Hooks*, are large hooks of iron fixed on the cheeks of a cannon carriage, two on each ſide, one near the trunnion-hole, and the other at the train, and are called the fore and hind *Draught-hooks*. Large guns have *Draught-hooks* near the middle tranſum, to which are fixed the chains, which ſerve to eaſe the ſhafts of the limbers on a march. The fore and hind hooks are uſed for drawing a gun backwards or forwards by men with ſtrong ropes, called *Draught-ropes*, fixed to theſe hooks. *Guillet*.

DRAUGHT-*Horſe*, in farming, a ſort of coarſe made horſe deſtined for the ſervice of the cart or plough. In the choice of theſe horſes for what is called the ſlow *Draught*, they are to be choſen of an ordinary height, for otherwiſe when put into the cart one draws unequally with the other, and the tall ones hang upon the low ones. The *Draught-horſe* ſhould be large bodied and ſtrong loined, and of ſuch a diſpoſition, as rather to be too dull than too brisk, and rather to crave the whip than to draw more than is needful. Mares are the fitteſt for this uſe for the farmer, as they will be kept cheap, and not only do the work, but be kept breeding, and give a yearly increaſe of a foal, of the ſame kind, and fit to be bred to the ſame purpoſes. They ſhould have a good head, neck, breaſt, and ſhoulders; for the reſt of the ſhape, it is not of much conſequence. Only for breeding the mare ſhould have a large belly, for the more room a foal has in the dam, the better proportioned it will be. *Draught-horſes* ſhould be always kept to that employ. Some put them to the ſaddle on occaſion, but it does them great harm, alters their pace, and ſpoils them for labour. The *Draught-horſe* ought to have a large broad head, becauſe horſes of this ſhaped head are leſs ſubject than others to diſeaſes of the eyes. The ears ſhould be ſmall, ſtrait and upright; the noſtrils large and open, that he may breathe with the more freedom. A horſe with a full and bold eye always promiſes well. On the other hand, a ſunk eye and an elevated brow are very bad ſigns. The horſe is eſteemed fitteſt for this purpoſe alſo, that has a large and round buttock, which neither ſinks down nor cuts. He muſt have a firm and ſtrong tail, and the dock muſt be thick and well furniſhed with hair, and placed neither very high nor very low. The legs ſhould be rather flat and broad than round. The roundneſs of the leg being a fault in a horſe deſtined to labour that will ſoon ruin him. As to the hinder legs, the thighs ſhould be fleſhy and long, and the whole muſcle which ſhews itſelf on the outſide of the thigh ſhould be large and very thick. Nothing is ſo eſſential to the health of theſe ſerviceable creatures as cleanlineſs: if they are fed ever ſo well, and not kept clean, they will be ſubject to numerous diſeaſes.

The ſervant who has the care of them ought to be up very early, and to clean the racks and mangers from all filth. The currying

currying of them ought to be carefully performed every morning, but not in the ſtable, for the duſt to fall upon the other horſes, as it is too often done. After the horſes are duſted, they ſhould daily twiſt a whiſp of ſtraw hard up, and weting it in water, rub the legs, ſhoulders and body with it. Many of the diſeaſes of *Draught-Horſes*, which are not owing to naſtineſs, are owing to bad water; ſuch as are too raw, too muddy, or too cold, being all improper. If there be any running ſtream in the neighbourhood, they ſhould always be had to that to water, every day in ſummer, but in winter, well-water is warmiſh, and is better for them. If there be a neceſſity of giving them well-water in ſummer, it muſt be drawn up ſome hours before the time, and expoſed to the ſun-beams in tubs or troughs; marſh-water or that of lowland ditches is worſt of all. When the labouring horſe has drank his water, he ſhould have his oats given him, and theſe ſhould be carefully ſifted, and the manger duſted firſt. It is a common practice as ſoon as a horſe is come in from his work, to rub down the legs with a hard whiſp of hay, but the beſt judges of horſes, abſolutely condemn this, and obſerve, that this rubbing of the legs after hard labour, brings down humours into them, and makes them ſtiff.

The rubbing itſelf is wholeſome, but the doing it when the creature is hot is the miſchief; while a horſe is in a ſweat it is a great relief and refreſhment to him to have his body rubbed down, but when he is cool is the proper time to rub his legs. The racks are to be well ſupplied with hay, and the horſes ſhould be left to reſt and eat, about two hours, and then led to water; after this their oats ſhould be given them, and they ſhould then go to work again.

In the evening when the labour of the day is over, the firſt thing to be done, is to examine the feet, and ſee if any thing is amiſs about the ſhoes, and what earth or gravel is lodged in the foot, between the ſhoe and the ſole, is to be picked out with a knife, and ſome freſh cow-dung put in its place, which will cool and refreſh the part.

A very material thing for the preſervation of all ſorts of cattle, but of none ſo much as *Draught-Horſes*, is freſh and clean litter; this is a thing too often neglected in the care of theſe creatures, and many even neglect the cleaning away the old litter on purpoſe, leaving it there to imbibe more moiſture, that it may be the better manure for the land. It is true, that by this the dung is enriched and will go farther, but the benefit they reap from this, is nothing in compariſon of the miſchief they do the horſe in the mean time; for the heat this gives his feet, is alone enough to ruin him. The owner often finds the effect of this, without knowing the cauſe; the horſe becomes tender footed and weakly, and is unable to do his buſineſs, though fed in the beſt manner that can be; the dung in this caſe is left under him that there may be ſome advantage from his feeding, and the diſtemper is increaſed inſtead of being relieved, till in the end the horſe is generally rendered uſeleſs.

DRAWING *a caſt*, among bowlers. See BOWLING.

DREAMS—According to *Wolfius* every *dream* takes its riſe from ſome ſenſation, and is continued by the ſucceſſion of phantaſms in the mind. His reaſons are, that when we *dream* we imagine ſomething, or the mind produces phantaſms; but no phantaſm can ariſe in the mind, without a previous ſenſation: hence neither can a *dream* ariſe without ſome previous ſenſation. He obſerves farther, that tho' it be certain *a priori*, from the nature of the imagination, that *dreams* muſt begin by ſome ſenſation, yet that it is not eaſy to confirm this by experience; it being often difficult to diſtinguiſh thoſe ſlight ſenſations, which give riſe to *dreams* from phantaſms or objects of imagination. Yet this is not impoſſible in ſome caſes, as when the weak ſenſation ſufficient to give riſe to a *dream* gradually becomes ſtronger, ſo as to put an end to it, as it often happens in uneaſy and painful ſenſations. *Wolf.* Phychol. empir. §. 123.

The ſeries of phantaſms, or objects of imagination which conſtitute a *Dream*, ſeem to be ſufficiently accounted for, from the law of imagination, or of aſſociation; tho' it may be extremely difficult to aſſign the cauſe of every minute difference, not only in different ſubjects, but in the ſame, at different times and in different circumſtances. We have an eſſay on this ſubject by M. Formey, in the Mem. de L'Acad. de Berlin. Tom. 2. p. 316. He expreſsly adopts Wolfius's propoſition abovementioned [a] that every dream begins by a ſenſation, and is continued by a ſeries of acts of imagination, or of phantaſms; and that the cauſe of this ſeries is to be found in the law of the imagination [b]. [a Pſychol. empir. §. 123, 321, 327. b Si naturale ſomnium eſt, initium capere debet per legem ſenſationis, & continuari per legem imaginationis. *Wolf.* Pſychol. rational. § 327.]

Hence he concludes thoſe *Dreams* to be ſupernatural, which either do not begin by ſenſation, or are not continued by the law of the imagination. ibid. §. 328, 329.

A learned author has lately aſſerted, that *our dreams are prompted by ſeparate immaterial beings*. He contends, that the phantaſm, or what is properly called the viſion, is not the work of the ſoul itſelf, and that it cannot be the effect of mechanical cauſes; and therefore ſeems to conclude, they muſt be the work of ſeparate ſpirits acting on our minds, and giving us ideas while we ſleep. We muſt refer to the Author of this extraordinary hypotheſis, for a farther account of it. See Eſſay on the phænomenon of dreaming, in the 2d vol. of the Enquiry into the nature of the human ſoul, 3d edit. Lond. 1745.

DREAMS, in medicine.—The phyſicians who have accurately examined the ſtate of their patients in every particular circumſtance, have not omitted at times, to enquire into their *dreams* in thoſe hours of ſleep which their ill ſtate allows them, and partly from experience, partly from reaſon and analogy have found, that there are many preſages of diſeaſes to come, and many indications of ſuch as are preſent, but unperceived, at leaſt not ſeen in their full extent, to be had from what the ſenſes ſuffer in *Dreams*. Indeed if *Dreams* are different from what might be expected from the buſineſs of the day, or the turn of thought before, they may always be looked upon as ſigns of a more or leſs diſtempered ſtate of the body, and the true condition of that ſtate, may often be better learned from them, than from any other means. What has been obſerved by phyſicians in regard to the prognoſticks from *Dreams*, may be ſumm'd up in the following manner; to *dream* of fire indicates a redundance of yellow bile; to *dream* of fogs or ſmoak indicates a predominancy of black bile; to *dream* of ſeeing a fall of rain or ſnow, or a great quantity of ice, ſhews that there is a redundance of phlegm in the body; he who fancies himſelf converſant among ſtinks may be aſſured, that he harbours ſome putrid matter in his body; to have red things repreſented before you in ſleep, denotes a redundance of blood; if the patient *dreams* of ſeeing the ſun, moon and ſtars, hurry on with prodigious ſwiftneſs, it indicates an approaching delirium; to *dream* of a turbid ſea, indicates diſorders of the belly; and to *dream* of ſeeing the earth overflowed with water, or of being immerged in a pond or river, indicates a redundance of watery humours in the body; to *dream* of ſeeing the earth burnt or parched up, is a ſign of great heat and dryneſs; the appearance of monſters and frightful enemies, indicates deliriums in diſeaſes; and to *dream* often of being thrown down from ſome very high place, threatens an approaching vertigo, or ſome other diſorder of the head, as an epilepſy, apoplexy, or the like. Theſe and a great many others are the obſervations of Hippocrates on the *dreams* of his patients. From thoſe and from ſome farther aſſiſtances, Lomnius has carried the ſubject to a very great length, and given many rules of judging from them. *Lomnii* Med. Obſ. But quære, how true.

DREGS *of Oil*, a name given by the people who trade in oil, to that coarſe and thick part of it, which ſubſides to the bottom of the veſſels in which great quantities of it are kept. This is not fit for the common uſes of the clear oil at the top, but there are ſeveral purpoſes to which it ſerves very well. Great quantities of theſe lees or *Dregs* of common oil are uſed by the ſoapboilers, principally in making the common ſoft ſoap. The leather-dreſſers alſo uſe it in conſiderable quantities to ſoften the hides they are employed to prepare for the ſeveral artificers who uſe them. Some of theſe *Dregs* are alſo uſed in the making of flambeaux, which inſtead of being made of yellow wax as pretended, are uſually compoſed of pitch, roſin and this oil, mixed in ſuch a proportion as to make a maſs of a proper hardneſs and conſiſtence. People who uſe preſſes, and other works in which there are many ſcrews, ſometimes buy this to greaſe their ſcrews, inſtead of ſoap or ſuet. Theſe are the uſes mentioned by Savary; but beſide theſe we have in England another manufacture, which conſumes a greater quantity, then all theſe put together. This is the making ſperma ceti, ſome perſons among us have found the art of making this out of the fæces of oil, and will give an oilman at any time as much clear oil in exchange for theſe dregs, as they are in quantity. All the other uſes of theſe dregs leave the trader at a great loſs; and as Savary obſerves, the more fæces the oil contains, the greater is the loſs to the buyer; but with us, this is rendered equal, and there is no loſs in it.

All ſorts of oil produce more or leſs fæces and *Dregs*, but of all others, the whale oil is obſerved to produce the largeſt quantity, and the nut oil the leaſt. *Savary's* Dict. Comm.

DREIT DREIT, in our old writers, ſignifies a double right, that is, *jus poſſeſſionis & jus dominii*. Bracton lib. 4. c. 27. and lib. 4. tract. 4. c. 4. and lib. 5. tract. 3. c. 5. *Coke* on *Littl.* fol. 266.

DRENGAGE, *Drengagium*, vel *ſervitium Drengagii*, in our old writers, the tenure by which the *Drenches* held their lands; concerning which, ſee Term. Trin. 21 Edw. 3. Ebor. and Northum. Rot. 191. *Notandum eſt, eos omnes eorumve anteceſſores, qui e* Drengorum *claſſe erant, vel per* Drengagium *tenuere, ſua incoluiſſe patrimonia ante adventum Normannorum. Spelm.* Gloſſ. *Du Cange*, Gloſſ. Lat. in voc. *Drenches.*

DREPANON, Δρέπανον, among the Greeks, an engine of iron crooked like a ſickle and fixed to the top of a long pole. It was uſed in cutting aſunder the cords of the ſail yards, in order to diſable the ſhip by letting fall the ſails, and was otherwiſe called *Dorydrepanon*. *Potter* Archæol. T. 2. p. 141.

DRESSING *of ores*; the preparing them as they come rough from the mine, for the working by fire. This is done ſeveral ways in different countries, and in reſpect to the different ores of the metals; in Devonſhire we have a very eaſy method, which is ſo expeditious, and ſo good for all the purpoſes, that it is worthy copying in other places. After the ore is dug, it is toſſed up by hand from ſhamble to ſhamble by the ſhovelmen in the mine, and drawn up in buckets by a wynch at the top of the ſhaft. As ſoon as the whole quantity for one dreſſing is brought up, the large ſtones are broken, and the whole is then carried to the mills, where one horſe turns a wheel that moves the machines for poudering a great quantity of it; theſe are called the ſtamping or knocking mills. The ore is unloaded at the head of the paſs or entrance into theſe mills; this paſs is made of two or three bottom boards and two ſide boards, in form of a hollow trough, and ſtands in a ſlanting direction. The ore by its own weight is carried down this trough, and lodges itſelf in the coffer. The coffer is a long ſquare box made of the firmeſt timber, and of three feet long, and a foot and half broad; the ore is not ſuffered to fall into this all at once, but is ſtopped over the mouth of the trough by a croſs board, where a cock turns in a quantity of water at the ſame time, which waſhes down juſt as much of the ore with it into the trough, as there ought to be. In this coffer there are three lifters placed between two ſtrong board leaves, having two braces or thwart pieces on each ſide to keep them ſteady, as a frame with ſtamp heads. Theſe heads are of iron, and weigh about thirty or forty pounds a-piece, and ſerve to the breaking the lumps of ore in the coffer.

The lifters are about eight foot long, and half a foot ſquare. They are always made of heart of oak, and have as many intimbers or guiders between them; they are lifted up in order, by a double number of toppits, which are faſtened to as many arms paſſing diametrically thro' the great beam, which is either turned by the wheel and horſe, or where there is conveniency of water, by an overſhot water-wheel on two boulſters. The tappets exactly but eaſily meet with the tongues, which are ſo placed in the lifters, as that they eaſily ſlide from each other, and ſuffer the lifters to fall with great force on the ore in the trough. The frequent pounding of theſe ſoon reduces the large maſſes into a ſort of ſand, which is waſhed out of the trough by the continual current of the water from the cock thro' a braſs grate, which is placed at one end of the coffer between two iron bars.

The powdered ore is conveyed out of the trough into the *launder*, which is a trench cut in the floor of eight foot long, and ten foot over, this is ſtopped at the lower end with turf, ſo that the water is all ſuffered to paſs away, and the powder of the ore is ſtopped. Thus the launder by degrees fills up with the dreſſed ore, and this is removed out with ſhovels as occaſion requires. The launder is divided into three parts, the forehead, the middle, and the tail; that ore which lies in the forehead, that is, within a foot and half of the grate, is always the richeſt and beſt, and is laid up in a heap by itſelf; the middle and tail afford a poorer ore, and theſe are ſometimes laid up in ſeparate heaps; ſometimes thrown into one heap together.

DRIFT (*Cycl.*) — DRIFT, in mining, a paſſage cut out under the earth betwixt ſhaft and ſhaft, or turn and turn, or a paſſage or way wrought under the earth to the end of a meer of ground, or part of a meer. See *Houghton*'s Compl. Miner. in the Explan. of the Terms.

DRILL, or DRILL-*Box*, a name given to an inſtrument uſed in the new method of horſehoing husbandry for ſowing the land. The *Drill* is the engine that plants the corn and other ſeeds in rows; it makes the channels and ſows the ſeeds in them, and covers them with earth when ſown, and all this at the ſame time, and with great expedition. The principal Parts of the *Drill* are the ſeed-box, the hopper, the plow and its harrow. The ſeed-box is the chief of theſe, it meaſures or rather numbers out the the ſeeds which it receives from the hopper, and is for this purpoſe as an artificial hand, but it delivers out the ſeed much more equally, than that can be done by a natural hand. The plow and hopper are drawn by a horſe, and by theſe the ground is opened, and the ſeed is depoſited in it; the harrow follows, and lightly rakes in the earth over them. When the ground is fine, and the ſeeds ſmall, a hurdle with ſome prickly buſhes faſtened to its under part, will ſerve better than the harrow. The whole apparatus for this method of ſowing, is finely deſcribed and illuſtrated with figures by *Tull* in his Horſehoing Husbandry, to which we refer.

DRILL, in mechanics, a ſmall inſtrument for making ſuch holes as *punches* will not conveniently ſerve for. *Drills* are of various ſizes, and are chiefly uſed by ſmiths and turners. Vid. *Moxon.* Mech. Exerc. p. 6. 234.

It is a very well known fact, that a *Drill* made of iron, has frequently not only a polarity, but ſo ſtrong an attractive virtue of the magnetick kind, that it will ſuſpend a common needle from its point. It is uſually ſuppoſed that a *Drill* acquires this polarity by boring iron. But it is not only by boring of iron, that this power is obtained, but in the very making. As ſoon as one of them is finiſhed and hardened, its point becomes a north pole before it has ever been worked either in iron or any other materials, ſo that of the great numbers of theſe inſtruments found in a ſhop, endued with this power, it is to be ſuppoſed that more of them owe it to their original make, than to any after uſe. All pieces of wrought iron which in ſhape reſemble *Drills*, that is, which are of a long and ſlender form, will not only have this polarity, but they will change it on being placed for ſome time in an inverted poſture, and that which was the oppoſite to the north pole, by ſtanding downwards will be the north pole. This has been an old obſervation, but on a fair experiment, it does not prove to be true in all things without exception, tho' it be ſo in moſt particulars. The larger pieces of iron ſeem to be moſt eaſily influenced in their polarity, by changing their poſition, but the ſmall ones will ſometimes be found to have fixed poles, which no change of poſture will alter. Philoſ. Tranſ. N°. 246. See MAGNET.

DRILLING, is popularly uſed for exerciſing of ſoldiers.

The word is derived from the French *Drille*, which ſignifies a raw ſoldier: *Calo, miles exigui pretii*, ſays Le Clerc [a], who derives *Drille* from the Hebrew *chol*, ſignifying *all*, or a *whole*. As this derivation ſeems no ſmall paradox, we ſhall here inſert this learned Author's deduction. 1°. From *chol* is formed the Greek ὁλος *totus*. 2°. From ὁλος is formed the Latin *ſolus*. 3°. From *ſolus*, comes *ſolidus*. 4°. From *ſolidus* is derived *ſolidum*, a piece of money. 5°. From *ſolidum* comes *ſolidarius*, or a ſoldier receiving a *ſolidum*. 6°. From *ſolidarius*, *ſoldarius* is eaſily derived, and hence the French *ſoudar*. 7°. From *ſoudar* comes the diminutive *ſoudrille*. 8°. From *ſoudrille*, the tranſition *per aphæreſin* to *Drille* is eaſy. This etymology is applauded by Menage; but he, as Le Clerc [b] obſerves, does not aſcend to the Hebrew ſpring; in which the reader may perhaps think him judicious. [a *Le Clerc*, Diſſert. Etymol. ad Math. Martinii Lexicon. Philolog. b Id. ibid.]

DRINK (*Cycl.*)—The firſt *Drinks* of mankind were certainly water and milk; but the love of luxury and debauchery ſoon introduced the art of preparing intoxicating and inebriating *Drinks* out of vegetables. The vine gave the firſt of theſe liquors; after this, wheat, barley, millet, oats, rice, apples, pears, and pomegranates; and after theſe the juices drained from the pine, ſycamore and maple were brought to this uſe; in latter times, roots, berries, and the pith of the ſugar cane, have been employed for the ſame purpoſes: honey alſo is at preſent in ſome repute, but before the uſe of the other things here mentioned, the vinous liquor made of honey and water was in the very higheſt eſtimation. The bees were natural purveyors, and their ſtores were one of the firſt delicacies probably of the human race. It was very natural to attempt the meliorating ſo raw a drink as water, by an addition of this ſweet ſubſtance; and ſuch a mixture needing only time for fermentation to become vinous, accident might ſoon lead to this diſcovery. Mead therefore may naturally be ſuppoſed to have been one of the firſt ſtrong liquors in uſe in the world, and among the very oldeſt writers among the Greeks we find it named as a thing well known. Homer, Heſiod and Ariſtophanes all give plain proofs of their having been acquainted with it; and Orpheus repreſents night counſelling Jupiter to make Saturn drunk with mead, and then to dethrone and caſtrate him. The people who have ſtudied the human frame to moſt purpoſe, all agree, that amongſt the ſtrong *Drinks*, wine is the moſt pernicious; and that good water, milk, beer and cyder are greatly preferable to it, none of them bringing on the variety of diſorders, to which immoderate wine drinkers are ſubject, ſuch as decay of ſight, trembling of the limbs, &c.

Mr. Boyle mentions an acquaintance of his who uſed to *drink* but once in ſeveral days, and that in no great quantity, yet ſweat freely, and had his urine in juſt quantity. See Works Abr. Vol. 1. p. 306.

DRINKLEAN, in our old writers, a ſcot-ale or contribution of the tenants towards a potation, *i. e.* ale provided to entertain the lord or his ſteward. In ſome records it is written, *Potura Drinklean.*

DRIVE-*Bolts*, in ſhip building. See BOLTS, *Cycl.*

DRIVER, the name given by our ſportſmen to an inſtrument uſed in the taking pheaſant powts, in the method called driving. This inſtrument conſiſts only of a parcel of ozier wands ſuch as are uſed by the basket-makers, which are made up into a bundle, or ſort of great whisk, and faſtened in a handle; and to prevent their ſpreading too much at the points are tied round in one or two places in the length; with this inſtrument the ſportſman having fixed his nets, drives the young birds into them. See DRIVING.

DRIVING, amongſt ſportſmen, a term applied to the taking of young pheaſants, and ſome other birds in nets of an open ſtructure. The method of doing this, is, when an eye of pheaſants are found, the ground all about is to be ſearched, for the finding of their principal haunts. The induſtrious ſearcher