

Lexicon physico-medicum: or, a new physical medicinal dictionary, explaining the difficult terms used in the several branches of the profession, and in such parts of natural philosophy as are introductory thereunto. ... / By John Quincy, M. D.

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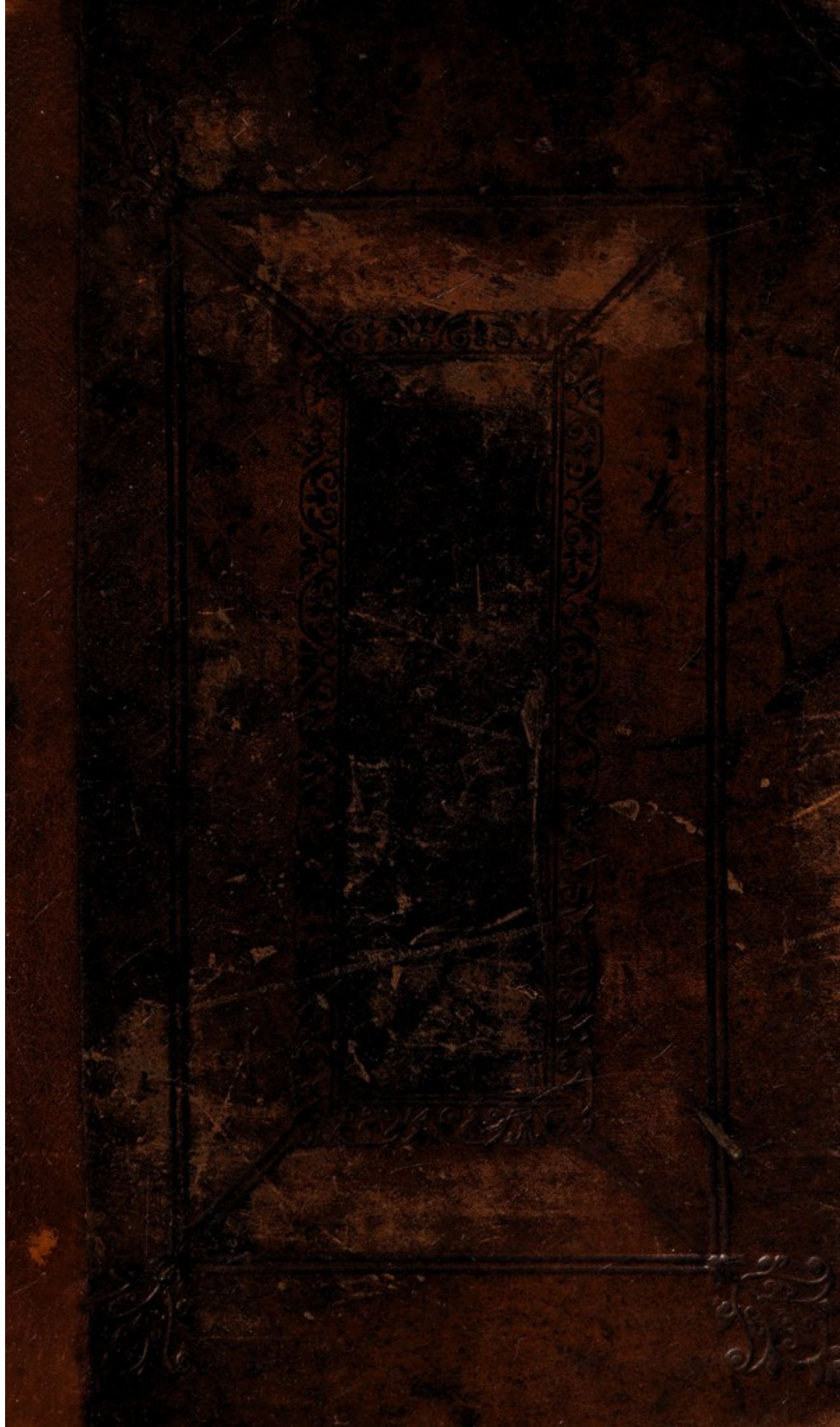
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Lexicon Physico-Medicum:

Amuel OR, *Deacon Junior*
A New MEDICINAL
DICTIONARY;

offm EXPLAINING *Ex Deo*
Samel The Difficult TERMS used in the
several Branches of the Profession, and
in such Parts of Natural PHILOSOPHY
as are introductory thereto:

WITH
An ACCOUNT of the Things
Signified by such TERMS.

COLLECTED
From the most eminent AUTHORS; and
particularly those who have wrote upon Me-
chanical Principles.

By JOHN QUINCY, M. D.

The FIFTH EDITION, with new Improve-
ments from the latest Chymical and Mecha-
nical Authors.

L O N D O N:

Printed for T. LONGMAN, at the Ship in Pater-noster
Row. 1736.

4580





To His GRACE the
 Duke of *MONTAGU*.

My LORD,



T is with great Pleasure
 that I have an Oppor-
 tunity of being first in
 an Address to your
 Grace, since you have honoured
 the Faculty of Physick by taking
 a Degree of Doctor therein, and
 a Fellowship in the College of
London.

AND I am not at all apprehensive of being too free with your great Name, because that generous Disposition, which hath determined your Grace in this Choice, cannot but be pleased with every honest Endeavour for Improvement of the Science. As it is peculiar to great Minds, to approve of all laudable Attempts, and as the lowest Assistances to Knowledge cannot want the Favours of the Wisest ; on this Prospect alone the following Work presumes upon your Grace's Patronage and Encouragement.

OF all the Studies which employ the Faculties of reasonable Men, none open the Mind more, or give it a juster Turn of Thinking, than Physick. The rational Powers

Powers are herein conducted by Guides which give the greatest Delight, and the greatest Certainty. The Knowledge it brings both of ourselves and the whole System of Beings about us, is a Pursuit worthy of the most exalted Spirits; and notwithstanding what Enthufiafts say to the contrary, nothing more naturally leads in to a Relish of those Compassions which make Men sociable and benevolent, and nothing lays so sure a Foundation for all proper Regards to a future State of Existence. History has been just to many Characters which have come down to us in this Light, and they appear in as lovely, as desirable, and as glorious a Splendor, as those of the greatest Heroes and Law-

A 3 givers :

givers : Even our own Annals are not silent in this respect ; but long has it been since a Person of your Grace's Eminence has vouchsafed to appear upon their Records.

ON this generous Condescension, your Grace will not be surpriz'd to find the Eyes and Expectations of many turned towards you, as it gives them very pleasing Views from so great an Example, and Encourages them to hope for a Recovery of the due Respects and Advantages to a Profession, which at present lies unhappily open to any Pretentions. All Attempts of this kind being chargeable with selfish Regards may have hitherto been a Discouragement to its Professors : But a Character superior to a Possibility of
such

such Suggestions, can give the necessary Weight to all Instances in their behalf. Every Session of the Legislature gives fresh Proofs of a publick Concern for the particular Privileges even of the most inferiour Communities; and yet the Physician, who has been regularly educated, and given reasonable and legal Tests of Qualification, has his way to make thro' a vast Superiority, who have no other Support but consummate Assurance, and all the Arts of Imposture.

I AM not, my Lord, altogether a Stranger to the usual Air of Addresses of this kind; but I have no Talent at speaking more than I know or think, any more than it can be grateful to a truly great

and virtuous Mind to hear such Things said. As therefore it is my Unhappiness not any otherwise to be acquainted with one of your Grace's Eminence, but by this publick Instance of your Goodness and Beneficence, by That only am I encourag'd to take this Occasion of declaring my self, with the most profound Duty and Respect,

Your Grace's Most Obedient and

Most Humble Servant,

JOHN QUINCY.

T H E
P R E F A C E.



HERE are some things necessary to advertise the Reader of, by way of Preface to the following Work; both in regard to its Publication, and the Particulars wherein it is proposed to be more serviceable than any yet extant of the same kind.

T H E Study of Medicine has in all Ages been influenced by the Philosophy in vogue, because the Theory thereof is inseparable from a good Competency of Knowledge in natural Causes; insomuch that the Terms of Philosophical Writers have been transplanted into the Discourses of Physicians, and render'd it frequently necessary to explain such new Terms for the Use of those who have not Leisure or Opportunity to go the same Compass, and meet with such Præcognita as lie in the Course of more remote Studies. Hence Works of this Nature have frequently followed any considerable Alterations in the Theory of Medicine, as necessary to interpret the Terms introduced thereby; and the latest of such Performances have generally been preferred, for no other Reason, but that they have been the newest, and most fit for modern Use.

T H U S

THUS since the Introduction of Mathematical Reasoning and the Application of Mechanical Laws to a Study, indeed no otherwise knowable, the Books of Physicians abound with Terms very unmanageable, and which are not explained in any one Work extant ; for Want of which Recourse, those Books are to many Readers, who at first are not aware of the Change, as difficult and unintelligible, as if wrote in Languages altogether unknown.

BLANCHARD's *Lexicon Medicum* has been ever since its Publication much in Request among ordinary Readers, and is yet much the best of its kind for such ; but it is grown now extremely defective in the Respects already mentioned, because there is so much of a new Turn of Reasoning and Speaking among modern Physicians, that it is of no Manner of Assistance in reading them with Understanding. He also abounds with Terms long since intirely out of Use, and now of no other possible Service, but to puzzle good Sense, and to enable People to talk in a Manner that has been already too long proverbial ; and better Improvements in Anatomy, Chymistry, Botany, and in almost all the Branches of the Profession, have render'd the Explanations, even of the most useful Terms very imperfect. *Castellus* is indeed a Work of Exactness and Labour, but most useful for a critical Reader of the Ancients, and (if I may so call them) the Fathers in Medicine ; and is therefore far
from

from being of that general and modern Use as this is intended for; altho' what is therein of common Service, is here carefully retained.

AS for the Usefulness of Dr. Harris's Lexicon Technicum Magnum in this Respect, very little can be said; because he has done nothing else but transcribed Blanchard, good and bad, which must therefore depend upon its original Authority; and what he has added from some modern Physical Writers, appears to me to be in great Part lame, either out of that Gentleman's Haste, or Unacquaintance with the Things themselves he undertook to explain.

IN this Attempt therefore, to supply former Defects, the Reader may expect so far a Compliance with the Lovers of Etymologies and Derivations, as the Original Significations of each Term, and the Reason of its Application to such particular Occasion; more especially where it gives any Hint or Discovery of the Thing expressed. And this indeed may have its Use with many at their first Entry upon some of the practical Branches of this Science, as it is both necessary and ornamental at their Initiation into a Circle of hard Words, to understand them; because it is an inseparable Introduction to a knowledge of the Things themselves, and a convenient Testimony to others of their having such Knowledge.

BUT

BUT the chief Service I have herein proposed, is an Explanation at large of many things themselves contained under these technical Terms, so that they may be understood, in their greatest Latitude, and the various Lights they are used in by modern Writers. As for Instance, in the Word Momentum or Moment, there is no Work of this Nature in being that gives any of the Significations contained under it by modern Physical Writers, and yet they use it frequently, and with a great Latitude: This therefore, and all of the like Nature, are explained in their various Senses. And this has been render'd the more necessary, because less than half a Century has produc'd a great many Writings upon a way of Reasoning, for many Ages before in Disuse. The Lights and Discoveries these have brought into the several Branches of Medicine, are demonstrably very great. I have been at no small Pains therefore, not only to collect the Terms from such Writings that former Lexicons and Dictionaries are Strangers to, but also in explaining the Things to be understood by such Terms, that were not before known any more than the Terms themselves; and this as near as possible in the Expressions of the original Authors, insomuch that so far as we have been hitherto supply'd with a new System of Physicks and Medicine, they are digested into this Work.

I SAY Physicks and Medicine, because the latter cannot subsist without the former; for which Reason also are explain'd under some Term

or other leading thereunto, all such Parts of natural Philosophy and mechanick Laws as are necessary Præcognita to some practical Rules of Medicine. The Reader therefore on this View, will not wonder to find in a Word under this Title, a great deal about Attraction, the Laws of Motion, Gravitation, Air, Winds, Tides, Light, Heat, Cold, and the like; because he will find how they naturally lead to the Knowledge of some important Points of Practice, which without such previous Lights, must lie intirely in confusion, and upon the Hazard of Experiment and Guess-work.

AND because what is brought from Physicks and Mechanicks takes up so much room here, it may be necessary to inform the Reader, that there is no Knowledge in Medicine but by such Means. Experience without Theory will never make a Physician, any more than any other Practice can be obtain'd without an Acquaintance with the Rules on which it is founded; and he that is conducted only by Appearance, without being able to reason about their minutest Differences, will never see an Error till past Recovery. Whoever tries the Powers of his own Mind in Attention upon these Matters, will find no true Satisfaction but upon the same Assurances and Means of Conviction, as he obtains any Acquaintance with ordinary Machines, and all Compositions of Matter. If there be any thing of Science in Medicine, it is conducted by Demonstration, because conversant with Objects cognizable only by the Evidence of Sense;
but

but without this, it is Chance and Confusion: and the Enthusiast and the Empirick are upon as good a Foot as the Scholar and the Physician. Not that I would be here understood to speak of Certainty in all Instances of Practice, because there are more Data required to that than the Nature of Things can admit of: But the Theorist will come at more of those Data than any other, and in every Step be able to compute all the Chances that are risqu'd on either Side a disputable Case; whereas the Empirick and the Experimenter are altogether in Uncertainty, having no Rules to make even Observation it self of real Use.

THIS is not a Place for Controversy, or in confirmation hereof, I might appeal to Mechanick and Hypothetical Writings, in what a different manner the Mind is therein employ'd: the Latter amuse and flatter a Reader into a loss of all Distinction between something and nothing; and the Former engage the Understanding, and force Assent to Truths of Importance: the very Expressions of one sort convey Ideas that are vague, delusory, and confused; and of the other, such as are adequate, distinct, and comprehensive. Let a Person but compare, in this View, the new Theory of Fevers, and an Essay on Poisons, with the Criticon Febrium, and the State of Physick and Diseases, (all modern Books;) and I will venture to forfeit my small Share of Reputation in these Matters, if he finds not as much difference between the former two, and the two latter,

latter, as between Euclid's Elements and Cornelius Agrippa's Occult Philosophy, between Knowledge and Ignorance, Science and Chimera.

BUT to leave this to more proper Occasions; on my present Behalf I desire it to be believed, that a sincere Willingness and Desire to communicate to others what I think to have been of Use to myself, is the real Motive of the Publication hereof. Opportunities of Information are not alike afforded to all; and Assistances easiest to come at, may be very welcome to those who cannot procure others. I remember the Time, when such a Work as this would have been very acceptable to myself; it therefore may be allow'd me very naturally to suppose it agreeable to others in the same Course of Study.

IT may be here necessary to excuse a Fault or two charged by some upon this Work since its first Impression, viz. in not observing a due Proportion in its Parts, and including sometimes the Explanation of many Terms under one. As to the first, it is conceived never to abound, but where a Term hath so necessary a Connection with the Things themselves, that a right Sense cannot be given but by explaining a great deal relating thereunto: as under the Words Gland or Secretion, it is of no Consequence to know the Signification of either, according to the common Method of Dictionaries, without being taught also what concerns the Mechanical Structure of the one, and the Laws of Motion which take place in the other. And this Enlargement in some Instances it
has

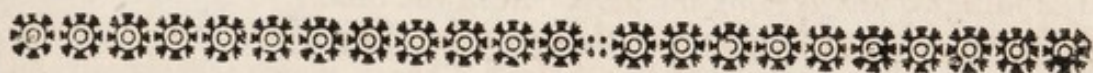
has been thought proper to take Notice of even in the Title of this Book. As to the other Objections, where the Explanation of one thing hath necessarily taken in many others, it was thought much more useful to give all under some principal Word, and refer to that from others, than to give separate Explanations under each; as under Eye, Ear, Parts of Generation, and the like, it hath been thought more useful to describe the whole Organ together, than the several Parts separately under their respective Names, as most convenient so to be understood, and taking up much less Room in the Whole.

IT may be likewise added, that in this Edition, a great deal relating to the Description of Medicinal Simples hath been expunged, as not proper to such a Work, and in their Room such Materials supply'd as were thro' Inadvertency before omitted.



Lexicon Physico-Medicum :

Samuel OR, A *Leacon*
New Medicinal Dictionary.



A B

A a Term in *Pharmacy*, otherwise wrote *a*, *aa*, or *ana*; which being never used but after the Mention of two or more Ingredients, implies that they should be taken in Quantities of the same Species and Denomination, whether by Weight or Measure, to form the Composition wherein they occur. The Word is originally *Greek*, *ἀνα*, a Preposition which signifies *separately*, or *of each by itself*.

Abaptiston, the same with *Trepandum*, which see.

Abarticulation, or *Dearticulation*, the same with *Diarthrosis*, which see.

Abbreviations, in Medicine, are certain Marks or half Words us'd by Physicians for the sake of Dispatch and Conveniency in their Prescriptions; tho' some are pleas'd to give

A B

another Interpretation to the thing; as if it was design'd to conceal their Art from such as know less *Latin* than themselves; or their Ignorance from such as know more; but this kind of Short-hand is very convenient in urgent Cases, or where a Patient's Life might be lost whilst a Man could write half a Sheet in the long way. Thus *Rx* readily supplies the Place of *Recipe*; *b. s.* that of *hora somni*; *m. f.* that of *misce fiat*; *n. m.* that of *nucis moschatæ*; *nuc. castan.* that of *nucis castaneæ*; *Elect.* that of *Electuarium*; *Haust.* that of *haustus*, &c. and in general, all the Names of compound Medicines, with the several Ingredients, are frequently wrote only up to their first or second Syllable, or some times the third or fourth, to make them clear and expressive. Thus *Croc.*

B

Anglic.

Anglic. stands for *Crocus Anglicanus*; *Theriac. Andromach.* for *Theriaca Andromachi.* *Elect. Lenitiv.* for *Electuarium Lenitivum*, &c. a Point being always placed at the End of such Syllables in Medicine, shews the Word is complete. See *Characters*.

Abdomen, from *abdo*, to hide, a Cavity containing many of the principal Parts of the human Body. It is commonly called the lower *Venter*, or *Belly*. It contains the Stomach, Guts, Liver, Spleen, Bladder, &c. and is within side lined with a Membrane called the *Peritonæum*. The lower Part is called the *Hypogastrium*; the foremost Part is divided into the *Epigastrium*, the right and left *Hypochondria*, and the Navel. 'Tis bounded above by the *Cartilago ensiformis*, and the Diaphragm, sideways by the short or lower Ribs, and behind by the *Vertebræ* of the Loins, the Bones of the *Coxendix*, that of the *Pubes*, and *Os Sacrum*. It is covered with several Muscles, from whose alternate Relaxations and Contractions in Respiration, Digestion is forwarded, and the due Motion of all the Parts therein contained, promoted both for Secrecion and Expulsion.

Abdominal Muscles, are ten in Number, five on each side, which by their joint Contraction strongly compress the *Abdomen*, and thus assist in the Action of Respiration and Digestion. See *Muscles*.

Abducent Muscles, from *abduco*, to draw from, are those which serve to open or pull back divers Parts of the Body; their Opposites being called *Adducent*, from *adduco*, to draw to.

Abductor Indicis, is a Muscle of the Fore-finger, which is not to be seen till the *Abductor Pollicis* is rais'd. It rises from the *Os Metacarpi*, that

sustains the Fore-finger; and descending over the first Joint of the said Finger, becomes tendinous, and uniting with the Tendon of one of the lumbrical Muscles, is inserted with it, together with the Tendon of the former Muscle. Its Name expresses its Use, *viz.* to draw the Fore-finger from the rest.

Abductor minimi Digiti, is a Muscle which appears in some Bodies, divided into two or three Muscles, having each a different Series of Fibres. It arises fleshy from the third and fourth Bones of the *Carpus*, and the upper Parts of the sub-adjacent *Os Metacarpi*; and is inserted with the Tendon of the *Extensor minimi Digiti*, at the superior Part of the third Bone of the little Finger: its Use being to draw it from the others.

Abductor Pollicis, is a Muscle of the Thumb, which arises broad and fleshy from the internal Part of the *Ligamentum Transversale Carpi*; whence descending it lessens and becomes tendinous at its Insertion into the superior and external Part of the second Bone of the Thumb laterally. This draws the Thumb from the Fingers; whence it has its Name.

Abductor Pollicis Pedis, is a Muscle which arises fleshy from the *Os Calcis*, internally and laterally, and is inserted with another, springing from the *Os Cuneiforme majus* in one common Tendon, into the *Os Sesamoides* of the great Toe laterally. It serves to pull the great Toe from the rest.

Abductor minimi Digiti Pedis, is a Muscle which arises outwardly tendinous, but inwardly fleshy, from the external Part of the *Os Calcis*, and becoming tendinous in half its Progress on the outside of the Foot; where it joins with another from the

Os Metatarsi of the little Toe, and is inserted with it into the upper Part of the first Bone of the little Toe externally and laterally ; by which Means it pulls the little Toe from the rest.

Ablactation, is the Weaning a Child, depriving him of the Breast, or taking him away from his Nurse ; as the Word compounded of *ab* from, and *lact* Milk, expressly signifies.

Abluents, from *abluo*, to wash away ; are such things as thin, dilute, purify and sweeten the Blood, or correct its Acrimony. See *Detergents*.

Ablution, derived from the same, is that washing in Water which Chymists use to cleanse some Medicines from their Impurities, but most commonly from their Salts, which Water dissolves ; as in *Diaphoretick Antimony*, and the like. It also sometimes signifies bathing in Water, or cleansing the Body externally from the Filth which may chance to adhere thereto.

Abomasum, is one of the Ventricles of such Animals as chew the Cud ; in whom are reckon'd four, the *Venter*, *Reticulum*, *Omasum*, and *Abomasum*.

Abortion, is the same with Miscarriage, and signifies that a Woman is deliver'd of her Burden before the due time, or before the *Embryo* is completely form'd and fitted for Exclusion. 'Tis usually counted unlawful among Christians to procure Abortion by artificial Means ; but 'tis very remarkable of *Hippocrates*, that tho' in his Oath, which he thinks should be administered to all, who design for the Practice of Physic, he makes it an Article, that they never attempt to procure Abortion : yet himself, if indeed it be *Hippocrates*, in both Cases, formally delivers the Process

wherein he by violent Motion procured it in a young Woman not long gone with Child.

Abrasion, from *abrado*, to tear off, generally expresses the wearing away the natural Mucus which covers the Membranes, particularly those of the Stomach and Guts, by corrosive or sharp Medicines or Humours. It is also used to express that Matter wore off by the Attrition of Bodies against one another.

Abracadabra, is a Parcel of Letters, which like numerous other Combinations less taken notice of, make a Sound without any Meaning ; but which being written after a fantastic manner, and hung about the Neck, some have been so silly as to think would cure Diseases. Thus *Serenus* in his *Medicina metrical*, cap. 52. commends it against a *Semi-tertian*. But such Tricks are now justly detested as unlawful, by all Physicians who call themselves Christians, and laugh'd at by the more rational Part of the rest.

Abscess, generally expresses that critical Discharge of Humours, which passes not off by the common Emunctories, but is separated from the Blood in the Capillaries, where it collects in such a quantity, as to form a Tumour, and break or corrode the Vessels, if the Surgeon's Art does not otherwise give it vent. The Pus or Matter thus collected, is sometimes included in a *Cystis*, and appears curdy, or else like Honey or Tallow ; and sometimes too in the Body of the Tumour, Stones or other heterogeneous Substances have been found. Both *Hippocrates* and *Galen* sometimes use the Word in a more lax Sense, to signify the Conversion of one kind of Fever into another ; as of an *Intermittent* into a *Continuent*, or the contrary : and at others to

express any critical Evacuation. It is the same with *Aposteme*, or *Imposthumation*; and derived from *abcedo*, to go off.

Absolute Gravity, is that Property in Bodies by which they are said to weigh, without regard to any Circumstances of Modification, and is always observ'd to be as their Quantity of Matter. See *Specifick Gravity*.

Absorbent, from *absorbeo*, to drink up, is such a Medicine as by the Softness or Porosity of its component Parts, either causes the Asperities of pungent Humours, or like a Sponge dries away superfluous Moisture in the Body, and is the same with a *Dryer*, or a *Sweetener*. *Waldschmidt* in his *Institutions* erroneously reckons the *Absorbents* amongst *Asperients*, for they are never so but by Accident.

Absorbent Vessels, are those Lacteals which open with their Mouths into the Sides of the intestinal Tube, to drink in the Chyle from thence, which they discharge into the Mesenteric Veins.

Abstergent, see *Detergent*.

Abstraction, from *abstraho*, or *abtraho*, to draw from, is a Power peculiar to the mind of Man, whereby he can make his Ideas, arising from particular things, become general Representatives of all of the same kind. Thus, when the Eye represents Whiteness in a Wall, a Man can abstractedly consider the Quality of Whiteness, and find it attributable to many other things besides; as to Snow, to Milk, or the like: and this Quality, whatsoever it be, consider'd apart from the Concrete, or the Subject in which it inheres, is said to be taken in the Abstract. This is the doctrine of Mr. *Locke*, and others who wrote before him, but it has since his time been call'd in question; for some there are who deny all such abstract

Ideas, and tell us that a general abstract Idea is a mere nothing, all the Ideas we have being constantly particular; so that they would say, 'tis impossible to think of *White*, abstractedly or independent of some Subject wherein 'tis lodg'd. Whether this be true or no, every Man may best know by his own Experience; but the Point well clear'd would open a new Scene in the Doctrine of Qualities, and possibly over-set a great part of our present Philosophy about them. This Term is likewise used in Pharmacy for the drawing off or exhaling away a Menstruum from the Subject it was put to dissolve.

Abstractitious, from the same Derivation as the foregoing, is used by *Ludovicus* and some other Writers in Pharmacy, to distinguish the natural Spirit from that artificial one which is procur'd from them by Fermentation.

Acanaceous, from *ἀκανῶω*, *acuo*, to sharpen. All Plants of the Thistle kind, that are prickly, and have Heads, are called *Acanaceous*. Also the sharp and prominent Parts of Animals are frequently thus call'd.

Acantabolus, is a Surgeon's Instrument, call'd also *Volsella*, like a Pair of Pincers, wherewith to take out any prickly Substance that shall chance to stick to the *Oesophagus*, or Gullet; as also the Fragments of corrupted Bones, Hair, or any thing that by chance remains in a Wound. 'Tis also used for that Instrument wherewith People pull out the Hairs of their Eyebrows; from *ἀκανθα*, *Spina*, a Thorn, and *ἐλάω*, *jacio*, to throw away.

Acantha, from *ἀκανῶω*, *acuo*, to sharpen, is sometimes taken for the *Spine*, or rather the outward Protuberances thereof, which are somewhat sharp, and preserve the Mar-

row of the Channel in the Backbone from external Injuries.

Acari, a small Creature bred in Wax, said by *Aristotle* to be the least Object of the human Sight. It also signifies a particular kind of Vermin, that lodge themselves under the *Cutis* and *Cuticula*.

Acceleration, is a continual Increase of Motion in any Body, as Retardation is its Decrease; both which may be made intelligible from due Attention to this Axiom, *The Mutation of Motion is always proportionable to the Force impressed, and according to the Direction thereof.* For supposing Gravity, whatever it be, to act uniformly on all Bodies at equal Distances from the Earth's Centre, and that the time in which any heavy Body falls to the Earth be divided into equal Parts infinitely small; let Gravity incline the Body towards the Earth's Centre, while it moves in the first infinitely small Part of the Time of its descent, if after this the Action of Gravity be supposed to cease, the Body would go towards the Earth's Centre equally, with a Velocity equal to the Force of the first Impression. But now since the Action of Gravity still continues; in the second Moment of Time the Body will receive a new Impulse downwards, and then its Velocity will be the double of what it was in the first Moment; in the third Moment or Particle of Time, it will be triple; in the fourth, quadruple, and so on continually. Wherefore, since those Particles of Time are supposed infinitely small, and all equal to one another, the *Impetus* acquir'd by the falling Body will be every where as the Times from the Beginning of the Descent. And since the Quantity of Matter in the Body given continues the same, the Velocity will be as the Time in which it is acquir'd.

See *Laws of Motion*, and *'sGravensand's Mathematical Elements of Natural Philosophy*, where there are produced many Experiments, demonstrating both the Laws of Acceleration, and Retardation of heavy Bodies.

Acceleratory Muscles, from *ad*, to, and *celer*, swift; are those of the *Penis*, from the upper Part of the *Urethra*, till it ascends under the *Os Pubis*, which bind or constrict the *Corpora Caverosa* of the *Urethra*. They are called *Acceleratores Urinæ*, from their expediting the Discharge by Urine. They also assist the *Erectores Penis*, by driving the Blood contained in the Bulb of the cavernous Body of the *Urethra* towards the Glans, in a greater Quantity, whereby it becomes distended; the Veins which carry off the reflux Blood from the *Corpus Caverosum* being at that time compressed by the Swelling of these Muscles.

Ascension, from *accendo*, to kindle; is the kindling, or setting any Body on Fire.

Accession, the same as *παροξυσμός*, among the *Greeks*, and the *Exacerbation* of the *Latins*; is the Fit, or Time of being worst in any *Intermittent Disease*.

Accessory Nerve, from *ad*, to, and *cedo*, to approach, so called by *Willis*, is that which arises from the *Medulla Spinalis*, about the beginning of the sixth Pair of the Neck; as it ascends to the Head, it receives on each side a Twig from the first five Pair of Nerves of the Neck, as they arise from the *Medulla Spinalis*; then it enters the Skull, and passes out of it again, with the *Par Vagum*, and is wholly spent upon the *Musculus Trapezius*.

Accident, is what cannot subsist of itself, but hath a necessary Relation to something else. And an Effect

feet or Distemper is said to be accidental, which does not flow necessarily from the first Cause, but from casual Interpositions. And it is by some Writers used pretty much in the same Acceptation as the Term *Symptom*.

Accretion, from *ad* to, and *cresco*, to increase, signifies the same as Apposition, or Juxta-Position. Dr. *Havers*, in his *Osteology*, says, that the nutritious Particles being separated by the Glands placed every where on the sides of the Arteries, are carried into those small nervous Pipes or Interstices of the Fibres, where the Spirits move, so that they fall in the way of the Spirits Motion; which he supposes to be twofold; one direct, and the other rotatory. While an Animal is capable of Accretion, and the Particles of which the Solids consist, are not entirely united at their Extremities, but capable of receding one from another, both end-ways and laterally; the Spirits act upon the nutritious Particles by their rotatory Motion, by which they carry them to the sides of the Fibres and bony Strings, driving some against the sides of their Parts, and forcing them out laterally; others they drive into the Interstices between the Extremities, thereby lengthening every Series of them; and thus the Parts of an animal Body increase both in Thickness and Longitude. But after the Particles are united at their Extremities, and no longer capable of making room to lodge the nutritious Parts out of the way of the direct Motion of the Spirits; then the Spirits come to act upon the nutritious Matter by that Motion, and so drive it thro' the nervous Channels, that it has not the liberty of stopping and adhering: upon which the Accretion of the Animal ceases.

Acerb, from *acerbus*, sour; fig-

nifies somewhat acid, with an addition of Roughness; as most Fruits are before they are ripe.

Acetabulum, the same as *Umbilicus Veneris*. It expresses also that Cavity in the Huckle-bone, which is appointed to receive the Head of the Thigh-bone within it: and likewise several Glands are called *Acetabula*; concerning which, see *Cotyledones*.

Acetum, Vinegar; the Productions of vinous Fermentation, fermented afresh after a peculiar manner are thus call'd. Vinegar is a Solution of the Tartar, or native Salt of the Vegetable which affords it, and therefore has wonderful Virtues in Medicine, exceeding those of Wine; but its Nature, Virtues and Uses, must be learn'd from Chymistry.

Achilleus, or *Tendo Achillis*. The Tendon form'd by the Tails of several Muscles, and tied to the Os *Calcis* is thus call'd from its Action, in conducing to Swiftnes of Pace, the Term importing so much.

Achor, is a Species of the *Herpes*, and appears with a crusty Scab, which causes an Itching and Stink on the Surface of the Head, occasioned by a salt sharp Serum oozing thro' the Skin.

Acidulae, a Diminutive of *Acid*, are medicinal Springs impregnated with sharp Particles, as all the Nitrous, Chalybeate, and Alum springs are. The specifick Gravities of the several Mineral Waters of *England*, are not yet settled to the Satisfaction of all Parties: some making them lighter, and others heavier than common Water; and each strenuously and positively arguing on his own side, and fondly supposing that the Waters themselves can never alter, (tho' we see they do every Hour) and that them-

themselves cannot be mistaken in their Experiments, tho' try'd ever so roughly. There are very few Men qualified to make this Experiment with any tolerable Accuracy; and tho' it were done to the utmost Exactness, he must be but little acquainted with Nature, who shall pretend to draw any general and dogmatical Conclusions from his own particular Observations, made, perhaps, only at a few particular times, without any Regard to the thousand Circumstances that would be taken into Consideration by a wary Naturalist.

Acids, from *Acidus*, four: all Liquors and Substances are so called, which being composed of pointed Particles, affect the Taste in a sharp and piercing manner. The common way of trying whether any particular Liquor or Substance hath in it Particles of this kind, is by mixing it with Syrup of Violets, which it will turn of a red Colour; but if it has none, and inclines to the other side, that of containing alkaline or lixivial Particles, it changes that Syrup green. The Generality of Mankind seem little aware of what vast Importance it is to Physic and Natural Philosophy, fully to settle and determine the precise Nature, and set the Difference between Acids and Alkalies. This has indeed been attempted by various Writers in Medicine, but with Views too narrow and confined for a general Naturalist, who might easily clear up the Point from a Variety of Experiments; but not without a considerable Degree of Knowledge in Chymistry. The Words in themselves carry a precise Meaning, and are not the vague fluctuating Terms they pass for among the ignorant. And he who does not know the Difference between *Alkalies* and *Acids*, the Pro-

perties and Signs of each, their Effects upon the human Body, and when to apply them, ought not to be trusted in the Practice of Physic. But this necessary piece of Knowledge is not to be gained without conversing with genuine Chymistry, which alone can teach the Generation, Destruction, Transmutation and Disguises of *Acids* and *Alkalies*, with their Nature, Powers, Properties, Effects, and various Uses both in natural Philosophy and Medicine.

Acid Spirits: those of Vitriol, Sulphur, &c. are so called, but very improperly, because they are specifically heavier than Water, and are nothing else but sharp Salts divided and fused in Phlegm. Sir *Isaac Newton* and M. *Homberg* have furnish'd us with a very pretty Theory of *Acids*, as to the Manner of their Action, which proceeds from their attractive Powers and pointed Figures of their saline Spiculæ; and M. *Homberg* has an ingenious way of estimating their different Forces, which he finds to be in Proportion to their Gravities.

Acini, small Grains that grow in Fruits like the Grape-Stones; whence Anatomists have called many Glands of a similar Formation, *Acini Glandulosi*.

Aciniformis Tunica, is the same with the *Tunica Uvea* of the Eye.

Acmaesticos, the same as *Homotonos*, is a Species of a *Synochus*, wherein the febrile Heat continues of the same Tenor to the end.

Acme, from ἀκμή, *vigeo*, to grow strong; signifies the height of any thing, and is more especially used to denote the height of a Distemper; which is divided into four Periods by some Institution Writers, 1. The *Arche*, the Beginning or first Attack. 2. *Anabasis*, the Growth.

Growth. 3. *Acme*, the Height. And, 4. *Paracme*, which is the Declension of the Distemper.

Acor, is sometimes used to express that Sourness in the Stomach contracted by Indigestion, and from whence Flatulencies and acid Belching arise.

Acousticks, are Medicines or Means to help the Hearing, from *ἀκούω*, *audio*, to hear.

Acraſy, *ἀκρασία*, signifies Debility or Impotency, from Relaxation, or a lost Tone of the Parts.

Acrid, from the same Original as the former, signifying the same thing, tho' in a less Degree.

Acrimony, expresses a Quality in Bodies, by which they corrode, destroy, or dissolve others; from *acer*, sharp. 'Tis of great Importance to a Physician to be acquainted, as he can only be from Chymistry, with the various kinds of Acrimony attending the different kinds of Aliment, and so causing Diseases in the human Body. There is first a saline Acrimony, which may be either muriatic, spontaneously acid, or fermented: the saline Acrimony may be the Cause of thirst, hoarseness, roughness, dryness, stiffness of the Parts serving to Deglutition and the Voice; very considerably affect the serous Humours of the Body, too much dissolve or unfit them for repairing the Body, and even destroy the Texture of the smaller Solids, and also occasion gnawing Pains and the muriatic Scurvy: the spontaneous acid Acrimony will astringe or crisp up the Fibres, incrassate and coagulate the Juices, give the Heart-burn, &c. And this kind of Acrimony principally resides in such Summer Fruit as is over ripe. The like Effects, but in a less Degree, may also be produced by fermented

acrimonious Bodies, as by pricked Wines, Vinegar, &c. by too free a Use whereof the Serum grows sharp and acrid, so as to bring on the Rheumatism, Gout, &c. The aromatic or spicy Acrimony caused in the Body by the Mixture of acrid Salts, and Oils, will give a Thirst, Heat, the Heart-burn, Vomiting, a Fever, &c. Thirdly, the Acrimony of strong spirituous or inebriating Liquors, will cause a Dryness in the Mouth, a crispy Constriction of the Fibres, an obstinate Coagulation of the Juices, Weakness, Flatulencies, Obstructions, Fevers, a Dropsy, &c. And lastly, the subtile fermenting Acrimony of vinous Liquors newly brewed or fermented, will generate Wind in the Intestines, cause Vomiting, a Diarrhæa, &c.

Acrisia, is a turbulent State of a Disease, which will scarce suffer any Judgment to be formed thereof; from the privitive Particle *a* and *κρίνω*, *judico*, to judge.

Acrocordon, is a particular Species of Warts, that is more sharp, prominent and pendulous than the common Sort, much taken notice of by ancient Writers, particularly by *Aetius* and *Celsus*; and of the same kind as *Plutarch* reports, *Q. Fabius Maximus* to have taken the Cognomen of *Verrucosus* from, and mentioned by *Serenus Sammonicus* in this Distich.

Interdum existit turpi verruca papilla,

Hinc quondam Fabio verum cognomen adhæsit.

Acromium, from *ἀκρῶς*, *summus*, the Top; and *ὤμῳ*, *Humerus*, the Shoulder; it is the upper Process of the Shoulder-blade.

Acte,

Aete, a Word by which some ancient Writers expressed Elder.

Action, and *active Principles*, in Phyc, have been made use of to exprefs some Divisions of Matter that are by some particular Modifications, comparatively active in respect of others; as the Chymists call Spirit, Oil and Salt active, because their Parts are so disposed to Motion, in Comparison of those of Earth and Phlegm; but in a strict Sense, all Motion in Matter is rather Passion; and there is no active Principle, unless we call so that known Property of Gravitation, or Attraction, on which the *Newtonian* Philosophy is founded.

Acuate, from *acuo*, to sharpen; is when an Acid is added to any Mixture to sharpen it, or make it sourer than before.

Acute Disease. Institution Writers define this very confusedly; but what best expresses it, is any Disease which is attended with an increased Velocity of Blood, and terminates in a few Days.

Additament, a Term of Chymistry; which signifies any Material mixt along with a principal Ingredient, to fit it for the designed Operation. Thus Salts are distilled from Bone-ashes, Brick-dust, or the like, to prevent their running together, and make them afford their Spirits with the greater Ease.

Adducent Muscles, from *ad*, and *duco*, to bring to; are those that bring forward, close, or draw together the Parts of the Body where-to they are annexed: as

Adductor Oculi, is the Muscle of the Eye; so called, because it inclines the Pupil towards the Nose; and also *Bibitorius*, because it directs the Eye towards the Cup in drinking.

Adductor Pollicis, is a Muscle of

the Thumb, which arises tendinous in common with the *Adductor Indicis*, and ascends obliquely towards a broad Termination at the superior Part of the first Bone of the Thumb; and this brings the Thumb near the Fore-finger.

Adductor Pollicis Pedis, is a Muscle of the great Toe, which arises from the inferior Part of the *Oss Cuneiforme tertium*, and is inserted into the internal Part of the *Ossa Sessamoidea* of the great Toe, which it draws nearer the rest.

Adenography, is a Treatise of the Glands, from *αδην* *Glandula*, a Gland; and *γράφω*, *scribo*, to write.

Adenosus abscessus, is a hard unripe Tumour, from obstructed Viscidities, that appears like a natural Gland, altho' in Parts free from them.

Adeps, Fat, sometimes is distinguished from *Pinguedo*, and applied only to the harder Fat commonly called Suet; but by most Writers they are used indifferently.

Adepts: Such are called so as pretend to some extraordinary Skill in Chymistry, from *adipiscor*, to obtain; but these have too often proved either Enthusiasts or Impostors: and such *Paracelsus*, *Helmont*, and their Followers have been thought; but whether justly or no, let those say who are best acquainted with their Writings and Pretensions.

Adequate, expresses an Equality in all the Properties of two Bodies, from *ad*, and *æquo*, to be equal to; and thus adequate Ideas are such Images or Conceptions of an Object, as perfectly represent it.

Adiaphorous, a Term which implies the same with neutral; and is particularly used of some Spirits and Salts, which are neither of an acid nor alkaline Nature.

Adi-

Adiapneustia, from the privative Particle *a* and *διαπνέω*, *perspiro*; is a Diminution or Obstruction of natural Perspiration, and that in which the Antients chiefly placed the Cause of Fevers.

Adiposa Membrana, is any fat Membrane, whereof every Muscle has one, from *adeps*, which signifies Fat; but it is more particularly applied to that in which the Kidneys are wrapped up.

Adiposa Vena, or *Renalis*, is a Vein arising from the descending Trunk of the *Cava*, which spreads itself on the Coat and Fat that covers the Kidneys.

Adiposi ductus, called also *Sacculi*, and *Vesiculæ adiposæ*, are Passages which convey the Fat into the Interstices of the Muscles, or to the Parts between the Flesh and the Skin.

Adjutorium, from *ad*, and *juvo*, to help, is a Bone so called by *Vesalius* and others, because it is very useful in lifting up the Arm. This Term is also given by some Writers to such Means of Cure as are only subservient to others of more Importance.

Adnata Tunica, so called from *ad*, and *nascor*, to grow to, is the common Membrane of the Eye; also called conjunctive, which springs from the Skull, and grows to the exterior Part of the *Tunica Cornea*; and that the visible Species may pass there, leaves a round Cavity forward, to which is annexed another Tunic, without any particular name, made up of the Tendons of those Muscles which move the Eye; by reason of its Whiteness it is also called *albuginea*. See *Eye*.

Adolescens, expresses that Part of Life between the End of Childhood, and a Man's full Strength, and is reckoned the most healthful.

Ad Pondus omnium, the Weight of the whole, signifies, that the last prescribed Ingredient ought to weigh as much as all the others taken together.

Adstrictory. See *Astringent*.

Adventitious, is any thing that accidentally, and not in the common Course of natural Causes, happens to make a Part of another; as the Nodes and Glands in strumous Cases are said to be adventitious Glands, in Distinction from those which are naturally produced.

Adulteration, is the debasing a Medicine with bad Ingredients, or putting one thing for another for the sake of greater Profit; a thing very well understood by the wholesale Dealers in all the Parts of Medicine.

Aduſt, from *aduro*, to burn; signifies such Humours as by long Heat become of a hot and fiery Nature, as Choler, and the like. But this Term is of late much wore out of Physic, because it conveys no distinct Idea.

Ægagropilus, is used for those Balls which are generated in the Stomachs of some Animals, containing Matter like Hair, and hard without Side; and of which a very elaborate Dissertation hath been wrote by *Hieronimus Velschius*; which the curious may turn to for further Information. 'Tis derived from *αἰγᾱγρος*, *rupicapra*, a wild Goat, and *πίλος*, *globulus*, a Ball.

Ægylops, is a Tumour or Swelling in the great Corner of the Eye, by the Root of the Nose, either with or without an Inflammation. This Name is also given to a Plant, for its supposed Virtues against such a Distemper.

Ægyptiacum, is an Ointment, tho' improperly so called, as consisting only of Honey, Verdigrease and

and Vinogar. 'Twas first prescribed by *Mesue*, and seems to take its Name from its Colour, which resembles that of an *Egyptian*.

Æolipile, is a round hollow Ball made of Iron, Brass, Copper, &c. and furnished with a Neck, in which there is a very slender Pipe opening to the Ball. Sometimes the Neck is made to screw into the Ball, that the Cavity may the more readily be filled with Water. But if there be no Screw, fill it with Water, thus; heat the Ball red hot, and then throw it into a Vessel of Water; the Water will run in at the small Hole, and fill about $\frac{2}{3}$ of the Cavity. And if after this the *Æolipile* be laid on or before the Fire, so that the Water and Vessel become very much heated, the vaporous Air will be forced out with very great Noise and Violence; but it will be by Fits, and not with a constant and uniform Blast. Perhaps they may be sometimes of Use to blow the Fire, where a very quick and strong Blast is required. And they may serve to scent or perfume a Room, by filling them with perfum'd instead of common Water. They are commonly used in *Italy* to cure smoaky Chimneys, which they do by being hung over the Fire, and carrying up the Smoke thereof along with the Steam that issues out of their Orifice.

Æquilibrium, is when either equal Weights at equal Distances, or unequal ones at reciprocally proportionable Distances from the Center, make the Arms of any *Libra* or Balance to hang even; so that they do equiponderate, and not outweigh one another: In such a Case, we say the Balance is in *Æquilibrio*, a common Term in Mechanicks.

Æquivocal. See *Æquivocal*.

Æther is understood of that Me-

dium or Fluid, in which all other Bodies float: But some explain themselves to mean by this Term the whole Atmosphere, and whatsoever is suspended in it. But *Æther*, in propriety of Language, signifies a fine, fluid, subtile Substance or Medium much rarer than Air, and every way diffused in the interstaller Spaces of the World, so that it possesses infinitely more room than all the solid Matter of the Universe put together. An *Æther*, endow'd with all the Properties an ingenious Philosopher cou'd require, might help to explain many Phænomena of Nature, and has for this purpose been adapted by Sir *Isaac Newton*, and offer'd as the immediate Cause of Gravity. See *Air*.

Æthiops Mineral, a Medicine so called, from its dark Colour, prepared of Quicksilver and Sulphur ground together in a marble Mortar to a black Powder. 'Tis frequently prescribed; but those who have used it most, think its Virtues are not very great.

Ærugo, Verdigrease, is Copper reduced to a green friable Substance by Acids. *Dioscorides*, *Rulandus*, *Schroder*, and other Writers on the *Materia medica*, describe both a native and factitious Sort. Others give the same Appellation to the Rust of Iron or Lead, particularly *Fallopian*.

Æstuary, a kind of Vapour-bath. *Ambrose Parey* calls an Instrument thus, which he describes for conveying Heat to any particular Part; and *Palmarius*, de morb. contag. gives a Contrivance under this Name for sweating the whole Body.

Ætiology, from *αἰτία*, *Causa*, a Cause, and *λόγος*, *Sermo*; is a Discourse on the Causes of Distempers.

Ætites,

Ætites, Eagle-Stone, so called because it is said to be found in an Eagle's Nest. It is about the Bigness of a Chestnut, and is hollow with somewhat in it that rattles upon shaking; which affords some very odd Conceits, it being for this Reason termed by some, *Lapis veluti prægnaus, alio in Utero sonante, i. e.* A Stone pregnant with another; but the fabulous Conjectures of its Virtues begin to be taken but little notice of.

Affection, is applied on many Occasions where the name of the Distemper is put adjectively, as Hypochondriacal Affection, and the like. This Term is also sometimes used in Physics, much in the same Sense as Properties, as the Affections of Matter are those Properties with which it is naturally endued.

Agillochum, Aloes Wood; it is a Tree in the *East-Indies* brought to us in small Bits, of a very fragrant Scent. It is hot, drying, and accounted a Strengtheners of the Nerves in general. The best is of a blackish purple Colour, and so light as to swim upon Water.

Agent, is improperly sometimes attributed to Menstruums, or such Bodies as in Mixture have the greatest share of Motion.

Agglutination, is in strictness the glewing two Bodies together; but generally imports the Addition of new Substance, or giving a greater Consistence to the animal Fluids, whereby they are rendered fitter for Nourishment. See *Incrassating*.

Aggregate, is the Sum arising from the Addition of two or more Bodies together; from *ad*, and *gre-go*, to gather together.

Agresta, is the same as *Omphacium*, which is the Juice of unripe Grapes. The Oil likewise from unripe Olives is by some called in like manner.

Agrypny, from the privative Particle *a* and *ὑπν*, *Somnus*, is long Watching, when Persons cannot sleep, and is the same as a *Coma*, *Vigil*.

Agues: Intermitting Fevers of all kinds are of this Class; and whether there is a cold Fit or not, is of no great Moment as to the Intentions of Cure, that being more accidental than Essential hereunto; altho' indeed the Term *Ague*, if from *Algor*, Coldness, as some will have it, is applicable only where the cold Fit is sensible. See *Digression 2.* concerning Agues, &c. in the Explanations of *Sanctorius's Medicina Statica*.

Agyrtæ, formerly expressed certain Strollers, who pretended to strange things from supernatural Assistances, but of late is applied to all Quacks, and illiterate Dabblers in Medicine.

Air, is generally understood to be that Fluid in which we breathe, that is compressible, dilatable, and covers the Earth to a great height; and differs from *Æther* in refracting the Rays of the heavenly Luminaries. For its many Properties, consult *Boyle*, *Hook*, and Sir *Isaac Newton*; but the most material are the following.

The lower Parts of Air are always more compressed, than those above; and the Spaces into which it may be compressed, are always reciprocally proportional to the compressing Weight; and because its Density is proportional to its Compression, its Particles recede from each other with Forces reciprocally proportional to the Distances of their Centers.

The specific Gravity of Air to Water, according to Mr. *Boyle*, is in round Numbers estimated, as 1 to 1000: But from comparing his

Ex.

Experiments with the Observations of Dr. Halley and Sir Isaac Newton, its Density appears to be nearer, as 1 to 800; and the Density of Mercury to Water being as 14 to 1, the Density of Air to Mercury will be as 1 to 11200: so that the Air we breathe in takes up 11200 times the space that a like Quantity of Mercury would. And yet the Air by Experiment hath been found, without any adventitious Heat, by the Force of its own Spring, to possess 13000 times the Space it does when pressed by the the incumbent Atmosphere; and therefore it may possess a Space 145600000 times greater than the same Weight of Mercury; and by the Addition of Heat, it may be forced to fill a Space yet much larger. Now if we consider the Air we breathe in may be compressed into 40 times less Space than that which it now fills, it may then possess a Space 520000 times greater at one time than another; for $13000 \times 40 = 520000$.

Our Bodies are equally pressed upon by the incumbent Atmosphere, and the Weight they sustain is equal to a Cylinder of Air, whose Base is equal to the Superficies of our Bodies. Now a Cylinder of Air of the Height of the Atmosphere is equal to a Cylinder of Water of the same Base, and 35 Foot high, as appears by the Experiment of Pumping; so that every Foot square of the Superficies of our Bodies, is pressed upon by a Weight of Air equal to 35 cubical Feet of Water; and a cubical Foot of Water being found by Experiment to weigh 76 Pound Troyweight, therefore the Compass of a Foot square upon the Superficies of our Bodies sustains a Quantity of Air equal to 2660 lb. for $76 \times 35 = 2660$; and

so many Foot square as is upon the Superficies of a Body, so many times 2660 lb. does that Body bear: So that if the Superficies of a Man's Body was to contain 15 square Feet, which is pretty near the Truth, he would sustain a Weight equal to 39900 lb. for $2660 \times 15 = 39900$, which is above 13 Tun. The difference of the Weight of Air which our Bodies sustain at one time more than at another, is also very great. The whole Weight of Air which presses upon our Bodies when the Mercury is highest in the Barometer, is equal to 39900 lb. The Difference therefore between the greatest and the least Pressure of Air upon our Bodies may be proved to be equal to 3982 lb. The Difference of the Air's Weight at different times, is measur'd by the different Height to which the Mercury is buoy'd up in the Barometer; and the greatest Variation of the Height of the Mercury being 3 Inches, a Column of Air of any assignable Base equal to the Weight of a Cylinder of Mercury of the same Base, and the Altitude of 3 Inches will be taken off from the Pressure upon a Body of an equal Base, at such times as the Mercury is three Inches lower in the Barometer; so that every Inch square of the Surface of our Bodies is pressed upon at one time more than another, by a Weight of Air equal to the Weight of three cubical Inches of Mercury. Now a cubical Foot of Water being 76 lb. a cubical Foot of Mercury must be 1064 lb. $= 102144$ Drams. And as 102144 Drams is to a cubical Foot, or which is all one, 1728 cubical Inches: $59 \frac{1}{7} \frac{2}{3}$ Drams, to one cubical Inch. So that a cubical Inch of Mercury (throwing away the Fraction, which is inconsiderable) is $= 59$ Drams; and there being

ing 144 square Inches in a Foot square, therefore a Mass of Mercury of a Foot square Base = 144 square Inches, and three Inches high, must contain 432 cubical Inches of Mercury, which $\times 59$ (the Number of Drams in a cubical Inch of Mercury) makes 25488 Drams: and this Weight does a Foot square of the Surfaces of our Bodies sustain at one time more than at another. Suppose again the Superficies of a human Body = 15 Foot square, then would the Body sustain at one time more than at another, a Weight = $15 \times 25488 = 382320$ Drams (= 47790 Ounces) = $3982\frac{1}{2}$ lb. Troy.

Hence it is so far from being a Wonder, that we sometimes suffer in our Health by a Change of Weather, that it is the greatest we don't always do so: for when we consider that our Bodies are sometimes pressed upon by near a Tun and a half Weight more than at another, and that this Variation is often very sudden; 'tis surprizing that every such Change should not entirely break the Frame of our Bodies to pieces. And the Vessels of our Bodies being so much straightened by an encreas'd Pressure, wou'd stagnate the Blood up to the very Heart, and the Circulation would quite cease, if Nature had not wisely contriv'd, that when the Resistance to the circulating Blood is greatest, the *Impetus* by which the Heart contracts should be so too; for upon Increase of the Weight of the Air, the Lungs will be more forcibly expanded, and thereby the Blood more intimately broken and divided, so that it becomes fitter for the more fluid Secretions; such as that of the nervous Fluid, by which the Heart will be more strongly contracted. And the Blood's Motion towards

the Surface of the Body being obstructed, it will pass in greater Quantity to the Brain, where the Pressure of the Air is taken off by the *Cranium*; upon which Score also more Spirits will be separated, and the Heart on that account too more enabled to carry on the Circulation thro' all passable Canals, whilst some others towards the Surface are obstructed. The most considerable Alteration made in the Blood upon the Air's greater or lesser Pressure on the Surface of our Bodies, is rendering the Blood more or less compact, and making it croud into a less, or expand into a greater Space in the Vessels it runs in: For the Air contained in the Blood always keeps itself in *Æquilibrio* with the external Air that presses upon our Bodies; and this it does by a constant *Nisus* to unbend itself, which is always proportional to the compressing weight by which it was bent: so that if the Compression or Weight of the circumambient Air be ever so little abated, the Air contained within the Blood unfolds its Spring, and forces the Blood to take up a larger Space than it did before. For further Effects of the Changes of Air upon human Bodies, see *Mead de Imperio Solis ac Lunæ in Corpora humana*; *Wainwright's Non-naturals*; *Sanctorius's Medicina Statica*, with *Explanations*; and particularly what here stands under the Term *Respiration*. As for its Elasticity and undulatory Motion, by which Sounds are propagated, with many other of its Properties, consult *'s Gravesand's Elements of Natural Philosophy*, or rather *Wolfii Elementa Matheos universæ*.

Air-Pump, an Engine contrived to exhaust or draw out the Air from Vessels; in which any living Bodies or other Substances may be included,

ded, to shew the Effects thereof. This Engine has brought a deal of Light both into Philosophy and Medicine ; for the first Improvement whereof, so as to make it manageable and commodious, we are indebted to Mr. Boyle.

Al, is an Arabic Particle put to Words to exalt their Value or Significancy ; as *Alcaly*, *Alchymy*, and the like.

Alagueca, a native Stone found in *Balagat*, that immediately stops any violent Hæmorrhage.

Alabastre, a certain soft Species of Marble, so called from the Name of a Town in *Egypt* near which it grew. The Ancients made great use of it for Boxes to contain their precious Ointments or Perfumes. At present it is pretty much neglected, tho' Mr. Boyle made several Experiments upon it, which admirably illustrate and confirm his Doctrine of Fluidity and Firmness. As for what concerns Statues or casting of Moulds with this Stone, its Place is now generally supply'd by Plaister of *Paris*.

Alæ, signifies Wings, and therefore is often used to express such Parts of the Body as bear any Resemblance thereto ; as the Sides of the Nose, the upper Part of the Ear, and the Process of the Bone *Sphænoïdes*.

Alares Musculi. See *Pterygoïdes*.

Albuginea Oculi. See *Adnata Tunica*. *Albugo*, and *Album Oculi* are the same. *Albugo* sometimes also expresses the Pin and Web, which is a white Speck in the horny Tunicle of the Eye that obstructs the Sight.

Albuginea Tunica. See *Tunica Albuginea*.

Alcahest, is an Arabic Word to express a universal Dissolvent, which was pretended to by *Paracelsus* and *Helmont*, the latter whereof (a Man

otherwise of great Veracity, as to the Experiments he delivers, which have since his Time been frequently repeated with Success) calls all the Gods to witness that he was possessed of it. Upon a full Examination into this Matter, and particularly by the diligent Search of the incomparable *Boerhave*, we have Room to suspect that *Helmont* in this case imposed upon himself, or pretended to more than he could really perform ; tho' the thing in it self involves no manner of Contradiction, and appears not absolutely impossible to general Philosophers, however ridiculous or desperate it may be thought by Men not well versed in chymical Matters. See Boyle, as to the Business of Menstruums, and *Boerhave's* Chymistry.

Alchymy, the more complex, difficult and elaborate Part of Chymistry, chiefly concerned in the ripening, purifying and transmuting the baser Metals into the nobler, as Tin or Quicksilver into Silver, or Gold, &c. by means of particular Menstruums, Additions, or the universal Agent, Fire. 'Tis great Pity this Matter has never been fully enquired into ; for to a natural Philosopher there is nothing at all contradictory or whimsical in it. A Man cannot shew his Ignorance in this Part of Philosophy more, than by treating it with an Air of Contempt ; not but he may otherwise be a Man of great Knowledge or Learning ; but *Alchymy* can never be learnt without Practice. Many surprizing things are daily done in this Way by mere Mechanics, or illiterate Persons, who have had the Misfortune to be despised even by the Philosophers, as well as the Men of the World. But whoever ventures to depreciate or speak slightly of Chymistry

or

or Alchymy, should first be sure that they are not entirely ignorant of the Art they censure. The Prevalence of this forward Humour, has hinder'd many Men from publishing what they knew of this admirable Art, which any one may easily satisfy himself is no Chimera. They who are unwilling to be at the Expence of making particular Experiments, may consult the Writings of such candid and ingenious Authors, as Mr. Boyle, M. Homberg, and the present Professor of Chymistry at Leyden.

Alcali, generally taken to mean all such Bodies as will ferment with Acids; but more properly belongs only to such Salts as are made by Incineration, and are sometimes called lixivate or fix'd Salts.

Alcalization, or *Alcalized*, is when any Liquor is impregnated with an alkaline Salt, either to make it a better Dissolvent for some particular Purposes, or to load the Phlegm so as not to rise in Distillation, whereby the spirituous Parts will go over more pure.

Alcohol, a Term used by Chymists, both for a high rectified dephlegmated Spirit of Wine, and for any thing reduced into an impalpable Powder. *Rolfinkius*, *Wedelius*, and some others, have disputed much about its proper Etymology and Signification; but it now is well defin'd and limited by the modern Philosophical Chymists.

Alembick, is the common Instrument of Distillation, which every one must have seen: But instead of the round Copper Head, as usual, 'tis now customary to have a Pewter Neck rise somewhat higher out of it, and turn down again to join the Worm; because this way the inclosed Liquor is not so apt to run over with too great a Fire; and it draws the Liquor finer.

Alexipharmick, is a Term doubtful both in its Etymology and Signification, but it is most strictly applied to such things as prevent the Mischiefs of Bites from poisonous Animals; it is however commonly given to all those things which avail in Fevers, especially those of a malignant kind, by promoting Sweat.

Alexiterial, is of the same Signification, and ordinarily used to Medicines given in Fevers.

Algarot, is a Name given by some Chymists to the *Mercurius Vitæ*.

Alhandal, an Arabic Name for *Colocynthis*.

Aliformes Musculi, are Muscles arising from the Pterygoide Bone, and ending in the Neck of the lower Jaw, and towards the internal Seat of the Head.

Aliformes Processus, are the Prominences of the *Os Cuneiforme*.

Aliment, *ab alendo*, to nourish, includes all that is taken in, as Meat or Drink, from whence Nourishment is expected.

Aliquot Parts, are such Parts of any Number or Quantity as will exactly measure it without any Remainder: As 3 is an Aliquot Part of 12, because being taken 4 times, it will just measure it.

Alkabest, and *Alkali*. See *Alkabest* and *Alkali*.

Allentoies, is the urinary Tunick placed between the Amnion and Chorion, which by the Navel and Urachus (or Passage by which the Urine is conveyed from the Infant in the Womb) receives the Urine that come out of the Bladder. Dr. *Hale* in *Phil. Transact.* N^o 271. has given a very accurate Description of the human Allentoies; and assign'd the Reason why those who believed its Existence, had not before

before fully found it out: and given also an Answer to those who yet deny its Reality. This is likewise called *Farcinialis*, from *ἀλλὰς*, *Farcimen*, a Gut, and *ἔιδος*, *Forma*, Shape; because in many Brutes it is in the Shape of a Gut-Pudding, but in Man, and some other Animals, it is round, and like the thin soft Skin which wrapped the Child in the Womb.

Almonds of the Throat, or *Tonsillæ*, called improperly Almonds of the Ears. They are two round Glands placed on the Sides of the Basis of the Tongue under the common Membrane of the Fauces, with which they are covered; each of them hath a large Oval Sinus, which opens into the *Fauces*, and in it there are a great number of lesser ones, which discharge themselves thro' the great Sinus of a mucous and slippery Matter into the *Fauces*, *Larynx*, and *Oesophagus*, for the moistening and lubricating of those Parts. When the *Oesophagus* Muscle acteth, it compresseth the Almonds; and as they are subject to Inflammation, they frequently are the Occasion of what the common People call a sore Throat.

Aloeticks, are Medicines which chiefly consist of Aloes.

Alopechy, is a falling of the Hair, from what Cause soever; from *ἀλώπηξ*, *Vulpes*, a Fox, whose Urine it is said will occasion Baldness; or because such a Disease is common to that Creature.

Alphus, is the Distemper described by *Celsus* under the Name of *Vitiligo*, wherein the Skin is rough, and looks as if it had Drops of White upon it, not much differing from Morpew.

Alteratives, or *altering Medicines*, are such as have no immediate sensible Operation, but gradually gain upon the Constitution,

by changing the Humours from a State of Distemperature to Health. See *Catharticks*. 'Tis now found a serviceable thing to give such Medicines as are properly cathartic, by way of Alteratives in stubborn chronical Cases. Thus the *Tinctur Sacra*, for Instance, given in the quantity of half a Spoonful for a Dose, has no immediate Effect upon the Intestines, so as to discharge their Contents, but passes on to the farther Stages of Circulation.

Aludels, are subliming Pots used in Chymistry: They are without Bottoms, and fitted into one another, as many as there is Occasion for; at the Bottom of the Furnace there is a Pot that holds the Matter to be sublimed; and at the Top there is a Head to retain the Flowers that rise up after this Manner.

a The Head.

1, 2, 3. Three Aludels.

e The Pot holding the Matter to be sublimed.

f The Fire-Place.



Alvearium, the Cavity of the inward Ear, near the Passage which conveys the Sound. In it that Matter is collected called Ear-Wax.

Alveoli, those Cavities in the Jaws where the Teeth are placed.

Alvus, is understood in the same manner as *Abdomen*; but in a more limited and strict Sense, expresses rather the Condition of the Bowels: as when a Person is laxative, it is called *Alvus liquida*; when costive, *Alvus dura*; and when very costive, *Alvus adstricta*.

Amalgama, is the Mixture of any other Metal with Quicksilver.

Amalgamate, is a Chymical Term, signi-

signifying the mixing of any other Metal with Quicksilver, either for the Conveniency of working it, as in Gilding, or to reduce such Metal into Powder, as Gold, for medicinal Uses.

Amatorii Musculi, Muscles of the Eyes, which give them a Cast side-ways, and assist that particular Look which is by some called O-gling; from *amo*, to love, or *amator*, a Lover. When the *Abductor* and *Humilis* act together, they give this oblique Motion.

Amaurosis, from *ἀμαυρόω*, *obsuro*, to darken, is a Dimness of Sight, whether the Object be near or at a Distance; but not from any visible Defect in the Eye, but from some Distemperature of the inner Parts, occasioning the Representations of Flies, Dust, &c. floating before the Eyes; which Appearances are nothing else than the Parts of the *Retina* hid and compressed by the Blood Vessels being too much stuffed and distended: so that in many of its Parts all Sense is lost, and therefore no Images can be painted upon them, whereby the Eyes, as it generally happens, being continually rolling round, many Parts of Objects falling successively upon them, are obscure. The Cure of this depends upon a removal of the Stagnations in the Extremities of those Arteries which run over the Bottom of the Eye; and whatsoever forces away the Matter obstructing them will also be able to remove the like Obstructions in the Arteries of any other Part of the Brain. For what is generally said concerning the Optick Nerves being obstructed in this Case, is ridiculous; for the Arteries must first be obstructed, because there is nothing in the Nerves, which was not before in the Arteries: and when a Nerve is obstructed it may be taken for incurable.

Amber, a concreted vegetable Juice or Gum, tho' vulgarly referred to the fossil Kingdom. 'Tis reckoned Cardiac and Cephalic.

Ambe, is a superficial jetting out of a Bone. It is also the Name of a Chirurgical Instrument with which they reduce Bones, described by *Scultetus*, *Arm. Chirurg. Par. 1. Tab. 24. Fig. 1, 2.* till proper Remedies for opening them are better known.

Amblyopia, is the same Disease as *Amaurosis*, which see; from *ἀμβλῶς*, *obtusius*, dull, and *ὀπτομαί*, *video*, to see.

Ambrosia, was a founding Title given to Medicines which were pretended of uncommon Efficacy for supporting the Principles of Life, and procuring a kind of Immortality: but such Terms are now to be met with only amongst the Herd of Empiricks.

Amma, is the Name of a Girdle or Truss, used in Ruptures to hinder the Intestines from bearing down too much.

Amnion, or *Amnios*, is the innermost Membrane with which the *Fætus* in the Womb is most immediately covered, and with which the rest of the *Secundines*, the *Chorion*, and *Alantois* are ejected after Birth: it is whiter and thinner than the *Chorion*. It contains also a nutritious Humour, separated by Glands supplied to it for that Purpose, with which the *Fætus* is preserved. It is outwardly clothed with the urinary Membrane, and the *Chorion*, which sometimes stick so close to one another, that they can scarce be separated. It has also its Vessels from the same Origin as the *Chorion*.

Amphiblestriodes, from *ἀμφίβληστρον*, *Rete*, a Net, and *εἶδος*, *Forma*, Shape, is a soft, white and slimy Substance, which is thus named, because if it be thrown into Water, it resembles a Net. It shoots from the

the Centre of the Optic Nerve, and consists of the medullary Substance of it; and expanding itself over the vitreous Humour, is extended as far as the *Ligamentum Ciliare*, or the Ligament of the Eye-lids. If the whole Eye was to be considered as a Flower growing to the Brain by the optick Nerve, this Tunick would be the Flower itself, and the other two, the *Scelerotica* and *Chorooides*, be only in the Nature of a Stem. This seems to be the principal Organ of Sight, and receives the visible Species within the Eye, after the same manner as a white Wall, or a Piece of white Paper in a darkned Room, receives and represents the visible Species which are intromitted thro' a little Hole, so as to form what we now call the *Camera obscura*; by seeing whereof the Nature of Vision may be prettily explained.

Amphismila, is an anatomical Knife, that is edged on both sides, from *ἀμφὶ*, *utrinque*, on both sides, and *σμίλη*, *Cultellus*, a Knife.

Amphora, is a Measure mentioned by antient physical Writers, containing eight Gallons; of Oil 72 Pounds; of Wine 80 Pounds, and of Honey 180 Pounds, as *Castellus* informs us.

Amputation, is the cutting off any Limb, or Part of the Body.

Amulet, a thing hung about the Neck, or any other Part of the Body, in hopes of preventing or curing some particular Diseases. The thing itself is thought to carry an Air of Superstition along with it; and perhaps it has been much abused in that respect: but whoever considers the Nature of the Bodies usually prescribed for this Purpose, the Effects of their Effluvia, the Openness or Porosity of the human Body, with its wonderful Consent of Parts, or their Action upon one

another, will find no reason to disbelieve the possible Efficacy of Amulets; tho' some designing Men have made an ill use of the Notion. That wonderful things are performable by them in Medicine, we learn from a Variety of actual Experiments, deliver'd by credible Authors, and from daily Practice. And if we give up these, all external Applications must be given up along with them, as standing on the very same Foundation. 'Tis pity this Branch of Medicine is not more studied and improved, because all desirable Advantages and Conveniencies may attend the use thereof.

Ana. See *Ā*.

Anabasis, is sometimes used for the Height of a *Continuent*; and *Febris Anabatica*, is the same as *E-pasmasica*, which see.

Anabrosis, is sometimes used to express a Solution of Continuity from the Erosion of sharp Humours.

Anacathartic, is what works upwards, from *ἀνω*, *supra*, upwards, and *καθαίρω*, *purgo*, to purge; and by *Hippocrates* and *Galen* was strictly confin'd to spitting, with whom *Blasius* pritty much agrees in restraining it to Expectoration only; tho' *Blanchard* uses it for all things which work by the Glands of the Head as well as to Vomits and Sternutatories.

Anadosus, is by some used to express an uniform Distribution of the Aliment to the respective Parts of the Body, which is what we mean by a good Digestion.

Analeptics, from *ἀναλαμβάνω*, *refocillo*, to recruit; are such Medicines as cherish the Nerves, and renew Spirits and Strength.

Analogism, is judging of Diseases by similar Appearances, or discovering a thing unknown by its Similitude with something already known: and this way of Reduction was cal-

led by the ancient Writers, *Medicina rationalis sive dogmatica*, in opposition to the *Empirica*, which was conducted by Appearances only without Theory.

Analysis, from ἀναλύω, *dissolvo*, to dissolve; is a Chymical Term, which signifies the Resolution of Bodies into their component Parts, to shew the Nature, Structure, Uses, and Virtues of the various Subjects of the solid, animal and vegetable Kingdoms. It is also a Term sometimes used in Anatomy, to express the Demonstration of the Parts of an human Body when separated by Dissection.

Anaphrodisic: By this Word some Authors express Impotency in venereal Intercourses.

Anaplerotics, from ἀναπληρῶ, *impleo*, to fill; are such Medicines as incarn and fill up Ulcers and Wounds with new Flesh. *Barbet* frequently mentions this Term.

Anarrhoea, is a Species of Fluxion opposite to a Catarrh, when Humours regurgitate upwards, used by *Schneider de Catarrh. lib. 1. cap. 3.* *Hippocrates* expresses the same by *Anarrhopia*; and *Linden* uses it for an Inversion of the Intestines, and a Regurgitation of the Fæces.

Anasarca, from ἀνα, *per*, thro', and σῆξ, *Caro*, Flesh; expresses a sort of Dropsy, where the whole Substance is stuffed with pituitous Humours. See *Leucophlegmatic*.

Anastomosis, from ἀνα, *per*, thro', and στόμα, *Os*, a Mouth. This sometimes expresses such an Aperture of the Mouths of the Vessels as lets out their Contents: but more commonly a Union between the Arteries and Veins, where the former open into the latter, or where an Artery ceases any longer to be so, and begins to be a Vein: For the Veins are only Returns of the

arterial Pipes or Arteries reversed, to bring back the reflux Blood from the Surface.

Anatomy, from ἀνατέμνω, *difsecō*, to divide, or cut open; is that Dissection of Bodies which is necessary to lay open all the Parts to View; And the Learned in this Art are called *Anatomists*.

Anchylops. See *Ægylops*.

Ancon, is the Top of the Elbow, or the backward and greater Shooting-forth of that Bone of the Cubit which is called *Ulna*. And hence

Anconæus Musculus, is a small Muscle which arises from the back Part of the Extremities of the *Humerus*, passes over the Elbow, and is inserted into the lateral and internal Part of the *Ulna*, about three or four Fingers Breadth above the *Olecranium*.

Ancylæ, strictly signifies a Constriction upon the Joints, which renders their Motion difficult; in which Sense *Galen* uses it. *Celsus* expresses by it that Hindrance to Motion which proceeds from a fresh Cicatrix upon the Part: And *Hippocrates* applies it to indurated Joints from any Cause.

Androtomy, is strictly the Dissection of human Bodies, from ἀνὴρ, *Vir*, a Man, and τέμνω, *seco*, to cut.

Aneurisma, from ἀνευρύνω, *dilato*, to dilate; is the Dilation of an Artery which beats continually, easily yielding to the Touch, but filling again, according to *Barbet's* Description, *Part. 2. l. 1. c. 16.* The Cure is difficult; but some Instances thereof are given by *Hildanus, Cent. 3. Ob. 42.* as also by *Bartholine* in an Epistle to *Van Horne*: But *Ruyfch* gives the most extraordinary Case, in *Cent. Obs. Anat. Chir. Obs. 4.*

Angelicus Pulvis, is a Distinction given by *Schroder* to the *Mercurius Vitæ*, and which *Libavius* hath thought fit to vindicate.

Angi:

Angi : *Fallopian*, de *Morbo Gallico*, thus terms those Tumours in the Groin, which the present Practice commonly distinguishes by the Name of *Buboes*.

Angina, from ἀγγειν, *strangulare*, to strangle; is such an Inflammation of the Jaws or Throat, as renders swallowing and breathing very difficult and troublesom. *Hippocrates*, defines this a Tumour either internal or external, that interrupts Respiration; and *Galen* a Streightness of the Jaws that renders breathing and swallowing difficult, proceeding from Inflammation: but the Moderns have given distinct Names to the different kinds of this Disorder; as *Synanche*, when the inner Parts are inflamed, or *Cynanche*, expressing an Inflammation of the internal Muscles of the Throat, that thrusts out the Tongue, and makes the Patient pant like a Dog out of Breadth; and a *Parasynanche*, when the external Muscles are so tumified as to streighten the Passages within. But it hath been justly observed, that too nice a Distinction of Names often darkens the true Knowledge of things.

Angle of Incidence, is that Angle made by the Line of Direction of any Body, at the Point of Contact, with the Body whereto it is directed; and is measured from a Perpendicular to the Plain, or Surface, at the Point where the two Bodies are supposed to meet. In like Manner,

Angle of Reflection, is that Angle made by the Line of Direction of the reflected Body at the Point of Contact, where it flies off.

Anglicus Sudor, is now commonly used to express an epidemical colliquative Fever, since it was so in England in Henry VIIIth's Reign, and elegantly described by the Lord Bacon, in his History of those Times.

Sennertus largely treats of this Subject, *De Febr. l. 4. cap. 15*. But there are many Conjectures about its Causes that are merely ridiculous.

Angor, is defined a shrinking inwards of the native Heat of the Body, or its retiring to the Center, upon which follows a Pain and Palpitation of the Heart, attended with Sadness. 'Tis esteemed a very bad Symptom when it happens in the Beginning of acute Fevers.

Anhelus, signifies Shortness of Breath, as in an *Asthma*.

Anima Hepatis, is Salt of Steel, esteemed as the Soul of the Liver, which this Name imports, for its Prevalency against its Distempers.

Animal Faculty. See *Faculty*.

Animal Secretion, is that Separation of Juices from one another which is performed by the Glands; and tho' it is of the greatest Importance to be well understood of any one Branch of medicinal Knowledge, yet it has not been talked of by any in an intelligible Manner, until some Authors, by the Assistance of Geometrical Reasoning, have demonstrated the Laws of Circulation in an Animal Machine; the Summary of which may be conceived under these three Heads.

1. *The different Diameter of the Orifice of the Secretory Ducts*: For all Particles whose Diameters are lesser than those of the Ducts, will be excluded; insomuch that any Matter may be evacuated by any of the Glands, provided the Diameters of its Particles be made less than those of the Secretory Ducts, either by a Comminution of the Matter to be separated, or by an Enlargement of the separating Passage. 2. *The different Angle which the Secretory Duct makes with the Trunk of the Artery*:

Artery: For all Fluids press the sides of the containing Vessels in a Direction perpendicular to its sides; which is evident in the Pulsation of the Arteries, since 'tis to that Pressure that the Pulsation is owing. It is likewise evident that the Blood is urged forward by the force of the Heart: so that the Motion of Secretion is compounded of both these Motions. Now the lateral Pressure is greater when the direct Velocity is so too: but yet not in proportion to such Velocity: for the lateral Pressure is considerable, even when the Fluid is at rest; being then in proportion to the specific Gravity of the Fluid. And in a Fluid like the Blood in the Arteries, which is thrown in a right Direction, or a Direction parallel to the Axis of the Vessel, the lateral Pressure will be in a compound proportion to both; From whence it will follow, that if two Particles of equal Diameters, but unequal specific Gravities, do arrive with the same Velocity at an Orifice capable of admitting them, yet they will not both enter it, and pass, because their Motion of Direction will be different. So that the Diversity of the Angles which the Ducts make with the Trunk of the Artery, is altogether necessary to account for all the possible Diversities of secreted Fluids, even supposing their Diameters and Figures to be the same. 3. *The different Velocities with which the Blood arrives at the Orifices of the Secretory Duct.* For since the Secretions are made in Form of a Fluid, no other possible Reason can be assigned, why Animals have a soft loose Texture and Union of the solid Parts; and why one Part of the Body is of an easily separated Texture, and another of a firmer, but this different Velocity of the Blood at the Orifices of the

secretory Duct; whereby the secreted Particles for Nourishment and Accretion are drove or impacted into the *Vacuola* that receive them with a greater or less Force: for it is difficult to imagine that such a Diversity in Texture can altogether proceed from the different Solidities and Contacts of the constituent Parts.

Dr. *Wainwright* has prefix'd some Propositions upon this Head, interspersed with some properly Hydrostatical, to his Book of *Non-Naturals*, which may be worth Recital here.

Prop. 1. A Fluid must have its compounding Parts small, spherical, or approaching thereunto; smooth, or such as can easily slide over one another; and if homogeneous, the Parts must be of equal Density.

Prop. 2. Fluids press *undequaque*, and the Direction of their Pressure is in every Point perpendicular to the sides of the containing Vessel; and therefore Secretion is perform'd by a Composition of two Motions, direct and transverse.

Prop. 3. Of an heterogeneous Fluid at rest in the Body, and equally pressed, the most liquid Part is forced out first.

Prop. 4. An heterogeneous Fluid, such as the Blood, whose compounding Parts are of different Densities, upon its Stagnation will precipitate its heavy, and elevate its light Parts, and they all in time will take their Places according to their specific Gravities; and where the Fluid does not stagnate, the Separation of the heavy Parts from the light will be in Proportion to the Slowness of the Motion of the Fluid.

Prop. 5. The red fibrous Part of the Blood upon its Stagnation, retires into the Center, and forces the Serum to the Outside of the Vessel.

Corol.

Corol. The slower the Blood's Motion is, the more Serum is separated.

Prop. 6. Fluids resist the Motion of such Bodies most, whose Surfaces are greatest, in Proportion to their Solidities; or, in other Words, whose specific Gravities are least.

Prop. 7. The most viscid Parts of Serum are lightest, *viz.* such as are separated in the Glands of the Nose, Mouth, Palate, Windpipe, Stomach, Guts, &c. because these swim in Water, which is lighter than Serum.

Corollary to the two last *Propositions*. The most viscid Part of the Serum of the Blood is the least susceptible of Motion, or it is mov'd with the greatest Difficulty thro' the Arteries.

Prop. 8. A Fluid forced thro' a concave Cylinder, moves with a greater Celerity at the Axis, than at the Sides: and much more so thro' a concave Cone.

Prop. 9. The most light Parts being the least susceptible of Motion, will be forced to the Sides of the Arteries where there is the least Motion; so that where there is the least Motion, there the lightest Part of the Serum will be separated, (by the 7th *Proposition*) that being the most viscid.

Corol. 1. The Viscidity of the separated Fluid will be reciprocally as the Celerity of the Blood at the Orifice of the separating Canal.

Corol. 2. The Velocity of the Blood at the Orifice of the separating Canal, being as the Number of Plications in the complicated Artery, the Viscidity of the separated Matter will be as the Number of Plications in the complicated Artery.

Prop. 10. When the Motion of the Blood is too slow, the most ferrous Part of it is thrown upon those

Arteries, which are the smallest, most complicated, or at the greatest Distance from the Heart: For, the Motion of the Blood being too slow, more of the red Part of it will move along the Axis of the Artery than before, (by *Proposition* 5.) therefore the red Part will move with much greater Celerity than the Serum, (by the 8th and 9th *Propositions*) and consequently thro' such Arteries where there is the least Resistance; that is, thro' the widest, the least complicated, and those nearest the Heart: For which Reason, the Serum will be forced upon such Arteries as are the smallest, most complicated, or at greatest Distances from the Heart.

Prop. 11. A Gland is a complicated Artery, which sends excretory Vessels out of its Sides; after which it degenerates into a Vein.

Prop. 12. The Intestines are a Gland, and the Lacteals are the secretory Vessels.

Prop. 13. The Orifices of the excretory Vessels of every Gland are circular, since all the Vessels in which the Fluids of the Body move are either concave Cylinders, or Cones; for the Pressure of a Fluid being always perpendicular to the Sides of the containing Vessel, and being at equal Distances from the Center, the Sides must be every where equally distended, *viz.* a Section perpendicular to the Axis of the Vessel, must be a Circle, and consequently the Vessel be either Cylindrical or Conical. This is fully demonstrated by Dr. Pitcarne.

Corol. 1. The Orifices of the excretory Vessels of different Glands differing only in their Magnitude, the Fluids separated in differing Glands, will differ only in Degrees of Cohesion and Fluidity.

Corol. 2. Any peccant Matter in the Blood, may be evacuated by any of the Glands, provided their Office be but sufficiently enlarged.

Corol. 3. The increasing of one Evacuation will lessen another, and *vice versâ*.

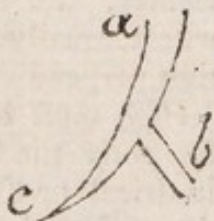
Prop. 14. All the conglomerate Glands have Coats made of muscular Fibres, with which they force out their Contents by Contraction; and the more in Quantity, or the more forcible any secerned Matter is to be expelled, the stronger are the muscular Fibres.

Prop. 15. The relaxed Coat of any Gland increases the Viscidity of the secerned Matter, and *vice versâ*: for the secerned Matter will grow much more viscid by staying longer in the Gland; and the thin Part being evaporated by the Heat of the Body, the rest will be more viscid.

Corol. Opiates, Drunkenness, and whatsoever makes an universal Relaxation, increase the Viscidity of the Matter separated in all the conglomerated Glands.

Prop. 16. Such Glands whose compounding Arteries are most complicated, secern the most viscid Matter from the Blood.

Demonstration. Let there be a branched Canal of the annexed Figure, and let the Extremity of one of the Branches *c* be shut up, and the other Branch *b* be open; then by an Engine force *c* thro' the Trunk *a* any kind of viscid Liquor, such as the Blood, or whose compounding Parts are some more, and some less fluxile, and it will equally run into both the Branches till the Branch *c* be full, but after that, what should move thro' *c*, must pass thro' *b*, so that the whole



Liquor that passes thro' the Trunk *a*, must likewise in the same time pass thro' the Branch *b*; now *b* being much streighter than *a*, the Liquor must pass with greater Celerity thro' *b* than *a*: So that such Parts of the Liquor as are most easily moved, will first pass the Branch *b*; and the Parts that are less susceptible of Motion, or in other Words, those which are most viscid, will be soliciting their Entrance into the Branch *c*; but this viscid Matter cannot enter without forcing some of the most moveable or fluid Part of what is contained in *c* into *b*, so that *c* will constantly fill with viscid Matter till it can hold no more. If therefore the Extremity of the Branch of any Artery be totally obstructed, it is hereby disposed to fill with the most viscid Matter the Blood can supply, and that for this Reason, *viz.* because the progressive Motion of the Blood thro' that Branch must cease; and in such Branches of any Artery where the Motion of the Blood is the most retarded, thro' that Branch will the most viscid Part of the Blood pass, as the most fluid will in those Branches where there is the least Resistance to the Motion of the Blood. Now in every complicated Artery, the Resistance being greater than in a streight one, the Motion of the Blood will be slower, and that in Proportion to the Number of Plications in the complicated Artery; therefore in the Arteries which are most complicated, the Motion of the Blood in them being the slowest, its Viscidity will be the greatest; and therefore such Glands whose compounding Arteries are most complicated, secern the most viscid Matter from the Blood.

Q. E. D.

Prop. 17. The Quantity of fluid Matter separated in any Gland, is in

in compound Proportion of the Quantity of Blood, its Celerity at the Orifices of the excretory Vessels, the Wideness of the Orifices of the Vessels directly, and the Viscidity of the Blood reciprocally.

Demonstration. The Celerity of the Blood's Motion, the Wideness of the Orifices, and the Viscidity of the Blood being given, the Quantity separated must be as the Quantity of Blood directly; for a greater Quantity separates more, and a less Quantity separates less. The Quantity of Blood, its Viscidity, and the Wideness of the Orifices being given, the Quantity separated will be directly as the Celerity; for a greater Celerity gives a greater Quantity, and a less Celerity a less. The Quantity of Blood, its Celerity and Viscidity being given, the Quantity separated will be directly as the Wideness of the Orifice; for the wider the Orifices, the more will be separated, and the streighter the less. The Quantity and Celerity of the Blood, and the Wideness of the Orifice being given, the Quantity separated will be reciprocally as the Viscidity of the Blood; for the greater the Viscidity, the less will be separated, and the less the Viscidity, the more: therefore none of these being given, the Quantity separated will be as the Quantity of Blood. *Q. E. D.*

Prop. 18. An increased Quantity of Blood increases the fluid Secretions in a Proportion greater than the viscid

Demonstration. The Quantity of Blood being increased, the Diameter of all the Vessels will be enlarged, but in different Proportions; for the same Force, in an increased Quantity of Blood applied to the less complicated Arteries, will distend them, or enlarge their Diameters

more than it will the more complicated, because the Resistance in these is greater than in those, and that in Proportion to the Number of Plications one Artery hath more than another. Now the Quantity of separated Matter being, *ceteris paribus*, as the Wideness of the separating Canal, (by the last *Proposition*) the Quantity separated in the less complicated Artery, whose Diameter is more enlarged in this Case, will be greater than what is separated in a more complicated Artery; and seeing such Glands whose compounding Arteries are most complicated, secrete the most viscid Matter from the Blood, and the least complicated the most fluid, (by the 16th *Proposition*) therefore an increased Quantity of Blood, by increasing the Diameter of the less complicated Arteries more than of the more complicated, increases the fluid Secretions more than the viscid. *Q. E. D.*

Prop. 19. A decreased Quantity of Blood lessens the fluid Secretions more than the viscid. This needs no Proof, being the Reverse of the last.

Prop. 20. An increased Celerity of the Blood's Motion increases the fluid Secretions more than the viscid: and *vice versâ*, a decreased Celerity lessens the fluid Secretions more than the viscid.

Demonstration. The Celerity of the Blood's Motion being greater, the *Impetus* by which the Arteries are distended, or their Diameters enlarged, will be greater, and so exert its Force more upon the less complicated Arteries, than upon such as are more complicated, and consequently promote the fluid more than the viscid Secretions; and because an increased Celerity will, by breaking the Blood into small Parts,

render

render it more fluxile, and thereby supply a greater Quantity of such Particles as will pass the Glands, whose Diameters are the least, therefore upon this Account also an increased Celerity of the Blood's Motion will increase the fluid Secretions more than the viscid. *Q. E. D.*

Prop. 21. An universal Enlargement of the Orifices of all the Glands increases the fluid Secretions more than the viscid; and *vice versâ*, an universal Contraction lessens the fluid Secretions more than the viscid.

Demonstration. The Diameters of the smallest Orifices being enlarged, are big enough to seern the viscid as well as the fluid Matter; and because the Matter seerned in different Glands, differ only in Degree of Cohesion and Fluidity, (by the first *Corol.* of the 13th *Proposition*) therefore the Orifices of the small Glands being enlarged, the more viscid Matter that used to be separated in other Glands, will be separated in these; and therefore less will be separated in those Glands that are fitted for viscid Secretions; and more in those fitted for the fluid. Therefore an universal Enlargement of the Orifices of all the Glands increases the fluid Secretions more than the viscid. *Q. E. D.*

Prop. 22. An increased Viscidity of the Blood decreases the fluid Secretions more than the viscid; and, *vice versâ*, an encreased Fluidity increaseth the fluid Secretions more than the viscid.

Demonstration. A decreased Celerity of the Blood's Motion lessens the fluid Secretions more than the viscid, (by the 20th *Proposition*) but the Celerity decreases, as the Resistance increaseth: Now the Resistance is greatest when the Blood is most fluid, because it passeth with

greatest Difficulty thro' the capillary Arteries; therefore an increased Viscidity, by lessening the Celerity, decreases the fluid Secretions more than the viscid. *Q. E. D.* For a further Account of this Affair, see *Gland, Blood, Attraction, &c.*

Anima, as commonly used for the human Soul, hath no Concern in a Work of this kind; but it may be known that Physicians sometimes used it for the Principle of Life to the Body, as the Blood, which is what *Willis* calls *Anima Brutalis*, and is the same as the *Purpurea Anima* in *Virgil*. The Chymists also apply it to the Parts of some Simples, in which their medicinal Efficacies reside; and thus we have an *Anima Rhabarbari*, &c. in *Wedelius* and such Writers. Some Medicines also they dignify by this Name for their peculiar Suitableness to particular Parts, as the Salt of Steel is called *Anima Hepatis*, and the like.

Animal Functions, are defined by the learned *Boerhave*, those which when performed, the human Mind conceives such Ideas from them as are annexed to the respective corporeal Actions; or such wherein the Will exerts itself to produce them, or is moved by them when produced: Thus the Touch, Taste, Smell, Sight, Hearing, Perception, the Imagination, Memory, Judgment, Reasoning, Passions of the Mind, and voluntary Motions, are animal Functions.

Animal Spirits. See *Nervous Fluid*.

Animalcule, is a Diminutive of *Animal*, to express such small living Creatures as cannot be discerned by the naked Eye; and which are to be discovered in many Fluids by the Assistance of proper Glasses. See *Fætus*.

Animation, a Term used to express the first sure Signs of Life in an Animal; 'tis also used by the Hermetic Philosophers, to express a certain State of Perfection whereto a Body is brought by some particular Process; at which time it becomes capable of effecting some extraordinary Change, or of producing or affording some uncommon Phenomenon.

Animus, distinguished from *Anima*, as the former expresses the Faculty of Reasoning, and the latter the Being in which that Faculty resides.

Anisclaptor. See *Latissimus Dorfi*.

Annihilation, is the Reduction of Matter into nothing. See *Corruption*.

Annuentes Musculi, are a Pair of transverse Muscles at the Root of the *Vertebrae* of the Back, called by Mr. Cowper, *Recti interni minores*, because they lie under the *Recti majores*; and thus named, because they help to nod the Head directly forward.

Annularis. See *Larynx*.

Annular Ligament. See *Wrist*, and *Metacarpus*.

Annular Process, is a Protuberance made by the meeting of the Processes of the *Medulla Oblongata*, under the Sides thereof.

Annulus: This is variously applied by physical Writers; *Quercetan* in his *Med. Hermet.* describes some *Annuli purgatorii*; *Libavius* treats of *Annuli* as Charms against Cholicks and Epilepsies; *Scultetus* gives this Appellation to instruments contrived to hold open the Eye or like Parts in some Operations; and *Zecchius de Morbo Gallico* directs an *Annulus aureus* to be held in the Mouth to draw away the Quicksilver that hath been used in venereal Cures. The *Cricoides* is

also by some called *Annuliformis Cartilago*.

Ano, ἀνω, is used for upwards, in opposition to πω κάτω, downwards, and is often joined by *Hippocrates* to κοιμία, *Venter*, to signify the Mouth of the Stomach, or Oesophagus. It is also applied to things which work upwards, as Vomits.

Anodyne, from the privative Particle α, and ὠδύνω, *doleo*, to be in Pain; are Medicines that assuage Pain. Writers distinguish them into *Paragorick*, which are the milder kind, and no ways extinguish the vital Function; and the *Narcotick*, which stupify, and sometimes occasion a total Cessation of vital Action.

Anomalous, from the privative Particle α, and νόμος, *Lex*, a Law; signifies any thing that is irregular, and is variously applied. Some use it for the Accession of a Fever, which is attended with a great Uncertainty of Symptoms. *Galen* applies it to the Disorders of menstrual Obstructions; and *Marcus Aurelius Severinus*, who wrote a whole *Treatise of Abscesses*, to Tumours either unequal in Shape, or containing Matter of different Kinds and Consistencies.

Anomphalos, signifies one that wants a Navel, and is applicable only to our first Parents as they were created without want of Nourishment that way: for which Reason, as *Paulus Ammianus* says, they are so distinguished in Paintings and Drawings.

Anonymus, signifies without a Name; for which Reason this hath been at first given to Parts newly taken notice of, as once to the second Cartilage in the Throat, now called *Cricoides*, or *Cartilago annuliformis*.

Anorexy, from the privative Particle α and $\sigma\rho\epsilon\chi\theta\acute{\epsilon}\omega$, *cupio*, to desire; is an Inappetency, or loathing of Food.

Antacida: *Dolæus* in his *Encyclopediæ* thus calls all those things which destroy Acidity.

Antalgicus, is a Medicine which assuages Pain; whence *Jonquetus* gives it as a Title to an Emulsion of that Intention, as *Lentilius* observes in *Miscel. Med. Pract.* Page 514.

Antagonists, from $\alpha\nu\tau\acute{\iota}$, *contra*, against, and $\alpha\gamma\omega\acute{\iota}\zeta\omega$, *oppono*, to oppose; are Terms for opposite Muscles, as an *abducent*, and an *adducent* Muscles of any particular Limb.

Antaphrodisiack, is a Term given to Medicines which extinguish venereal Desires, particularly by *Wedelius*; and some use it in the same sense as *Anti-venereal*.

Antecedent Signs, from *ante* before, and *cedo* to go, are such Symptoms of Disorder as appear before a Distemper is formed, so as to be reduced to any particular Class, or proper Denomination: A Term much used of late by *Bellini de Febribus*.

Antemetick, is a Name given by *Willis* to Medicines which stay Vomittings, *Pharm. rat. Part. 1. Sect. 2. Cap. 3.*

Antepileptick, given to Medicines against Convulsions; from the Etymological Import of the Word.

Anthelix, is the external Part of the Ear opposite to the *Helix*. See Ear.

Anthelminticks, from $\alpha\nu\tau\acute{\iota}$ against, and $\epsilon\lambda\mu\iota\nu\varsigma$, *Vermis*, a Worm; are Medicines that are good to destroy Worms.

Anthology, from $\alpha\nu\theta\omicron\varsigma$, *Flos*, a Flower, and $\lambda\omicron\gamma\omicron$, *Sermo*, a Discourse; signifies a Discourse or Treatise of Flowers.

Anthos, is Greek for Flower, but by way of Excellency, it is appropriated to *Rosemary*, so as to express only *Flowers of Rosemary*.

Anthrax, $\alpha\nu\theta\rho\alpha\varsigma$, which strictly signifies a live Coal, and figuratively a Scab or Blotch that is made by a corrosive Humour, that as it were burns the Skin, and occasions sharp pricking Pains. For which Reason some, as *Serenus*, call such an Eruption *Carbo*, and others *Ignis Persicus*.

Anthropology, from $\alpha\nu\theta\rho\omega\pi\omicron\varsigma$, *Homo*, a Man, and $\lambda\acute{\epsilon}\gamma\omega$, *dico*, to speak; is any Discourse or Treatise of which Man is the Subject, as,

Anthropometria, is considering it anatomically, and *Anthroposophia* the Knowledge of the Nature of Man.

Anti: There are various Terms compounded with this, as *Anti-hystericks*, *Anti-asthmaticks*, *Anti-venereals*, and the like; which signify Medicines against hysterical Affections, against an Asthma, or against the venereal Disease, from its natural signification, against.

Anticardium, from $\alpha\nu\tau\acute{\iota}$, *contra*, against, and $\kappa\alpha\rho\delta\acute{\iota}\alpha$, *Cor*, a Heart, is that Part of the Breast just against the Heart, commonly called the Pit of the Stomach, or *Scrobiculus Cordis*.

Antidote, from $\alpha\nu\tau\acute{\iota}$, *contra*, against, and $\delta\acute{\iota}\delta\omega\mu\iota$, *do*, to give; is a Medicine that is given to expel the Mischiefs of another, as of Poison.

Antihæcticum, is the Name of a Medicine invented by *Potenus*, called also *Antimonium diaphoreticum Foviale*. See its Preparation in the *Dispensatory*.

Antipathi, from $\alpha\nu\tau\acute{\iota}$, *contra*, against, and $\pi\acute{\alpha}\theta\omicron$, *Affectus*, Affection, expresses any opposite Properties or Affections in Matter. But it

is a Term that hath been much abused by Sir Kenelm Digby, and some other hypothetical Reasoners.

Antiperistasis, from ἀντί, *contra*, against, and περίσχησις, *circumsto*; signifies an Opposition from all around. The Philosophers who first coined this Term, expressed by it a certain Invigoration of internal Warmth by the Repulsion of external Cold, which they called also Concentration of the internal Heat, from driving it to the Center.

Antitenar, from ἀντί, against, and δέναν, *Vola*, the Palm; is a Muscle that draws the Thumb to the Fingers; it riseth from the Bone of the *Metacarpus* that sustains the Fore-finger, and is inserted into the first Bone of the Thumb. It is also a Muscle of the great Toe, arising from the inferior Part of the third *Os Cuneiforme*, and passing obliquely, is inserted into the Inside of the *Ossa Sessamoidea*.

Antrum buccinosum: so Bartholine calls the *Cochlea* of the Ear.

Antitragus. See *Ear*.

Anus, is the Extremity of the *Rectum*. A small Hole in the third Ventricle of the Brain, which leads into the fourth Ventricle of the *Cerebellum*, is also so called.

Aorta, is the great Artery which rises immediately out of the left Ventricle of the Heart, and has three Valves of the same Use and Figure as the semilunar Valves in the Pulmonary Artery. See *Heart*.

Apella, the same as λειπόδερμος amongst the *Greeks*, is when the Nut of the Penis lies bare, either by Means of a Distemperature, when it is called a *Paraphimosis*, or by Circumcision; for which last Reason it is made by some a common Name for a Jew, or any circumcised Person.

Apepsy, from the privative Parti-

cle α and πείω, *coquo*, to boil, or concoct, is a Loss of natural Concoction; and is by *Hippocrates* used sometimes for unripe Tumours.

Aperients, from *aperio*, to open; are opening Medicines. See *Detergents*. And *Apert* is sometimes used to Tumours which are broke, as we read of *Aperta Strumæ* in *Scribonius Largus*.

Apetalus, from the privative Particle α, and πέταλον, *Folium*, a Leaf. See *Petala*.

Aphilanthropia: so *Wedelius* calls the first Approaches of Melancholy, when Persons begin to dislike Company and Conversation.

Aphony, from the privative Particle α, and φωνή, *Vox*, a Voice, is a Loss of Speech.

Aphorism, is a short determinative Sentence, such as those of *Hippocrates* or *Sanctorius*. The *Aphorisms* of the most learned *Boerhaave* are every Way admirable, and contain in a slender Volume all that is at present known of Distempers. 'Tis great Pity the concise Accuracy wherewith they are wrote, should prevent their being generally read.

Aphrodisia, expresses the venereal Intercourses of both Sexes, and therefore *Aphrodisiacum* is applied to a Medicine that excites Desires thereunto.

Apices, in *Botany*, are those little Knobs that grow on the Tops of the *Stamina* in the Middle of a Flower. They are commonly of a dark purplish Colour. By the Microscope they have been discovered to be, as it were, a sort of *Capsulæ seminales*, or Seed-Vessels, containing in them small globular, and often oval Particles, of various Colours, and exquisitely formed. In the *Herb Robert*, these *Apices* are of a deep purple Colour: They are exactly spherical, and afford a very pleasant Pro-

Prospect in the Glass. What the Use of these are, is not yet entirely agreed: Some have guessed them to be a kind of Male Sperm, which falling down into the Flower, fecundates and ripens the Seed.

Aphthæ, are certain Specks or Pimples about the internal Parts of the Mouth; as also about the Ventricle, and Guts, which Infants are more particularly obnoxious to: and both *Hippocrates* and *Galen* have taken Notice of them in the Distempers of Children, chiefly which suck, as arising from the Acidity which unconcocted Milk occasions.

Apocatharsis, is used for purging upwards and downwards, either with or without the help of Medicines.

Apocylism, was antiently used for the inspissated Juice of Vegetables, the same as *Rob*, a Form now undeservedly in Disuse.

Apoplepsis, is frequently used by *Hippocrates* and other of the Antients for a Retention of Urine, or any other matter to be evacuated, that occasions a *Plethora*.

Apolusis, signifies either the Exclusion of any thing, as of the Birth, the Fæces, or the like; or a Relaxation, by which any Part or the Whole is debilitated.

Aponeurosis, from *ἀπὸ*, *de*, from, and *νεῦρον*, *Nervus*, a Nerve; is the End, Tail, or String of a Muscle, commonly called a Tendon.

Apophlegmatizonta, Remedies are so called which cause an Evacuation of serous or mucous Humour by the Nostrils, as particular Kinds of Sternutatories, &c.

Apophysis, from *ἀποφύω*, *produco*, to produce; a Name first given by *Galen* to the prominent Parts of some Bones, the same as we mean by *Process*; and it differs from an *Epiphysis*, as that is a Continuance of the Bone itself, whereas the lat-

ter is somewhat adhering to a Bone, and of which it is not properly a Part, as *Bartholine*, and Anatomists since him distinguish them. *Hippocrates* applies this Term to some fleshy Excrescencies.

Apoplexy, from *ἀποπλήττω*, *percutio*, to strike; because Persons are as it were suddenly struck with Death. It is a sudden Deprivation of all internal and external Sensation, and of all Motion, unless of the Heart and Thorax: For the understanding of which, it is necessary to premise, that if by any means a Nerve is tied and compressed, the Part to which that Nerve is directed loses its Sense and Motion; that if any Nerve is cut, there distils out a Liquor; that Motion is performed by reason the nervous Fluid is impelled by the Force of the arterial Blood thro' the Nerves into the muscular Fibres; and that Sensation is from hence, that Objects compress or strike upon the Extremities of the Nerves by their Motion, and drive back the nervous Fluid towards the Brain. An Apoplexy therefore is produced by any Cause which hinders such Undulation of all the Nerves, unless those which are destined to move the Heart and Breast. But the Means by which the Motions of the Heart and Thorax remain, or of the Pulse and Respiration, when the other Parts are deprived of their Motion, is because in every Motion which is performed by Muscles having Antagonists, a Quantity of nervous Fluid must be derived into the contracting Muscle, not only equal to that which is derived at the same time into the opposite Muscle, but also greater; for otherwise the Part to be moved would remain in an *Equilibrium*, without Motion: And therefore more of the nervous Fluid must pass into

into a Muscle that has an Antagonist, than that which has none. But the Heart is a Muscle that has no Antagonist, and consequently it requires a less Quantity of nervous Fluid to continue its Motion, than other Muscles destined for the Motion of the Limbs; therefore if the Cause hindering the Undulations of all the Nerves is such that no Juice could flow thro' the Nerves, the Heart itself would cease from Motion, and Death ensue. But if the Cause be not so powerful as to take away all the Motion of the Fluid thro' the Nerves, but so far only resists their Dilatation, that but a very little Fluid can pass thro' them not sufficient to inflate those Muscles which have Antagonists; then those Muscles only will be contracted which require the last Quantity of Spirits, and such is the Heart. The Impediment to such due Undulation is generally a Repletion, and indicates Evacuation, joined with *Stimuli*. *Bartholine* calls the internal jugular Veins *Apoplecticae*, from an Opinion of their being particularly concerned in this Distemper.

Aporrhoes, from ἀπορρέω, *defluo*, to flow from; signifies sulphurous Vapours and Exhalations from the Earth, and subterraneous Bodies, as also any kind of infectious Steams.

Apostasis, is used by some Writers in the same Sense as *Abscess*; and *Hippocrates* used it for such Fractures of the Bones, where some Parts break off.

Apostrophe, is used by *Paulus Aegineta*, *Linden*, and others, for a loathing of Food.

Aposteme. See *Imposthume*.

Apothecary, from ἀπό, *cum*, with, and τίθημι, *pono*, to put; is so called from his Business, being to compound things together for Medicine.

Apozem, from ἀποζέω, *deserveo*, to make hot; is a Decoction of Herbs, Roots, &c. together, for any medicinal Use.

Apparatus, is used variously, as a Disposition of Instruments and all other things into a Readiness by a Surgeon for any Operation, often mentioned by *Scultetus* in this Sense: and in Mechanicks, or experimental Philosophy, it signifies the Fitness of the Instruments to perform certain things with. But in general it stands for all that previous Knowledge of Materials, or other things requisite to the Study or Practice of any Art or Science.

Appetite, in a philosophical Sense, is any natural Inclination, but more strictly and physically, a craving of Food to satisfy Hunger and Thirst. The *Appetitus caninus*, called also *Pica*, and *Phagedæna*, by *Galen*; and by *Deckers*, in his Notes upon *Berbette* χυροεξία, is a distempered or insatiable craving for Food, different from the *Bulimia*, which see.

Apposition, is the Addition and Union of new Matter, as of the Food in Nourishment.

Aptitude, is a Fitness in any thing to the Purposes it is designed for, or for certain particular Occasions beyond any others.

Apyrexia, from the privative Particle α, and πῦρ, *Ignis*, Fire or Heat, or πυρίασσω, *febricito*, to be feverish; is the Intermision of feverish Heat.

Aqueduct: the bony Passage of the Drum, which reaches from the Ear to the Palate is so called. But for the Vessels so called, see *Lymphaducts*.

Aqueous Humour. See *Humours of the Eye*.

Aquila alba, a Name given by the Chymists to *Mercurius Dulcis*.

Ara-

Araneus, is sometimes used by *Galen*, to express a low Pulse : and by *Hippocrates*, a flaky Urine, having Films like Cobwebs in it.

Aræometer, an Instrument contriv'd to determine the specifick Gravities of Liquors.

Arbor Dianæ, called also *Arbor Philosophorum* ; a Name given to a particular Chrystallization from the Solution of Mercury or Silver in Acids : And *Arbor Hermetis* is used in a Process for the Revivification of Mercury. And *Helmont* gives the Name of *Arbor Vitæ* to a Medicine, by the Help of which he pretended Life would again shoot out like a Tree.

Arboreus, from *Arbor*, a Tree, is a Term in Botany, to distinguish such *Fungus*'s, or Mosses as grow upon Trees, from those that grow on the Ground.

Arcanum, signifies a Secret ; and therefore 'tis a Term ridiculously apply'd by Quacks and Impostors in Medicine, who generally conceal their Ignorance and Fraud under a Pretence of Secrecy.

Archæus, from ἀρχαῖος, signifying ancient, as applied in Medicine, denotes the antient Practice, concerning which in his Time *Hippocrates* wrote a whole Treatise : And sometimes it is used for that natural State which preceded any Disease. This by some likewise is used for

Archeus, a Term much used by *Helmont* to express an internal efficient Cause of all things ; which seems no other than the *Anima Mundi* of his Predecessors : and as he applies it to particular animated Beings, it differs not from the *Δύναμις*, or *Vis Plastica* of the old Philosophers. But these are such abstract Terms, and convey such confused Notions, that they rather serve the Purpose of Ignorance and

Imposture, than any useful and generous Knowledge.

Archiator, from ἀρχή, *Principium*, Chief, and ἰατρός, *Medicus*, a Physician ; signifies chief Physician, such as those to Princes, according to the Explanation of *Hieron. Mercurialis* : but *Hoffman* applies it rather to the Head or President of a College or Community of Physicians. Some likewise use it in the same Sense as *Archæus*.

Archidoxis, is a Title given to a Book wrote by *Paracelsus* of Chymistry, and which *Libavius in Exam. Phil. Novæ*, says, looks more like Magick than Knowledge : but those who understand it, tell us it contains some very remarkable Secrets ; and is highly prized by the Adept.

Archnoides, *Arachnoides*, and *Aranea Tunica*. See *Amphiblestroides*.

Ardent Spirits ; those are so called as are distilled from fermented Vegetables, and will take Fire, and burn away.

Ardor Ventriculi, is a Heat at Stomach, and expresses the Heartburn, the same as *Cardialgia*, which see.

Ardor Urinæ, the same as *Dysury*, which see.

Area, signifies the internal Capacity of any given Boundary or Limits, of what Figure or Shape soever. It is a Term also used by Miners for a certain Compass of Ore allotted for digging ; and some physical Writers use it for a Species of the *Alopecia*, which see.

Areola Pappillaris. Some call that Circle about the Nipple so.

Aregon, importing Assistance, a Name given to an officinal Unguent, which is described in many old Dispensatories ; but the present Practice hath rejected it.

Argentum

Argentum Vivum, the same as *Quicksilver*; which see.

Argill, is a white Earth, like Chalk, but more brittle; little used in Physick.

Arista, in Botany; is a long needle-like Beard, that grows out from the Husk of Corn or Grass, called also the *Awn*.

Aristolochia, are such Medicines as promote the Flux of the *Lochia*.

Arm. See *Humerus*.

Aromaticks, from ἀρωμα signifying a sweet Flavour, is now given to all Medicines of a grateful spicy Scent; tho' anciently it was a Term given to Myrrh only, and since by way of Preheminence Saffron hath by some been called *Aroma Philosoporum*. Those Bodies are properly called Aromaticks which have a fragrant or pungent Taste or Smell.

Art, as applied to Medicine, includes all that is to be done in the Practice of its several Branches; whereas those Principles or Rules which direct that Practice, are more properly called Theory or Science.

Artery, as some imagine, from ἀήρ, *Air*, the Air, and τρέφω, *servo*, to keep: for the Ancients had a Notion of their inclosing a great deal of Air; but others, who understand their Use better, derive it from ἀπὸ τῆς αἵμας because it continually rises up with a Pulse-like Motion. There are indeed three Ducts in the Body to which this Name is applied, viz. the *Aspera Arteria*, the *Arteria Pulmonaris*, and *Vena Arteriosa*, which see. But all the Vessels that convey the Blood from the Heart, more properly are hereby included, and which 'tis of that Consequence to be well acquainted with, as deserves a particular Description here.

An Artery is a conical Canal conveying the Blood from the Heart

to all Parts of the Body. Each Artery is composed of three Coats, of which the first seems to be a Thread of fine Blood-Vessels and Nerves, for the Nourishing the Coats of the Artery. The second is made up of circular, or rather spiral Fibres, of which there are more or fewer *Strata*, according to the Bigness of the Artery. These Fibres have a strong Elasticity, by which they contract themselves with some Force, when the Power by which they have been stretched out ceases. The third and inmost Coat is a fine, dense, transparent Membrane, which keeps the Blood within its Canal, which otherwise, upon the Dilatation of an Artery, would easily separate the spiral Fibres from one another. As the Arteries grow smaller, these Coats grow thinner, and the Coats of the Veins seem only to be Continuations of the capillary Arteries.

The Pulse is thus accounted for: When the left Ventricle of the Heart contracts, and throws its Blood into the great Artery, the Blood in the Artery is not only thrust forward towards the Extremities, but the Channel of the Artery is likewise dilated; because Fluids, when they are press'd, press again to all Sides, and their Pressure is always perpendicular to the Sides of the containing Vessels; but the Coats of the Artery by any small *Impetus* may be distended: therefore upon the Contraction of the Heart, the Blood from the left Ventricle will not only press the Blood in the Artery forwards, but both together will distend the Sides of the Artery. When the *Impetus* of the Blood against the Sides of the Artery ceases, that is, when the left Ventricle ceases to contract, then the spiral Fibres of the Artery, by their natural Elasticity

ity, return again to their former State, and contract the Channel of the Artery, till it is again dilated by the Systole of the Heart. This Diastole of the Artery is called its Pulse; and the time the spiral Fibres are returning to their natural State, is the Distance between two Pulses. This Pulse is in all the Arteries of the Body at the same Time: For while the Blood is thrust out of the Heart into the Artery, the Artery being full, the Blood must move in all the Arteries at the same Time; and because the Arteries are conical, and the Blood moves from the Basis of the Cone to the Apex, therefore the Blood must strike against the sides of the Vessels, and consequently every Point of the Artery must be dilated at the same Time that the Blood is thrown out of the left Ventricle of the Heart; and as soon as the Elasticity of the spiral Fibres can overcome the *Impetus* of the Blood, the Arteries are again contracted. Thus two Causes operating alternately, the Heart, and Fibres of the Arteries, keep the Blood in a continual Motion.

The chief Distribution of the Arteries is into the *Aorta ascendens*, and the *Aorta descendens*, from which they are branched into all the several Parts of the Body after the following Manner. The *Aorta* coming from the left Ventricle of the Heart, sends out two Branches called *Coronariæ* to the Heart, before it pierces the *Pericardium*; but after it hath pierced it, it ascends a little, and then it crooks forward, and forms the *Aorta descendens*. From the upper Side of this Crook it sends out three Branches, two on the left Side, which are one *Subclavian*, and one *Carotide*; and one on the right Side, which is the right *Subclavian*, from which immediate-

ly arises the right *Carotide*. The *Arteriæ Subclaviæ* on each Side send out the *Mediastina*, the *Mammoria*, the *Cervicalis*, or *Vertebralis*, and a Branch which goes to the Muscles of the Neck, of the Breast, and to the *Glandulæ Thyroides*. After the *Subclavia* has passed thro' the *Musculus Scalenus*, it is called *Axillaris*. The *Arteriæ Carotides*, as they ascend on each Side the *Trachæa Arteria*, give some small Branches thereunto to the *Larynx*, to the *Glandula Thyroides*, and then they send out each four considerable Branches. The first goes to the Tongue, to the Muscles of the *Os Hyoides*, and to the *Pharynx*. The 2d divides into two Branches, of which the first loses itself in the Muscles *Milohyoides* and *Digastrici*; and the second goes along the Basis of the lower Jaw, and is lost in the Muscles of the Lips. The third Branch divides at the Angle of the lower Jaw into two Branches; one enters into the lower Jaw, and the other makes the *Arteria temporalis*. The 4th Branch goes to the Muscles on the hind Part of the Neck, and to the Skin of the hind Head. The *Carotide* then passes thro' the Canal in the *Os Petrosum*, gives some Branches to the *Dura Mater*, joins with the *Cervicalis*, sends out Branches to the *Glandula Pituitaria*, *Retæ mirabile*, *Plexus Choroides*; then runs thro' all the Circumvolutions of the *Cerebrum* and *Cerebellum*, and loses its capillary Branches in their *Carotidal Substance*. The *Axillary* having pierced the *Scalenus*, gives some little Branches to the nearest Muscles; it sends out the *Thoracica superior* and *inferior*, the *Scapularis*, and then gives a Branch which passes under the Head of the *Humerus* into the *Musculus longus* and *brevis* of the Arm. The Trunk of the *Axil-*

Axillaris goes down the Inside of the Arm, giving Branches by the way to the Muscles that lie upon the *Humerus*. Above the Elbow it sends out a Branch which is spread upon the internal *Condyle* of the *Humerus*. At the Bending of the Elbow this same Trunk divides into two Branches, the one external, and the other internal; the external runs along the *Radius*, it casts out a Branch which goes to the *Supinator*, and ascends to the *Brachialis internus*: in the rest of its Course down to the Wrists, it gives Branches to the *Longus Rotundus*, and Benders of the Fingers, Wrist and Thumb. Being come to the Wrist, it sends out a Branch which goes to the beginning of the *Tenar*, then it passes under the Tendon of the *Flexor Pollicis*; it gives a Branch to the external Part of the Hand, and passing under the Tendons of the Muscles, its Branches run along each Side of the Thumb and Fore-finger. The internal Branch goes down along the *Cubitus* to the Wrist, and is distributed in like manner to each Side of the Middle-finger and Little-finger.

The *Aorta descendens* sends out first the *Bronchialis*, which accompanies all the branches of the *Bronchia*; as it descends along the *Vertebrae* of the *Thorax*, it sends out on each Side the intercostal Arteries to the *Diaphragm*; it gives the *Phrenica*, and the *Celiaca* is the first it sends out when it enters the *Abdomen*. The *Celiaca* divides into two branches, the one on the right, and other on the left, of which the first gives the *Gastrica dextra* which goes to the Stomach, the *Cistica* to the Gall-bladder, the *Epiplois dextra* to the *Omentum*, the *Intestinalis* to the Gut *Duodenum*, and to a Part of the *Jejunum*, the *Gastro-Epiplois* to

the Stomach to the *Omentum*, and some branches to the Liver, which enters the *Capsula Communis*, to accompany the Branches of the *Vena Porta*. The left Branches of the *Celiaca* give the *Gastrica dextra*, which is also spread on the Stomach, the *Epiplois sinistra* to the *Omentum*, and the *Splenica* to the Substance of the Spleen: Then the *Aorta descendens* sends out the *Mesenterica superior*, the *Renales Adiposæ*, which go to the *Renales Glandulae*, or Fat about the Reins, the *Emulgents* to the Reins, the *Spermaticæ* to the Testicles, the *Lumbaris interior* to the Muscles of the Loins, the *Mesenterica inferior*, which with the *superior*, is distributed thro' the Mesentery, and which accompanies all the Branches of the *Vena Meseraicæ*. When the *Aorta* is come to the *Os Sacrum*, it divides into two great Branches; and from the Angle they make, springs out a small Artery called *Sacra*, because it spreads upon the *Os Sacrum*. The *Iliac Arteries* divide again into the external and internal *Iliac*. From the internal *Iliac* arises the *Hypogastrica*, which is distributed to the Bladder, to the *Rectum*, to the outer and inner Side of the *Matrix*, *Vagina*, *Vesiculae seminales*, *Prostatæ* and *Penis*, *Os Sacrum*, and all the Parts contained in the *Pelvis* or *Basin*: and then it gives two considerable Branches which pass out of the lower Belly; the first goes under the *Pyriformis*, and is distributed to the Muscles called *Glutæi*; the second, which is lower than the first, gives also two Branches pretty big, of which the first goes to the *Obturatores*, the second pierces the Cavity of the *Abdomen*, under the *Pyriformis*, and loses itself by several Branches in the *Glutæus major*. As soon as the external *Iliac* leaves

the Cavity of the *Abdomen*, it sends out the *Epigastrica*, which runs up the Inside the *Musculus rectus*, and a little below that. the *Pudenda*, which goes to the Privities: Then it is called *Cruralis*, which sends out three considerable Branches; the first is called *Muscula*, which gives several Branches; the first passes between the Muscles called *Iliacus* and *Pectineus*, and loses itself in the third Head of the *Triceps* in the *Semimembranosus*, or *Seminervosus*, in the Beginning of the *Biceps*, in the *Quadrigemi*, and in the Cavity of the greater *Trochanter*. The second, third, and fourth go to several Parts of the *Triceps* and *Gracilis posterior*; then the Trunk of the *Muscula* goes under the first of the *Triceps*, and divides into three Branches more. The first having passed the third of the *Triceps*, is lost in the *Semimembranosus*. The second passes under the *Femur* to the *Vastus externus*. The third goes a little lower, casts Branches to the Tendon of the third of the *Triceps*; it loses itself at the End of the *Seminervosus*, and at the End of the great Head of the *Biceps*. The second considerable Branch of the Trunk of the *Crural* goes to the external Part of the Thigh, passes under the *Sartorius*, under the *Gracilis rectus*; it casts some Branches to the End of the *Iliacus*, to the beginning of the *Gracilis rectus*, to the *Vastus externus*, *Cruralis*, *Membranosus*, and Fore-part of the *Gluteus minor*. The third rises almost from the same Part of the *Crural*, and loses itself in the Middle of the *Gracilis rectus*, *Cruralis*, and *Vastus externus*. The *Crural* having sent out these three Branches, gives several more to the *Sartorius*, the *Gracilis posterior*, but the greatest goes to the *Vastus externus*. As the *Crural* descends, it sinks deeper in the

hinder Part of the Thigh, passing thro' the Tendons of the *Triceps*; being come to the Ham, the first Branch it sends out is spread on the hinder Part of the Thigh-bone, and it goes to the little Head of the *Biceps*; then it casts out several other Branches which lose themselves in the Fat, and in the Extremities of the Muscles behind the *Femur*. Under the Ham it sends out two *Poplitei*, which go round the Knee; the one on the Inside, the other on the Outside. It casts out a little lower several other Branches, of which some go to the beginning of the *Gemini*, of the *Soleus Plantaris*, and *Popliteus*, and the rest surround the *Tibia* on all Sides. Then it divides into two Branches, of which the first passes thro' the Membrane which joins the *Tibia* and *Pirone* together, upon which it continues its way, giving Branches to the *Tibiæus externus*, and to the *Extensores Digitorum*. The second Branch divides into two more external and internal; the external, after it hath given Branches to the *Soleus*, to the *Peronæus posterior*, and to the *Flexor Pollicis*, pierces the Membrane between the *Tibia* and *Pirone*, and rises upon the external Ankle, to spread itself upon the upper Part of the Foot. The internal, as it descends, gives Branches to the *Soleus*, to the *Flexores Digitorum*, to the *Tibiæus posterior*; then it passes by the Cavity of the *Pirone*, where it divides into two Branches, of which one passes under the *Tenar* to the great Toe, the other passes between the *Musculus brevis* and the *Hypotenar*, and is distributed into the other Toes.

And this is the Order and Distribution of the principal Arteries in the Body, each of which are subdivided into others, and these again into others, till at last the whole Body

Body is over-spread with most minute capillary Arteries, concerning which there are two Things necessary to remark : First, that the Branches which go off at any small Distance from the Trunk of an Artery, unite their Canals into one Trunk again, whose Branches likewise communicate with one another, and with others, as before: By this Means, when any small Artery is obstructed, the Blood is brought by the communicating Branches below the Obstruction, which must otherwise have been deprived of their Nourishment.

These Inosculations are every where apparent, but chiefly in the *Uterus*, *Mesentery*, and *Brain* : It is the same Thing with the Veins. The other Thing is, That the Sum of the Orifices of the Branches of any Artery is greater than the Orifices from the Trunk from which they came : upon which Account the Velocity of the Blood is greatly diminished, as it removes further from the Heart. The Proportions the primary Branches bear to one another, and the *Aorta* to the *Cava* and *Pulmonary Artery*, are as follow :

The <i>Aorta</i>	—————	—————	100000
Right subclavian Artery	—————	—————	20101.9
Left <i>Carotide</i>	—————	—————	10016
Left Axillary	—————	—————	14456.7
Bronchial Artery	—————	—————	434.2
24 Intercostals, each 434.2	—————	—————	10420.8
<i>Cæliack</i>	—————	—————	4830.3
<i>Mesenterick</i>	—————	—————	7307.8
Right Emulgent	—————	—————	4639
Left Emulgent	—————	—————	4639
Inferior <i>Mesenterick</i>	—————	—————	3015
Six Lumbals, each 434.2	—————	—————	2605.2
Left Iliack	—————	—————	9739.8
Right Iliack	—————	—————	10535
Sum of all the Branches			102740.7
The <i>Pulmonary Artery</i>			139291.8
The ascending <i>Cava</i>	—————	—————	92373
The descending <i>Cava</i>	—————	—————	92373

To the Action of the Arteries in the human Body are owing the Circulation of the Blood, its Heat, red Colour, Fluidity, Assimilation of the Seed, the Conversion of fix'd Salts into such as are volatile, and the Performance of all the Secretions. To shew all these Particulars in their full Extent, would be to give

a curious and useful History of the Arteries : And they may readily enough be drawn from the Nature and Structure of those wonderful Canals, with the Help of our present Philosophy and Chymistry.

Arteriotomy, from ἀρτηρία, an Artery, and τέμνω, *seco*, to cut, is letting Blood by the Arteries in some

extraordinary Cases ; but the Hazard makes it very rarely practised.

Arthritis, from *ἄρθρον*, *Articulus*, a Joint ; any Distemper is properly enough thus called that affects the Joints, but the Gout most particularly ; and this hath different Names as it falls upon different Parts, amongst some Authors more nice in Words than Things : as *Podagra* when in the Feet, *Chiragra* when in the Hands, and so of other Parts. From the same Derivation.

Arthrodia, is often used for any Articulation in general ; but sometimes signifies the same with *Arthrosis*.

Arthrosis, is used to signify that kind of Articulation, when a round Head of a Bone is received into a round Hollow of another ; such as that of the *Femur*, with the *Ischium*, and as the *Radius* receives the *Humerus*.

Articulation : This is peculiar to the Bones, and distinguished into three Sorts, 1. *Diarthrosis*. 2. *Syncondrosis*, and, 3. *Synarthrosis*. Of the first there are two Sorts, the *Enarthrosis*, or *Arthrodia*, and *Ginglymus*. The first is when a round Head of a Bone is received into a round Cavity of another, such as the Articulation of the *Femur* with the *Ischium* ; and this is called the Ball and Socket. The Property of this joining is, that the Parts may move equally to any Side. The *Ginglymus* is described under that Word, which see. The second, *Syncondrosis*, is when the Extremities of two Bones are join'd to one another by means of an intervening Cartilage. Thus the Bodies of the *Vertebrae*, and the Extremities of the Ribs and *Sternum*, are join'd together ; where tho' the Motion of all is manifest, yet that of any two is

hardly discernable. The third, *Synarthrosis*, is also of two Sorts, the *Sutura* and *Gomphosis*. The *Sutura* is when two Bones are mutually indented with one another ; the Teeth by which they are indented are of various Figures, sometimes like the Teeth of a Saw ; sometimes broad at their Extremities, and narrow at their Base ; sometimes the Sides of the Teeth are likewise indented, as frequently in the *Sutura Lambdoidalis*. This Sort of Articulation is called Dove-tailing, and is used by Joiners in Drawers, &c. All the Bones of the *Cranium* and upper Jaw, as also the *Epiphyses* of the Bones, are join'd by this Articulation. *Gomphosis* is when one Bone is joined to another, as a Pin or Nail is in a Piece of Wood ; and the Teeth only are articulated this Way in their Sockets. To these may be added a third kind of *Synarthrosis*, very different from any of the former ; which is, when a Bone has a long and narrow Channel which receives the Edge or Process of another Bone ; and thus the *Vomer* is join'd to the *Os Sphænoides* and *Septum Narium* : This is called ploughing. These comprehend all the different Articulations of Bones in a human Body, and what other Authors mention is to no Purpose. The Extremities of all the Bones which are articulated to one another with a manifest Motion, are bound together by membranous Ligaments, which rise from the Conjunction of the *Epiphyses* with the Bone ; and passing over the Articulation, are inserted at the same Place in the other Bone. Thus they form a Bag which embraces all that Part of the Extremities of the Bones which play upon one another ; and in this Bag is contained a Mucilage for the easier Motion of the Joint. This is separated

rated by Glands which lie in Fat on the Inside of the Ligaments. Those articulated by the *Ginglymus* have the Ligaments much stronger than they are either behind or before; that the Protuberances may be kept to play in their Cavities, and to prevent the Bones from slipping out of Joint.

Arytenoides, from ἀρύω, *haurio*, to drink, and ἔσλος, *Forma*, Shape. See *Larynx*.

Arytenoideus, is a Muscle to contract the preceeding Cartilages, from the same Derivation.

Arythmus, from the privative Particle α, and ῥυθμός, *Modulus*, or *Pulsus*, is a sinking of the Pulse so that it cannot be felt, as in a Swoon: Or it is rather used for any Irregularity of the Pulse, which some Authors distinguish into three kinds, but not worth Notice here.

Ascarides, from ἀσκέω, *moveo*, to move; are little Worms in the *Rectum*, so called from their continual troublesome Motion, causing an intolerable Itching.

Ascites, a particular Species of a Dropsy, affecting chiefly the lower Belly. *Hippocrates* calls it in a particular Manner the watry Dropsy, and *Galen* charges it upon cold Causes. By the best practical Writers it is defin'd a Swelling of the lower Belly, and depending Parts, from an Extravasation and Collection of Water broke out of its proper Vessels, by means of some Obstruction or Weakness of the Glands and *Viscera*. This Case, when certain and inveterate, is universally allowed to admit of no Cure but by means of the manual Operation or Tapping; tho' there want not Arguments to shew that the Fluid, which is here suppos'd extravasated, still continues to circulate in the Body.

Asellus, has been applied to many

Things in Medicine wherein it is discontinued, and is now to be met with only to signify the same as *Millepedes*.

Asperia Arteria, called also *Trachea*, is a Canal situated in the fore-part of the Neck, before the *Oesophagus*, whose upper End is called *Larynx*; from whence it descends to the fourth *Vertebra* of the Back, where it divides and enters the Lungs. This Canal is made of annular Cartilages, which are at small and equal Distances from one another. These Cartilages grow smaller and smaller as they approach the Lungs; and those of the *Bronchi* are so close to one another, that, in Expiration, the second enters within the first, and the third within the second, and the following always enters the Preceeding. Betwixt the *Larynx* and the Lungs these Cartilages make not complete Rings; but their hinder Part, which is contiguous to the *Oesophagus*, is membranous, that they may the better contract and dilate, and give way to the Food as it passes down the Gutlet. But the Cartilages of the *Bronchi* are completely annular; yet their Capillary Branches have no Cartilages, but instead of them small circular Ligaments, which are at pretty large Distances from one another. The Use of the Cartilages is to keep the Passage for the Air open; but in the Capillary *Bronchi* they would hinder the subsiding of the Vesicles. These Cartilages are tied together by two Membranes, external and internal; the external is composed of circular Fibres, and covers the whole *Trachea* externally; the internal is of an exquisite Sense, and covers the Cartilages internally; it is composed of three distinct Membranes, the first is woven of two Orders of Fi-

bres; those of the first Order are longitudinal, for the Shortning the *Trachea*; they make the Cartilages approach and enter one another: The other Order is of circular Fibres for the contracting the Cartilages. When these two Orders of Fibres act, they help, with the external Membrane, in Expiration, in coughing, and in altering the Tone of the Voice. The second Membrane is altogether glandulous, and the Excretory Vessels of these Glands open in the Cavity of the *Trachea*: they separate a Liquor for moistning the Cavity, and for defending it from the Acrimony of the Air. The third and last, is a Net of Veins, Nerves, and Arteries; the Veins are Branches of the *Vena Cava*; the Nerves of the *Recurrent*; and the Arteries Sprigs of the *Carotides*.

Asperity, is that Roughness which arises from the unequal Surfaces of any Bodies.

Asphyxia, is used by some ancient Writers for a Deficiency or Privation of the Pulse in some Cases, where it stops for some time.

Affidentia Signa, are such Symptoms, according to *Galen*, as are sometimes present to a Disease, but not always so; which latter are called *Pathognomonic*.

Affidius, is by some, particularly *Fernelius*, used for a *continuent* Fever, in Opposition to *intermittent*.

Assimilation. Some use it in the same Sense as *Nutrition*, which therefore see; and also *Accretion*: but many use it in a more general Sense for a Reduction of two Bodies or two Portions of Matter into like Quantities, that before were different.

Assimilation, commonly expresses the Union of Aliments to the Body, in Nourishment; but in a more general Sense signifies the Reduction

of any one Body to the Nature of another.

Asthma, from ἀσθμαζω, *anbelo*, to breathe with Difficulty; is a frequent, difficult, and short Respiration, join'd with an hissing Sound and a Cough, especially in the Night-time, and when the Body is in a prone Posture; because then the Contents of the lower Belly bear so against the Diaphragm, as to lessen the Capacity of the Breast, whereby the Lungs have less Room to move.

Astragalus, is a Bone of the Heel with a convex Head, and is articulated with the two Fociles of the Leg by *Ginglymus*. See *Talus*.

Astringents, are those Medicines which are binding; and they are either such as act by the Asperity of their Particles, whereby they corrugate the Membranes, and make them draw up closer; or such as thicken the Fluids, whereby they cannot run off so fast as before.

Ataxia, is frequently used by the Ancients, and some Moderns, to express an Irregularity in a Disease, or a Distemper out of the common Course of Symptoms.

Athanasia, signifying immortal, hath been a Term affectedly given to some Medicines to express their extraordinary Efficacy; as the *Athanasia magna* of *Nicolaus*, &c.

Athanasor, is a digesting Furnace, contrived to keep a constant Heat for some time together, so that it may be augmented or diminished at Pleasure, by opening or shutting some Apertures made on Purpose with Sliders over them, called Registers.

Atheroma, from ἀθήρωμα, which signifies a kind of *Poultice*, is a Tumour of a pappy Consistence, without Pain, or Discoloration of the Skin.

Athle-

Athletick, signifies a hale vigorous Constitution.

Atlas, the first *Vertebra* under the Head is so called, from the Manner it supports it. See *Spine* and *Vertebrae*.

Atmosphere, is the lower Part of the Region of the Air, or *Æther*, with which the Earth is encompassed all around. Concerning the Pressure, and Influences of which upon human Bodies, many Authors may be consulted, but particularly Dr. Mead's *Imperium Solis ac Lunæ*, &c. The same Term likewise is used to signify the Effluvia, or Steams from any particular Bodies, whose Volatility and Activity of Parts emits somewhat all round, from ἀήμις, *Halitus*, a Vapour, and σφαῖρα, *Sphæra*, a Globe.

Atom, from the privative Particle α, and τέμνω, *seco*, to cut, (that is, what cannot be further divided) is such a small Particle as cannot be physically divided: and these are the first Rudiments, or the component Parts of all Bodies.

Atony, from the privative Particle α, and τείνω, *tendo*, to stretch; is a Relaxation of the Solids of a human Body, which occasions Loss of Strength, Faintings, &c.

Atrabilarious Humour, may very well be understood of the thick Part of the Blood, deprived of its due Proportion of Serum, or finer and more volatile Parts, whereby it is rendred gross, black, unctuous, and earthy. The same may not improperly be called by the Name of *Succus Melancholicus*, which we meet with in some Authors.

Atra Bilis. See *Aduſt*.

Atrophy, from the privative Particle α, and τρέφω, *nutrio*, to nourish; is when the Body insensibly wastes, as in a Consumption.

Attenuation, is making a Body or

Fluid thinner than it was before; and attenuating Medicines are such as dilute or deterge, or both.

Attollens Nares, is a Muscle that arises from the Ends of the two upper Bones of the Nose, and is inserted into the upper Part of the *Alæ*, pulling the Nose upwards when contracted; from *attollo*, to lift up.

Attollens Oculi, from the same Derivation: It is likewise called *Superbus*, which signifies proud, because it lies upon the upper Part of the Globe, and pulls up the Eye, which gives an Air of Haughtiness.

Attraction, from *ad*, to, and *traho*, to draw. This is a Property in Matter, by which are accounted for all the grand Appearances in the inanimate World, and which our own Countryman Sir *Isaac Newton* first taught us to reason about with Certainty. The Substance of what has been digested into Order, to support many physical Reasonings, may be apprehended from the following Propositions.

Prop. 1. The Quantity, or Force, of Attraction in all Bodies is exactly proportional to the Quantity of Matter in the attracting Body, as being in reality nothing but the Result or Sum of the united Forces of all those single Particles of which it is composed; or, in other Words, Attraction in all Bodies is, *cæteris paribus*, as their Solidities: hence,

Corol. 1. At equal Distances the Attractions of homogeneous Spheres will be as their Magnitudes: and,

Corol. 2. At any Distance whatever, the Attraction is as the Sphere divided by the Square of the Distance.

Prop. 2. The attractive Force is infinitely greater at the Contact, or extremely near it, than at any determinate Distance.

The

The attractive Force exerts itself only where the Tendency of a Particle another way is over-power'd by its Proximity to that into whose Contact it is suppos'd to be drawn : For as this Property is universal, and every Part of Matter does draw, and is drawn by every other Part of Matter, within one another's Spheres of Attraction ; so one cannot influence another at any Distance, but must necessarily be very near it ; and so much the nearer, in proportion to its Smallness : so that upon a double Account, two Particles cannot influence one another by their Attractions, unless very near ; one from their predominant Inclinations another way, and the other from the Minuteness of their Spheres of Activity ; insomuch that out of that Reach, could they be suppos'd under no other Tendency, they would never come together.

Prop. 3. A large Particle attracts not more strongly than a small one of the same Solidity : but Diversity of Figure causes different Degrees of Attraction in Particles that are otherwise the same.

This is almost a Consequence from the former Proposition ; for as this attractive Force can only act on such Particles as are extremely near, the remotest Parts in a large Particle can conduce nothing thereto. And for the same Reason this Power varies, according as Matter is in Cones, Cylinders, Cubes, or Spheres ; and a spherical Particle, *cæteris paribus*, has the strongest Attraction ; as there is more Solidity under such a Surface, than in any other Figure.

Prop. 4. If Particles swimming in a Fluid attract one another more strongly than they do the Particles of the Fluid, the Force by which they come to each other, will be as the Excess of their mutual Attracti-

ons to their Attractions of the Fluid.

Such Parts of the Fluid as interpose between the attracting Particles will be thrust or press'd upon by such their Inclinations to each other ; and therefore according to the Nature of Fluidity, the Parts of the Fluid will be drove out of their Places by such Excess of Pressure, and thereby the attracting Particles will join.

Prop. 5. If Particles swimming in a Fluid are more attracted by the Fluid than by one another, they will recede from one another with a Force that will be equal to the Difference of their mutual Attractions, and the Attraction of the Fluid.

For the ambient Particles of the Fluid attracting them more strongly than they do each other, they will by such Excess of Force be drawn from one another into Contact and Cohesion with the Particles of the Fluid. Upon the two foregoing depends the whole Theory of Crystallization and Solution.

Prop. 6. The Force, by which Particles attracting one another cohere, is, *cæteris paribus*, in proportion to their Contacts.

For these Parts not in Contact, conduce nothing, or extremely little, to the Force of Cohesion ; and a much greater Power is required to separate two Particles which cohere in two Points, than two Particles which cohere only in one Point : For which Reason it is, that we find two polished Marbles adhere more strongly than any other two Bodies of equal Dimensions, which are not so solid, but have more Pores and Interstices between their Parts, and which will not receive so good a Polish, by which their Parts are brought into so close a Contact with one another. And for the same Reason

Reason it is, that many light Substances have such strong Cohesions and Tenacities; for that whereby Particles of the least Matter in proportion to their Surfaces, are specifically lightest, also occasions their strongest Cohesions, by being capable of more Contact than Particles of more Solidity under less Surface.

Prop. 7. If the attracting Particles are elastick, they must necessarily produce an intestine Motion greater or less, according to the Degrees of their Elasticity and attractive Forces.

Because upon the Occursions which their attractive Powers draw them into, they will fly off from one another again with the same Degree of Velocity that they meet together with, abating for the Resistance of the Medium; but when they approach other Particles in their Resilition, their Velocity must increase, because they are afresh attracted: and therefore meeting a second Time, they will recede with a greater Velocity than they did at their first Concurfion; which will continue an intestine Motion, as are their attractive Powers and Elasticities.

Prop. 8. Particles attracting one another in a Fluid, moving either with a swift or a slow progressive Motion, attract one another just the same as if the Fluid was at rest, if all the Particles move equally; but an unequal Velocity of the Particles will interrupt their Attractions.

All the Parts of the Fluid moving on with equal Velocity, leave the attracting Particles in the same Condition, as if the whole Fluid was at rest: but some Parts moving faster than others, must frequently change their Positions, and thereby disturb their Attractions, Thus it is that

Salts will not chrystallize, till the Water in which they are dissolved is near or quite cold, and the intestine Motion of its Particles, caused by Heat, is quieted. See *Particles*.

Attrahents. See *Drawers*.

Attrition, from *ad*, and *tero*, to wear against; expresses such a Motion of Bodies against one another, as strikes off some superficial Particles, whereby they wear less and less. It is also frequently used for the Friction or rubbing such supple Bodies one against another, as will not wear out, but occasions some particular Determinations of the Fluids they contain: and thus various Sensations of Hunger, Pain, or Pleasure are occasioned by the Attritions of the Organs fashioned for such Impressions.

Auditorius. See *Nerve*.

Averni, are such particular Places where suffocative, or poisonous Steams rise up from the Bowels of the Earth, of which there are various Kinds.

Aura, signifies an airy Exhalation, Spirit, or Vapour.

Auriculæ Cordis, the Ears of the Heart. See *Heart*.

Auripigmentum, is the yellow Arsenic, called also yellow Orpin.

Auris. See *Ear*.

Auriscalpium, from *Auris*, an Ear, and *scalpo*, to scratch. An Instrument to pick and cleanse the Ear from Wax.

Aurum Fulminans, a Preparation made by dissolving Gold in *Aqua regia*, and precipitating it with Salt of Tartar; whence a very small Quantity of it becomes capable, by a moderate Heat, of giving a Report like that of a Pistol. 'Tis also said to be a good Medicine for lowering a Salivation, or where too much Mercury has been used.

Aurum Potabile : if it would be of any Service in Medicine, 'twere very easy, by means of Chymistry, to reduce the Body of Gold into a Liquor, that might be taken internally, with the utmost Safety ; for this Preparation is far from being a Whim, as those ignorant in Chymistry are apt to treat it.

Austere, is a rough astringent Taste, arising, according to *Scribonius Largus*, from an Union of earthy and tartarous Particles, and according to the *Cartesian* Philosophy from obtuse-angled Figures. *Sylvius* takes a great deal of Pains to shew how these generate the Stone ; and likewise how they do Service in particular Cases.

Automaton, expresses properly a Machine that hath the Power of Motion within itself, and which stands in need of no foreign Assistance.

Autopsy, from *αὐτός*, *ipse*, one's self, and *ὄψις*, *Visus*, Sight, signifies the same as ocular Demonstration ; seeing a thing one's self.

Axilla, is the Cavity under the upper Part of the Arm, called the Arm-pit.

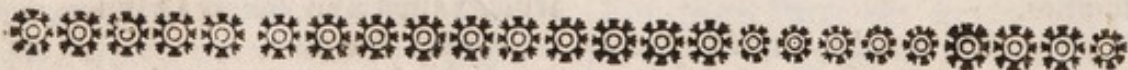
Axillary Arteries and Veins, are

those which from the uppermost Part of the *Aorta* and *Cava*, pass thro' the Arm-pits.

Axiom, is a Proposition that is evident at first Sight, and cannot be made plainer by Demonstration.

Axis, is the third *Vertebra* from the Skull. It expresses also that quiescent Right Line of a Vessel, which is always equidistant from the Sides.

Azygos, is a considerable Branch of the *Cava*, called also *Vena sine pari*, because it is single. It descends thro' the right Side of the Cavity of the *Thorax*, and at its Arrival to the eighth or ninth *Vertebra*, it begins to keep the Middle, and sends forth on each Side intercostal Branches to the Interstices of the eight lower Ribs, and there is divided into two Branches, of which the larger descends to the left, betwixt the Processes of the *Diaphragm*, and is inserted sometimes into the *Cava* above or below the Emulgent, but oftner into the Emulgent itself. The other which goes down on the right, enters the *Cava* commonly a little below the Emulgent, but is very seldom joined to the Emulgent itself



B.

B *Acciferous*, is said of any Tree, Shrub or Plant, that bears Berries.

Bacculi, is used by some Writers for a particular kind of Lozenges shaped into little short Rolls. *Hildanus* likewise uses it for an Instrument in Surgery.

Balanus. See *Glans*.

Balbuties, is a Stammering in the Speech.

Balneum, is a Word much used by Chymists, and generally signifies a Vessel of Water, in which another is placed that requires a softer Heat than the naked Fire : But their *Balneum Mariæ* is a Mistake for *Balneum Maris*, which signifies only a Sea or Water-bath. A Sand-heat is also sometimes called *Balneum Siccum*, or *Cinereum*. But what comes more properly under this Term in Medi-

Medicine, are Baths which are made so by Art or Nature to wash the Patient in. The artificial Baths have by the Antients been in great Esteem, and contrived for many Purposes, especially in Complaints to be relieved by Revulsion; as in inveterate Head-aches, by opening the Pores of the Feet; and also in cutaneous Cases they were much in Esteem. But the modern Practice has greatest Recourse to the natural Baths, most of which abound with a Mineral Sulphur; as appears beyond all Doubt from their turning Silver or Copper blackish. The Bath Mud rubbed upon Silver, is what the Guides use to gild it with of a gold Colour; and some who have been so curious as to boil it in Oil, affirm it to have made a good Balsam of Sulphur. The cold Baths are only the most convenient Springs or Reservatories of cold Water to wash in. They have been long banished out of Medicine by a monkish Philosophy and Chymistry: for the Antients had them in great Esteem; and by good Luck, some Improvements in Physical Reasoning from the Assistances of Geometry and Mechanicks, have brought them into tolerable Countenance again; and the present Age can produce us Abundance of noble Cures performed by them. For further Acquaintance with their medicinal Efficacies, see *Baths*.

Balsamella, *Balsaminum*, and *Balsamum*, are promiscuously used to signify the Juice of an Arabian Tree called *Opobalsamum*; to which are allied many others, as those of *Tolu*, *Peru*, &c. And

Balsam sometimes signifies a thick, odoriferous, penetrating Substance, of the Consistence of an Ointment, as Apoplectic Balsam, &c. as other Liquors drawn from Gums and re-

finous Substances by the Help of a vinous Spirit; but it is most commonly applied to such Forms of Medicines as are oily, and of an inferior Consistence to that of an Ointment: and the Chymists frequently give it to Preparations of saline Substances, tho' very improperly.

Barometer, and *Baroscope*, from *Βάρος*, *Onus*, a Weight, and *μέτρος*, *Mensura*, a Measure; is an Instrument to measure the Weight of the incumbent Atmosphere.

Barrel, a pretty large Cavity behind the Drum of the Ear, is so called. It is lined with a Membrane, in which there are several Veins and Arteries. It is always full of purulent Matter in Children; and in its Cavity there are four small Bones, viz. the *Malleolus*, the *Incus*, the *Stapes*, and the *Os Orbiculare*.

Basilica, from *βασιλέω*, *rego*, to govern: The middle Vein of the Arm, by way of Pre-eminence, is so called; it is likewise attributed to many Medicines for the same Reason. A Plant also goes by the same Name, that is an Ingredient in the compound Briony-Water, and sometimes called *Ocimus*. There is also an Ointment in the Dispensatories by this Name, as likewise an Emplaster described by *Scribonius Largus*, and *Celsus*, given in all Likelihood at first by the Inventers, in regard to the great Opinion they had of their Virtues.

Basilare Os: The same as *Sphenoides Os*; which see.

Basiglossum, from *Βάσις*, *Fundamentum*, the Bottom, and *γλῶσσα*, *Lingua*, the Tongue; is a Pair of Muscles which depress the Tongue, and arise fleshy from the Basis of the *Os Hyoides*.

Basis, in Anatomy, expresses the upper and broader Part of the Heart, oppo-

opposite to the *Mucro* or Point ; because considering it as a Cone, which it resembles in Shape, this Name is proper to it, altho' by its natural Situation it is uppermost. The Foundation of the *Os Hyoides* hath likewise this Name. And it is also used sometimes to signify, in a figurative Sense, the chief Ingredient of a Composition.

Bathrum, signifies strictly a Seat or resting Place, whence Surgeons have given this Name to an Instrument contriv'd for the Ease and Security of luxated Joints after their Reduction. It is described very anciently, but *Scultetus* hath done it with much the most Accuracy.

Bathmus, is used for such Cavities of the Bones as receive the Prominences of others into them.

Battitura, signifies those Scales or Flakes which fly off from hot Iron when first taken out of the Fire and beat on the Anvil ; as also from any other Metal in like manner managed.

Baths, and *Bathing* : Of these there are the natural and the artificial ; the latter are much out of present Use in Medicine ; and of the former there are two kinds, the hot and the cold Baths.

The chief of the hot Baths in our Country, is that famous one near *Wells* in *Somersetshire* ; another there is of inferior Note at *Buxton*. We shall leave it to Naturalists and Philosophers to account for the Production of those Waters, and be contented with observing that they greatly abound with a Mineral Sulphur. From the Matter then with which this Water is impregnated, it may be pronounced soft, healing, subastringent, and balsamick. Subastringent is added, because we never meet with Sulphur, even in the sublimed Flowers,

which has not some Portion of a Salt in its Composition ; which when boiled in Oil, as in making the balsamick Sulphurs, shoots like Needles, or the Branching of *Sal Armoniac* : so that it is very improbable these Waters should take up any Sulphur in their subterraneous Current, without bringing also some of that saline Part along with them, which they are never found without above Ground ; and especially when we consider how much more it is in the Nature of Water to attract and join with such Particles, than those which are purely sulphurous. Hence we are naturally directed to those Cases wherein these Waters, and bathing in them, must be of Service. They are like a Fermentation, which both supple and strengthens the Parts all over the Body at once, and by gently shaking and undulating the Fibres, helps forward vital Motions, which are ready to be at a Stand. In old Pains and Aches, which have been the Remains of nervous Distempers, and where some particular Part continues contracted, or has any Humours fixed upon it, which it cannot dislodge, these Waters pump'd upon it hot from the Spring, may do more towards a Cure, than all the Compositions in Pharmacy. Bathing all over in these Springs cannot but wonderfully open that almost infinite Number of secretory Orifices upon the Surface of the Skin, and clear the cutaneous Ducts of Matter which is apt to stick in them ; by the Aperture of which *Spiracula*, the Fluids of the whole Body have more Room to move in, and have proper Vents to reak out a great deal, which it is of Service to the OEconomy to get rid of. These Sulphur Fountains, likewise inwardly used, to Amazement warm and

and strengthen a decay'd Stomach, especially if relaxed and worn out almost with Luxury and Debauch. The most grievous Nausea's and Vomitings, from these Causes, have been removed by them : For they both soften again with proper Moisture the Fibres which have been render'd incapable to vibrate by the Use of hot, burning, spirituous Liquors, and at the same time draw them into greater Tensity : as a Chord which relaxes with over drying, fills up and straightens upon the Contact and Attraction of a convenient Moisture. The small Share of a fine Salt, which likewise attends, and is as it were wrapped up in the Particles of Sulphur, cannot but contribute somewhat in restoring the Tone of such decayed Parts. But besides the Benefit these do to the Stomach, they also carry along with them into the most remote Recesses, a Balsamick of Nature's own Preparation ; whereby such Decays in the Stomach, or in any of the *Viscera* from Abscesses, Ulcerations, or any like Causes, are with great Success relieved ; and particularly if they be of the Kidneys and urinary Passages, because they wash thro' them in more Plenty, than where they come by the ordinary Course of Circulation.

Cold Baths have been long banish'd out of Medicine by the Usurpations of false Chymistry, and a Monkish Philosophy. For the Ancients had them in the greatest Esteem ; and some Improvements of Reasoning in Physick from Geometry and Mechanicks, have brought them into tolerable good Countenance again : and the present Age can furnish us with Abundance of noble Cures perform'd by cold bathing, which were long attempted in vain by the most efficacious

Medicines. There are hardly any chronick Diseases but the cold Bath may be make Use of to Advantage therein, if there be nothing peculiar in the Constitution to forbid its use ; which is Corpulency, and unsound *Viscera*. In very fat Persons the Fibres are so stuffed round, that they have no room to vibrate or contract with the sudden Squeeze of the Bath ; instead therefore of enforcing their Springs, and shaking off any unnecessary Incumbrances, they will only be strained to no Purpose, and consequently weakened ; for wheresoever an Effort is made to remove any thing by an elastick Body, if the first Exertion fails, every *Impetus* afterwards languishes, and the Spring is spoiled. And in unsound *Viscera*, or where any Part is much weaker than the rest, such an additional Force will press the Fluids upon that Part very much to its Damage, which may be either the bursting of the Vessels, or promoting the Discharge of some ill Humours upon that Part, which otherwise might drain elsewhere. But where Nothing of this Nature forbids the Use of the cold Bath, whatsoever is to be effected by bracing the Solids, invigorating their Vibrations, and accelerating the Blood's Motion, is with certainty to be had from hence. All Diseases therefore from a sify Blood, and a Lentor upon the animal Juices, if the Elasticity of the Vessels is not worn out with Age or Debauches, will find Relief from this Practice. Whatsoever Inconveniencies likewise proceed from a bad Transpiration, or when Humours are thrown upon the Surface which cannot get thro' the Skin, this Remedy will be of Service in ; for upon Immersion the whole nervous System is so shook, that the very Capillaries feel the

the Influence, and the minutest Passages are forced open by an increased Velocity of the circulating Fluids, whereby the Skin will be cleared, and instead of entertaining gross acrimonious Humours, transmit only the imperceptible Matter of Perspiration. And this is the Reason why People are so brisk and chearful after bathing; because so much is thus forced away by the Pressure upon the Vessels, and forcing out their Contents. A Person two Foot under Water, sustains a Weight of Water added to that of the Air (supposing the *Area* of his Skin to be 15 Foot) ≈ 2280 lb; for 2, the Number of cubical Feet of Water, pressing upon a Foot square of the Skin $\times 76$, the Number of Pounds in a cubical Foot of Water $= 152 \times 15$: the suppos'd number of square Feet on the Surface of the Body $= 2280$ lb. *Troy*.

Tho' it be a generally-receiv'd Notion, that Bath-water enters into the Body, and so mixes itself with the Blood, yet few attend to the Manner how it is possible. That Water hath a wonderful Power of insinuating itself into any Bodies, we see by a number of Experiments. Deal-boards will swell against rainy Weather; the watry Particles floating in the Air, by the Pressure of the Air upon them, are forced into the slender Tubes of the Wood, where they meet with no Resistance, the Particles of Air being too large to enter the same. It is certain, however true the contrary may appear to be, that the compounding Particles of Water are less than those of Air, seeing the former will pass thro' several bodies that the other will not. But nothing shews its Force greater than the fastening a Piece of Whipcord, or a strong Rope, of what Length you please, to a Hook or

Staple, and at the Bottom of the Cord hanging any Weight short of what will break it, tho' ever so great; for in this Case the Weight will rise by moistening the Sides of the Cord by a wet Sponge, whereby a few Particles of Water may overcome any finite Resistance, if the Cord would bear it. Now since there is but a little Quantity of Water, and that driven into the Sides of the Cord, with a Force no greater than the Weight of a Cylinder of Air incumbent upon the Water, therefore must the Water act by some Property whereby its Force is greatly augmented, and that can be no other than that of a *Cunæus*: and the Forces of Wedges are to one another reciprocally proportional to the Angles their Edges make; but in Spheres, the greater or lesser Degree of Curvity is to be considered as their Angles, when Spheres are consider'd as Wedges; and the Degrees of Curvity in Spheres are reciprocally as their *Radii*. Now the Particles of Water being so infinitely small, less by much than those of Air, must, when acting as Wedges, have their Powers infinitely increased, so as to overcome any finite Resistance. Now let the Resistance the Water meets with in entering into our Bodies, be what it will; yet 'tis hard to believe it is greater than what is mentioned, which yet a little Quantity of Water will overcome. The Experiments usually made to know the Force of Water in penetrating into membranous Substances, are generally with the Skins of dead Men, or Beasts, and therefore not so decisive as if made upon such as are alive: The only Difference then being, that in the Living, Steams or Vapours are continually raised into the Air thro' the Pores of the Skin in insensible

sible Perspiration; which is not so in those that are dead: these Vapours, tho' raised with a considerable Force, are yet unable to withstand the *Impetus*, with which Water endeavours to insinuate itself into contiguous Bodies, being so great as above explained. And tho' the Quantity of perspirable Matter is very great in 24 Hours, being $\frac{1}{8}$ of the Meat and Drink a Man takes in a Day; yet if we compute the Quantity that expires from any part of the Skin, in a given time, we shall find it too little by far to hinder the Entrance of Water into the Body when we go into a Bath. For it hath been demonstrated, that the Matter of insensible Perspiration in a Minute is the 1200 Part of the Place it comes from, that is, \in i. of the Skin perspires $\frac{1}{1200}$ of a Scruple in a Minute, and consequently 3 i. of the Skin perspires $\frac{1}{400}$ of a Dram in a Minute. Now suppose a square Inch of the Skin to weigh 3 i. then a square Inch perspires $\frac{1}{1200}$ of a Dram in a Minute; but a square Inch of the Skin is pressed upon when we bathe, more than in the open Air, equal to 96 Drams. For we may conclude that our Bodies, taking one Part with another, are two Foot under Water in bathing; so that every square Inch of the Skin must bear the Weight of 24 cubical Inches of Water equal to 96 Drams; for a cubical Inch of Water being 3 iv. $\frac{3}{4}$, throwing away the Fraction, 24 cubical Inches must be 96 Drams. Now since only $\frac{1}{1200}$ 3 i. of Matter is perspired thro' a square Inch of the Skin in a Minute, therefore is the Elevation of the perspirable Matter resisted by a Weight 115200 times greater than itself; for $1200 \times 96 = 115200$. How great then must be the Celerity with which the perspirable

Matter moves, if we imagine it able to raise a Body 115200 heavier than itself? Thus would it be, if the whole Quantity of perspirable Matter evacuated in a Minute, was to exert its Force at once upon the incumbent Weight of Water; but it is so far from doing that, that if the Exhalation of the Steams be not continual, as the Pressure of the Water is, yet the Intervals betwixt the times they are propelled from the Body, are very short. Suppose 60 of them in a Minute, being about the Number of Pulses that a healthful Man's Artery beats in the same Time: then will the Quantity of Vapour, which exerts its Force at once against the incumbent Water, be sixty times less than first assigned, which being multiplied by $1200 = 72000$, the Number of Parts into which a Dram of perspirable Matter is divided, one Part only of which exerts its Force against 96 Drams of Water in a Second: so that the perspirable Matter that rises every second, must raise a Weight of 6912000 times greater number than itself, if it resist the Entrance of the incumbent Water, for 90, the Number of Drams of Water incumbent upon an Inch square of the Skin, multiplied by 72000, the Number of Parts into which a Dram of perspirable Matter is divided, $= 6912000$, the Difference between the Quantity of Matter perspired in a Second, and the Quantity of Water by which its Motion is resisted. From the whole of which, it is beyond dispute that Bath-Waters enter into and mix with the animal Juices in bathing. But for a further Improvement of such Knowledge, we must leave it to those who professedly treat on the Subject.

Bechica, from *ἐχττω*, *tussio*, to cough, are Medicines to occasion Expectoration, and ease Coughs that way, or by thickning a sharp Rheum prevent the Irritations to cough.

Benedictus, signifying Blessed, was a Term anciently much used for the milder Purges, as to *Rhubarb* and the like; and since by the Moderns it hath been applied not only to some officinal Compositions of like Virtue, but also to those of different Qualities, as the *Vinum Benedictum*, which is an Emetick, and the *Aqua Benedicta* a Dryer, and some others.

Bezoar, from *Pa-zahar*, in the Persian Language signifying a Destroyer of Poison, whence it is applied to many things supposed to have such Virtues; as *Bezoar Animal* is applied to the Liver and Heart of Vipers, *Bezoar Mineral* to a Chymical Preparation, and so to many oether things, according to the Conceit and Pleasure of their Contrivers: But the Epithet *Bezoartick* is now given to many things out of more lucrative Considerations, as it seems to bespeak them of an uncommon Value, because the *Bezoar* vended in the Shops bears an extravagant Price, and is insinuated by this Term to have a Share in those Compositions to which it is applied. There are two principal kinds of what is supposed natural *Bezoar*, the oriental and occidental, both being a Sort of Stones of a round or oval Figure, and said to be found in the Maw or Stomach of particular Animals, as some Species of Goats, Porcupines, &c. The Oriental *Bezoar* is most esteemed, and bears by much the highest Price; but those who have been at most Pains to examine it, will by no Means allow that its medicinal Virtues are answerable to its Price.

And to say the Truth, as 'tis now generally among the Apothecaries, reputed of little Significancy in Medicine, they have a Way to counterfeit its fine tinging greenish Colour so artfully, as to impose upon very discerning Persons.

Benign Disease, is when all the usual Symptoms appear in the Small Pox, or any acute Disease, favourably, and without any Irregularities, or unexpected Changes.

Bibitorius Musculus. See *Adductor Oculi*, which is the same.

Bicaudalis. *Bidloo* gives this Name to a Muscle of the Ear.

Biceps Cubiti, from *bis*, twice, and *caput*, a Head; because it has two Heads, of which one rises from the upper Edge of the Cavity of the Head of the *Scapula*. This Head is round and tendinous, and is enclosed in the Channel in the Head of the *Humerus*. The other arises from the *Processus Coracoideus*; it is broad and tendinous, and both unite about the Middle and Forepart of the Arm, and make one Belly, which is inserted by a strong and round Tendon, into the Tuberosity, at the upper End of the *Radius*. Some of the Fibres of this Tendon form a large and thin *Aponeurosis*, which covers all the Muscles of the *Radius* and Fingers externally. Care ought to be taken in Blood-letting, not to cut across, but according to the Length of the Fibres of this *Aponeurosis*. This, with the *Brachialis internus*, bends the Arm.

Biceps Femoris, is a Muscle of the Leg, with two Heads, one coming from the Tuberosity of the *Ischium*, and the other from the Middle of the *Linea Aspera*; both which join together, and are inserted by one Tendon into the superior and external Part of the *Perone*. Its Use

is to help to bend the *Tibia*; and is likewise employ'd in turning the Leg, together with the Foot and Toes, outward, when we sit down.

Bicornis, two-horned, is the same as the *Extensor Carpi*; which see.

Bifurcated, is said by *Anatomists* of such Vessels and Parts as divide into two Branches.

Bile, is a thick, yellow, bitter Liquor separated in the Liver, collected in the Gall bladder, and discharg'd into the lower End of the *Duodenum*, or beginning of the *Jejunum*, by the common Duct. Its Use is to sheathe or blunt the Acids of the Chyle; because they being entangled with its Sulphurs, thicken it so that it cannot be sufficiently diluted by the *Succus Pancreaticus*, to enter the lacteal Vessels. This appears not only from the *Analysis* of the Bile, which yields more of a lixivious than of a volatile alkaline Salt; but likewise from what has been observed, that of the great Quantity of acid Salts amongst the Aliments in the Stomach, there never could be found any in the Chyle after it had passed the *Duodenum*; because some Chyle is almost always passing thro' the *Duodenum*, therefore it was necessary that the Bile likewise should be continually poured into it from the *Ductus Hepaticus*. In a Dog, whose *Ductus biliaris communis* was near as big as a Man's, Dr. Keil says he has gather'd it at the rate of two Drams in one Hour. But because a greater Quantity of Aliments require a greater Quantity of Bile, therefore according as the Stomach is more or less distended with Food, it presses out of the Gall-Bladder a proportionable Quantity of Gall to be mixed with the Chyle in the Guts. See *Liver*.

Biolychnium, from βίος, *Vitalis* Life, and λύχνιον, *Lumen*, Light; is a Term much used by some Writers to signify the same as *vital Flame*: but it is too figurative an Expression to convey any clear and determinate Idea.

Bismuth, is often used for the same as *Marchasite*; but properly signifies a hard, white, brittle mineral Substance, of a metalline Nature found at *Misnia*, tho' supposed to be only a recementitious Matter thrown off in the Formation of Metals, as unfit to enter their Composition. There are some however who esteem it a Metal *sui generis*; tho' it usually contains some Silver. Its medicinal Virtue is much the same with that of the Dross of Lead; being seldom used but in external Forms.

Bittern, a very bitter Liquor, which drains off in the making of common Salt, and used in the Preparation of what goes by the Name of *Epsom Salt*.

Bitumen, in general, signifies any fat, earthy, or mineral Substance, of which there are several kinds; for which see the *Dispensatory*, and the Writings of Naturalists.

Biventer: A Muscle is called so, that is divided into two Bellies, from *bis*, twice, and *Venter* a Belly.

Bladder. This is situated between the Duplication of the *Peritonæum*, in the lower Part of the *Abdomen*, between the *Os sacrum*, and the *Os Pubis*, above the straight Gut in Men, and in the Neck of the Womb in Women. It is tied to the Navel by the *Urachus* degenerated into a Ligament, its Sides to the *Umbilical Arteries*, and its Neck to the *Intestinum Rectum* in Women. It is composed of three Coats: the first is a Covering of the *Peritonæum*:

the second is composed of muscular Fibres, which run irregularly several ways; and the third, which is full of Wrinkles for facilitating its Dilatation, is both glandulous and nervous. Its Glands separate a viscous and slimy Matter, which defends it from the Acrimony of the Salts in the Urine. Around its Neck there goes a small Muscle, called *Sphincter Vesicae*, which contracts the Orifice of the Bladder, that the Urine may not run out, but when it thrusts open the Passage, by the Contraction of the second Coat of the Bladder, which is therefore called *Detrusor Urinae*. The Blood-Vessels of the Bladder are Branches of the *Hypogastricks*. Its Nerves come from the *Intercostals*. And its Use is to be a Reservatory of the Urine, that it may not incessantly run from us, as it is separated in the Kidneys.

Blood. By this some understand not only the Fluid in the Veins and Arteries, but likewise that in the Lymphaducts, Nerves, or any other Vessel of the Body; because they are all Parts of the Blood separated from it by the Force of the Heart, and many of them by the animal Mechanism return to it again after performance of their destined Task: And in this Acceptation it is taken in the Calculations of its Quantity in a human Body, and its Velocities; which because it is of the utmost Moment to understand, we shall give it from the best Authors.

The Ventricles of the Heart are each capable of receiving an Ounce of Blood, or more; and therefore being full in their Diastole, we may suppose that they throw out at least one Ounce of Blood each Systole. The Heart contracts about 4000 times in an Hour more or less, ac-

cording to the different Temperaments, Sexes, and Ages; and therefore there pass thro' the Heart every Hour, 4000 Ounces or 25 lb. weight of Blood. Now the common Opinion is, that the whole Mass of Blood does not exceed 25 lb. and therefore according to this Allowance, a Quantity of Blood, equal to the whole Mass, passes thro' the Heart ten times in an Hour, that is, about once every six Minutes. If the Heart contracts eighty times in a Minute, then 25 lb. weight of Blood passes thro' its Ventricles once in five Minutes, or 12 times in an Hour. Now having the Number of Pulses in any determinate Time, the Quantity of Blood thrown out at the left Ventricle of the Heart every Pulse, and the Diameter of the *Aorta*, it will be easy to find with what degree of Celerity the Blood moves thro' the *Aorta*: For the Celerity with which a Fluid runs out at any Orifice, uniformly, and always running in the same Quantity, is equal to the Velocity of a Body which describes a Space of the same Length with that of a Cylinder, whose Basis is equal to the Orifice, and whose Magnitude is equal to the Quantity of Fluid that runs out in the same Time. Now suppose the Heart contracts eighty times in a Minute, and that each Systole throws into the *Aorta* an Ounce of Blood, which is equal in bulk to 1,659 Inches, and consequently 80 Ounces are 132,72 Inches; the Diameter of the *Aorta* is found to be 0,73 Parts of an Inch, and therefore its Orifice is 0,4187; by which if 132,72 be divided, the Quotient 316 Inches, or 26 Feet, gives the length of a Cylinder, or the Space thro' which the Blood moves in a Minute, supposing it were constantly going out of the Heart

Heart with the same Velocity: but because of the Diastole of the Heart, which is at least half the Time of Pulsation, there go out 80 Ounces in half a Minute, and consequently the Velocity of Blood is double, as it moves at the Rate of 52 Feet in a Minute. Now, because the Sum of the Sections of the Branches of an Artery, is always greater than that of the Trunk, the Velocity of the Blood must constantly decrease as the Artery divides into more Branches. The exactest Proportion of the Branches to their Trunks, found by measuring an Artery of the Thigh, injected with Wax, is as 12387 to 10000; and consequently the greatest Velocity of the Blood will be to the least as 5233 to 1; or the Blood moves 5233 slower in some capillary Arteries, than it does in the *Aorta*. The Blood is received from the Arteries into the Veins, where it still moves slower as it returns to the Heart again. The Arteries are to the Veins as 324 to 441, and consequently the Blood moves in the Veins above 7116 Times slower than it does in the *Aorta*. The further the Blood moves from the Heart, the slower it returns; and all the Blood which at the same Time is thrown out of the Heart, does not return at the same Time to it again, but the Times are directly as the Spaces the Blood runs over before it returns to the Heart again, and reciprocally as the Velocities; and consequently some Parts of the Blood may be some thousand times longer in returning to the Heart than others; and there is no Time when all the Blood can be said to have only once circulated; but if there were any such Time, the Quantity of Blood in the Body must be first determined, which is very

difficult to do, and not yet agreed upon by hardly any two Persons. Bleeding to Death can never give the Estimate of its true Quantity; because no Animal can bleed longer than while the great Artery is full, which will be longer or shorter as the wounded Artery is smaller or greater; and the *Aorta* must always be the first Vessel that empties. The most certain way, in Dr. Keil's Opinion is, by finding what Proportion the Cavities of the Vessels, of which the whole Body is composed, bear to the Thickness of the Coats. This in the Veins and Arteries may be exactly found; but in the other Vessels we only know the Quantity of Fluid they contain, by carefully evaporating as much as possible. Thus the Dr. found the Fluids are to the Vessels,

$$\text{In the } \left\{ \begin{array}{l} \text{Arteries} \\ \text{Veins} \\ \text{Muscles} \\ \text{Nerves} \\ \text{Bones} \end{array} \right\} \text{ as } \left\{ \begin{array}{l} 1,7 \\ 15,6 \\ 3,6 \\ 3 \\ 1 \end{array} \right\} \text{ to } 1.$$

The least of which Proportions shews the Liquors to be one half of the Weight of the Body; and if a Calculation be made on the Proportion of the Blood in the Arteries to their Coats, in a Body weighing 160 Pounds, there will be found 100 Pounds of Blood.

Body: This, in a strictly physical Sense, is every thing that is extended and solid, that in it self has no Power of Motion, and acts only by external Impulse. And all that relates to the Knowledge of this under its various Modifications and Appearances thro' the whole Creation, is the Subject of Physicks, or natural Philosophy; and so far particularly as concerns the Oeconomy of a human Body, and the Regulations

of its Disorders, is the Province of Medicine, and gives its Professors, by way of Preheminence, the Title of Physicians.

Bolt-head, is a bellied Glass that rises up with a long cylindrical Neck, much slenderer than the Body, being nearly of the same Make with a Glass-egg.

Bolus, strictly signifies a fat Earth; whence it is applied to several kinds of that Production in Medicine, particularly the *Armenian Earth*, which by way of Preheminence comes now to be understood by the Appellation of *Bole*, without giving it any other Distinction. It is also used for an extemporaneous Form of one Dose only, and of the Consistence of an Electuary.

Bones: They are made up of hard Fibres, tied one to another by small transverse Fibres, as those of the Muscles are. In a *Fœtus* they are porous, soft, and easily discern'd. As their Pores fill with a Substance of their own Nature, so they increase, harden, and grow close to one another; but when their Interstices are full of such Particles, then they are arrived to their utmost Extent, Hardness, and Solidity; and their Blood-Vessels being compressed on all Sides, bring no more Blood than what is sufficient to supply the Places of their abraded Particles. They are all spongy and full of little Cells, or are of a considerable firm Thickness, with a large Cavity, except the Teeth; and where they are articulated to one another, they are covered with a thin and strong Membrane called the *Periosteum*. Each Bone is much bigger at its Extremities than in the Middle, that the Articulations might be firm, and the Bones not easily put out of Joint: but because the Middle of the Bone should be strong,

to sustain its allotted Weight, and resist Accidents, the Fibres are there more closely compacted together, supporting one another; and the Bone is made hollow, and consequently not so easily broken, as it must have been, had it been solid and smaller: For of two Bones of equal Length, and of equal Numbers of Fibres, the Strength of the one to the Strength of the other, will be as their Diameters. See *Skeleton*.

Borax, an artificial Salt prepared from Sal-armoniac, Nitre, calcined Tartar, Sea-salt and Alum, dissolved in Urine. 'Tis principally to solder Metals withal; and sometimes an uterine Ingredient in Medicine. See the *Dispensatory*.

Borborugmus, is used to express those Rumblings in the Bowels, which arise from Flatulencies, and pass from one Place to another with Noise.

Botany, from *βοτάνη*, *Herba*, an Herb, is that Part of the Art of Medicine, which describes and enumerates the several Virtues of Plants. And he who is skilful in this, is called a

Botanist, a Person skilful in Plants.

Brachæus externus, a Muscle which arises about the Middle and posterior Part of the *Humerus*, which with the *Musculus longus* and *brevis* joins in Fibres; and being externally tendinous, they cover all the Elbow, and are inserted into the *Olecranium*.

Brachæus internus, is a Muscle that lies partly under the *Biceps*; it arises by a fleshy Beginning from the middle and internal Part of the *Humerus*, and is inserted into the upper and fore-part of the *Cubitus* by a very short but strong Tendon.

Brain. The whole Substance of the Brain is divided into two Parts: that

that which lies mostly in the fore-part of the Skull, is properly called the *Cerebrum*; and that which lies on the back-part, under the hind-part of the *Cerebrum*, is called the *Cerebellum*. Both the one and the other are contained in the *Meninges* and the *Cranium*, as in a Box or Case of Bone, that nothing may hurt their tender Substance, which is soft. The *Cerebrum* is of a round Figure; it is divided by the first Process of the *Dura Mater* into the right and left Side. Its external Surface resembles the Turnings and Windings of the Intestines. In the *Cerebrum* we distinguish two different Substances; the external, which is of an ashy Colour; and the internal, which is of a white Colour. Its external Substance is called *Substantia Corticalis*, or *Cinericia*; it is soft, glandulous, and of the Colour of Ashes. Its internal, called *Substantia Medullaris*, is firmer, white, and fibrous; of it the Nerves are made, and it reaches to the Extremity of the *Medulla Spinalis*, where it divides into Fibres. The external Substance of the Brain, by its Circumvolutions, resembles the small Guts; and in the Middle of each Circumvolution, is the beginning of the Medullary Substance; so that the Cortical Substance is always on the external Side; and the inner *Lamina* of the *Pia Mater* is co-extended with the Cortical Substance, which it immediately covers every where. *Malpighi*, who has nicely examined this Cortical Substance, says, that it is nothing but a Heap of little oval Glands, which receive the Capillary Branches of the Veins and Arteries which belong to the Brain, and which send out an infinite Number of Fibres, that all together make up the Medullary Substance; which going out of the *Cra-*

nium, forms the Nerves and *Medulla Spinalis* contained in the *Vertebræ*. The internal Substance of the right and left Side of the Brain coming to join one another, leave a Space between them, which forms the three Ventricles, or *Centrum Ovale*, the upper Part or Covering of this Space, is called the *Corpus Callosum*; the Bottom of this Space is the internal Substance of the two Sides of the *Cerebrum*, gathered together, as it were, in two Bundles, which are called *Crura Medullæ oblongatæ*; upon them are the Protuberances, called the *Corpora Striata*, and the *Thalami Nervorum Opticorum*. These *Crura* uniting, make one Body, called the *Medulla oblongata*, upon which there are four Prominences, called *Nates* and *Testes*; and behind these Prominences the internal and medullary Substance of the *Cerebellum*, being also divided into two Bundles, forms upon each side of the *Medulla oblongata*, three more Protuberances, and then it passes out of the *Cranium* into the *Vertebræ*, where it gets the Name of *Medulla Spinalis*. This is a general Idea of the Structure of the Brain: As for its Parts,

Below the Depth of all the Circumvolutions of the Brain, the first thing that appears immediately under the first Process of the *Dura Mater*, is the *Corpus Callosum*, or the Covering of the two lateral Ventricles, formed by the Union of the Medullary Fibres of each side. This being laid aside, the two lateral Ventricles appear; they reach from the fore-part of the *Cerebrum* backwards: they are pretty broad in their hind-part, but they grow narrower towards the fore-part. They are divided into the right and left Ventricle by a thin transparent

Membrane, which comes from the under Side of the *Corpus Callosum*, and is extended to the *Fornix*, which is in the Bottom of the Ventricles: this Membrane is called *Septum lucidum*; it is thought to be a Production of the *Pia Mater*, which covers all the Sides of the Ventricles.

In these Ventricles there are four Prominences, two in each Ventricle: the foremost two are called *Corpora Striata*, which are the Tips of the *Crura Medullæ oblongatæ*; they are oblong, and their Extremities come down upon the Sides of the two other Prominences; they are of a cineritious Colour without, but in their internal Substance there are many white Streaks, which are the medullary Substance mixt with the Cineritious and Glandulous. They are, at it were, tied together by a medullary Process, called *Commissura crassioris Nervi æmula*. The two other Prominences are called *Thalami Nervorum Opticorum*, because the Optick Nerves rise out of them; they are medullary without, but a little cineritious within; they are of an oblong Figure upon the upper Part of the *Crura Medullæ oblongatæ*; between them there is a medullary Tract which encompasses them, called *Limbi posteriores Corporum striatorum*: Upon them also lies the *Plexus Choroides*, made of Veins, Arteries, and little Glands. This *Plexus* reaches from one lateral Ventricle to the other, passing under the *Fornix*, above the third Ventricle: It sends a Branch to the fourth *Sinus* of the *Dura Mater*. In the middle, above the *Corpora Striata* and the *Thalami Nervorum Opticorum*, there lies a thin and broad Production of the medullary Substance, which comes from the Fore-part of the Ventricle by two

Roots, and reaches to the hinder-part, where it ends by two other Protuberances, called its *Crura*, which cover a great Part of the *Thal. Nerv. Opt.* This Production is called the *Fornix*, because it is a Covering to the third Ventricle. Under the *Fornix* there is a *Rima* between the *Crura Medullæ oblongatæ*, which is the third Ventricle, it being a little dilated in its third Part; there is a Hole that goes down to the *Glandula Pituitaria*; this Hole is the Entry to the *Infundibulum* or Funnel, so called because of its Figure: It is a small Conduit made of the medullary Substance, cover'd with the *Pia Mater*; it pierces the *Dura Mater* upon the Basis of the Skull, and sinks into the Substance of the *Glandula Pituitaria*, which is situated in the *Cella Turcica*, closely covered with the *Pia Mater* and *Dura Mater*; it is of a harder Substance than the other Glands of the Body; it receives the End of the *Infundibulum*, which carries a Liquor from the Ventricles into this Gland, which is surrounded by the *Rete Mirabile*, or a *Plexus* of some Branches of the *Carodital* and *Cervical* Arteries, which break the Impetus of the Blood, and abate the Velocity as it passes thro' the tender Substance of the Brain. In the hinder Part of the third Ventricle there is another small Hole called *Anus*, which leads into the fourth Ventricle in the *Cerebellum*. In the upper Part of this Hole is situated the *Glandula Pinealis*, about the Bigness of a Pea; it is composed of the same Substance as the rest of the Brain, and for the same Use. It is tied by some Fibres to the *Nates*, which are two Prominences of the *Medulla oblongata*, situated above the fore-part of that Conduit, which leads from the *Anus* to the fourth Ven-

Ventricle : they are of an oval Figure, pretty big, and immediately behind them are two other Prominences of the same Figure and Substance, called *Testes*, both covered with a Net of Blood-vessels. There is a small transverse medullary Protuberance behind the *Testes*, from which the pathetic Nerves arise. The Conduit which reaches from the *Anus* to the fourth Ventricle, is in that Part of the *Medulla oblongata*, which is betwixt the *Cerebrum* and the *Cerebellum*, called the *Isthmus*. The upper Part or Cover of this Conduit, which is betwixt the *Testes* and the foremost vermicular Process of the *Cerebellum*, to which two it is tied at its two Ends, and to the Processes which come from the *Cerebellum* to the *Testes* at its Sides, is called *Valvula major*; 'tis of a medullary Substance; its Use is to keep the *Lympha* from falling out above the Nerves in the Basis of the Skull. These are all the Parts of the *Cerebrum*.

The *Cerebellum*, which is much less, is also composed of a cortical and a medullary Substance; its Superficies makes not Turnings and Windings as that of the *Cerebrum*; but its Foldings are straight, and resemble the Segments of Circles, or the Edges of Plates laid on one another, and these Segments are largest in its Middle, and they grow less as they approach its fore and hind Part, where they seem to resemble two Worms, and therefore are called *Processus Vermiformes*. The medullary Substance of the *Cerebellum*, as it approaches the *Medulla oblongata*, gathers together, and then divides equally into two Bundles, which are joined to the two Sides of the *Medulla oblongata*; as they separate, they leave a little Space upon the upper Side of the

Medulla, which is called the fourth Ventricle; and its further End, because of its Resemblance, *Calamus Scriptorius*. The Top of this Ventricle is covered with several Blood-vessels woven like a Net. The medullary Substance of the *Cerebellum* makes three Processes upon each side of the *Medulla oblongata*: The first two go on each Side to the *Testes*; the *Valvula major* is betwixt them. The second two are pretty broad, they go streight down on each Side, and meet on the under-side of the *Medulla*: they make that Protuberance called *Processus Annularis*. And the third goes backwards on the upper-side of the *Medulla*; they make it look bigger, being like two Cords upon its Sides.

This is all that is remarkable in the *Cerebrum*, *Cerebellum*, and upper Side of the *Medulla oblongata*; but upon turning the Brain, may be distinctly seen the Rise of all the Nerves, the *Infundibulum*, two white Spots behind it, the *Crura Medullæ oblongatæ*, one on each Side the *Cerebrum*; where they join, may be seen the *Processus annularis*, or *Pons Verolii*: And beyond that there are two Prominences called *Corpora Pyramidalia*, they are about an Inch long, and on each Side of them towards their lower End, there are two more, which, because of their Figure, are called *Corpora Olivaria*; and then the *Medulla oblongata* goes out of the Skull, being contain'd in the *Pia* and *Dura Mater*.

The Vessels of the Brain are Nerves, Arteries and Veins. The Nerves are ten Pair; the first Pair are the *Olfactory* Nerves, rising from the Basis of the *Corpora striata*, and passing thro' the Holes of the *Os Cribriforme*. The second Pair are the Optick Nerves; they arise partly from the Extremities of the *Corpora striata*,

striata, and partly from the *Thalami Nervorum Opticorum*, which they almost embrace; they unite together above the *Cella Tercica*, and immediately dividing again, they pass thro' the two foremost Holes in the *Os Sphænoïdes*. The third Pair are the Movers of the Eyes; they rise on each side the *Infundibulum* from the *Medulla oblongata*, and go out at the *Foramina Lacera*. The fourth Pair are the *Pathetick Nerves*; they rise from the small medullary Cord which is behind the *Testes*, and pass thro' the *Foramina Lacera*. The fifth Pair rise from the fore-part of the *Processus Annularis*, they give Nerves to the *Dura Mater*; each of them divides into three Branches; the first passes out at the *Foramen Lacerum*, the second at the third Hole of the *Os Sphænoïdes*, and the third thro' another Hole of the same Bone. The sixth Pair rises from the Sides of the *Processus Annularis*, and goes out at the *Foramen Lacerum*; but just before it goes out, it casts back a Branch which makes the Root of the intercostal Nerve; this goes out at the Canal thro' which the *Carotidial Artery* enters. The seventh is the Auditory Nerve; it rises from the hind-part of the *Processus Annularis*, and enters the Hole in the Process of the *Os Petrosum*. The eighth Pair is the *Par vagum*; it rises from the *Medulla oblongata* behind the *Processus Annularis*, by several Threads which join in one; and it goes out at the same Hole the lateral *Sinus's* open into the *Jugulares*. The ninth Pair rises from the *Processus Oligares* of the *Medulla oblongata*, and passes out at a Hole in the occipital Bone, which is proper to it self. The tenth and last Pair rises by several Fibres from the Beginning of the *Medulla Spinalis*; from thence ascending within the

Occiput, it turns, and passes out at the same Hole thro' which the *Vertebral Artery* enters, between the first *Vertebræ* and the *Occipital Bone*, running thro' a *Sinus* in this *Vertebra*. These are the Nerves of the Brain; which further see in their various Ramifications all over the Body, under the Word *Nerve*.

The Arteries are the two internal *Carotidales*, which pass thro' two oblique Canals in the *Ossa Petrosa*; as soon as they enter the Skull, they give a Branch which enters the Orbit of the Eye; they give Branches which make the *Rete mirabile*, then they pierce the *Dura Mater* on each Side of the *Infundibulum*; they communicate with the cervical Artery, and they give Branches to the *Plexus Choroides*, and are distributed thro' all the Substance of the Brain. Their Branches make many Turnings and Windings upon the *Pia Mater*, and at last are lost in the little Glands of the cortical Substance of the Brain. The two *Vertebral Arteries* which come out of the Holes in the transverse Processes of the *Vertebræ*, enter the large Hole of the *Occipital Bone*; they pierce the *Dura Mater*, and go along the under-side of the *Medulla oblongata*; then they cast back two Branches for the Spinal Arteries, and at the *Processus Annularis* they join in one Branch called the cervical Artery; this communicates with the two *Carotides*, by two Branches called the communicant Branches; then it divides again into two, which give Branches to the *Rete mirabile* and *Plexus Choroides*; and they are afterwards distributed thro' all the Substance of the Brain, ending in the cineritious Substance, as the *Carotidales*.

The Veins enter not the *Cranium* at the same Hole that the Arteries do,

do, because upon any Turgescence of the Blood, the Swelling and Pulse of the Arteries would compress the Veins against the bony Sides of their Passage, and so cause a Stagnation and Extravasation of the Blood in the Brain, which would be the Destruction of the whole Machine. Neither do the Veins run along the Sides of the Arteries in the Brain, as they do thro' all the rest of the Body; but they rise from the Extremities of the Arteries, in the cineritious Substance, and go straight to discharge themselves into the *Sinus's* of the *Dura Mater*. The Blood which is brought into the Brain by the carotidal and vertebral Arteries, is separated by the Glands which make the cineritious and cortical Substance of the Brain, from its finest and most subtile Parts, called animal Spirits, which are received from the Glands by the Fibres of the medullary Substance, which is the beginning of the Nerves. Each Nerve therefore is a Bundle of very fine and small Tubes, of which some are no bigger than the hundredth Part of an Hair; and these Tubes are the excretory Ducts of the cineritious Substance. This does not only appear from the Structure of the Brain; but by reason likewise we are assured, that there is such a Fluid as we call animal Spirits running in the Nerves: For seeing all Sensation is performed by the Nerves, it must be done either by the Substance of the Nerve, or the Fluid which is contained in the Nerve: If by the Substance of the Nerve, it must be by a Vibration from the Part upon which the Impression is made to the Brain. Now that there can be no Vibration from the Impression of external Objects upon animal Nerves, which are slack, and surrounded all along by

other Bodies, is evident; and therefore Sensation must be made by the Fluid in the Nerves. The Motion of this Fluid is not swift and rapid, as is generally supposed, but slow and languid, seeing all its Motion proceeds from the Dilatation of the Arteries compressing the soft Substance of the Nerves, and from the Force by which it is thrust thro' the Glands of the Brain: And when the Nerves are full of this fine Fluid, the Impressions of Objects may be communicated to the Brain without any quick Motion in the animal Spirits, either by retarding or stopping their progressive Motion, or by causing an Undulation. If to these be added, that the animal Spirits must be confined within their own proper Channels, as well as the other Fluids of the Body, the many Hypotheses contrived by *Willis*, and others, must needs come to nothing.

The nervous Fluid, or animal Spirits, undoubtedly consist of by far the smallest Particles in the Blood, as appears by the Minuteness of their secreting Glands: and therefore they not being formed by the Cohesion of other Particles, might have been separated any where. Yet the animal Oeconomy receives a great Advantage by the distant Station of the Brain from the Heart; for if it had been placed nearer, and received the Blood, still divided into its smallest Particles, by the Force of the Air in the Lungs, such Particles might have entered the Glands, as afterwards cohering to one another, might have obstructed such extremely narrow Channels. Now the Brain being placed at such a Distance, the Particles, that by their attractive Power from Corpuscles, will have sufficient time to coalesce, and their Magnitude will hinder

hinder their entering into the Glands. For if it should happen that these Particles should enter the Glands, and there unite together, they would then obstruct the Passage to the Nerves, and produce Apoplexies, Palsies, &c. the Particles of which the animal Spirits consist being of such an extreme Fineness, that their Quantity can bear but a small Proportion to the other Fluids in the Blood; and consequently there was a necessity of a prodigious Number of Glands to separate them from the Blood: and this is the Reason of the great Bulk of the Brain.

Branchus, a Species of a Catarrh affecting the Jaws, Throat, and *Aspera Arteria*. See *Catarrh*.

Breasts: The Substance of the Breast is composed of a great Number of Glands of an oval Figure, which lie in a great Quantity of Fat. Their excretory Ducts, as they approach the Nipple join and unite together, till at last they form seven, eight, or more small Pipes, called *Tubuli Lactiferi*, which have several cross Canals by which they communicate with one another, that if any one of them be stopped, the Milk which was brought to it might not stagnate, but pass thro' by the other Pipes, which all terminate in the Extremity of the Nipple. They have Arteries, and Veins from the Subclavian and Intercoastal. They have Nerves from the *Vertebral* Pairs, and from the sixth Pair of the Brain. Their Use is to separate the Milk for the Nourishment of the *Fœtus*. The Tubes which compose the Glands of the Breasts in Maids, like a Sphincter-Muscle, contract so closely, that no Part of the Blood can enter them; but when the Womb grows big with a *Fœtus*, and compresses the descending Trunk of the great Artery, the Blood flows in

a greater Quantity, and with a greater Force, thro' the Arteries of the Breasts, and forces a Passage into their Glands, which being at first narrow, admits only of a thin Water; but growing wider by degrees, as the Womb grows bigger, the Glands receive a thicker *Serum*; and after Birth they run with a thick Milk, because that Blood which before did flow to the *Fœtus*, and for three or four Days afterwards by the *Uterus*, beginning then to stop, does more dilate the mamillary Glands. In Men they are very small and chiefly for Ornament; tho' some physical Histories give Relations of those who have had Milk in them.

Bregma, the same as *Parietalia Offa*. See *Cranium*.

Breve Vas. See *Vas Breve*.

Brevis Cubiti, is a Muscle that rises from the superior and posterior Part of the *Humerus*; which joining its fleshy Fibres with the *Brachæus*, *externus* and *longus*, and becoming tendinous, covers the Elbow, and is inserted into the *Olecranium* to extend the Arm.

Brevis Radii, a Muscle that comes from the external and upper-part of the *Ulna*, and passing round the *Radius*, is inserted into its upper and fore-part, below the Tendon of the *Biceps*. This and the *Longus Radii* are called the *Supinatores*; their Office being to turn the Palm upwards.

Brevis Palmaris, lies under the *Aponeurosis* of the *Palmaris*; and arises from the Bone of the *Metacarpus*, that sustains the little Finger, and from that Bone of the *Carpus* that lies above the rest. It goes transversely, and is inserted into the eighth Bone of the *Carpus*. It helps in making the Palm of the Hand concave.

Brodium, is a Term in Pharmacy, signifying the same with *Jusculum*, or the Liquor in which any thing is boil'd. Thus we sometimes read of *Brodium Salis*, or a Decoction of Salt.

Bronchocele, from βρόγχος, *Guttur*, the Wind-pipe, and κήλη, *Tumor*, a Swelling; is a Tumour of that part of the *Aspera Arteria* called the *Bronchus*.

Bronchotomy, from βρόγχος, the Wind-pipe, and τέμνω, *feco*, to cut, is that Operation which opens the Wind-pipe by Incision, to prevent Suffocation in a Quinzy.

Bronchus, is the lower-part of the *Aspera Arteria*, dividing into Branches.

Brygmus, is a certain kind of Convulsions affecting the lower Jaw, and striking the Teeth together, most frequently observed in such Children as are subject to Worms.

Bubo, from βυβών, *Inguen*, is that part of the Groin from the Bending of the Thigh to the *Scrotum*, and therefore all Tumours in that Part are called *Bubo's*; very unjustly of late appropriated to those only which are venereal.

Bubonoccele, from *Bubo*, and κήλη, *Tumor*, a Swelling; is a particular

kind of Rupture, when the Intestines break down into the Groin.

Buccales Glandulae. See *Mouth*.

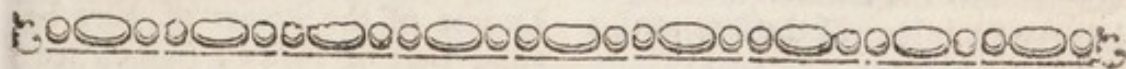
Buccinator, is a Muscle on each side the Face common to the Lips and Cheeks, and makes the inner Substance of the latter; its Fibres run from the *Processus Coronæ* of the lower Jaw to the Angle of the Mouth, and they adhere to the upper-part of the Gums of both Jaws. Thro' its Middle pass the upper *Ductus Salivaris*; by this is contracted the Cavity of the Mouth, and the Meat is thrust forward to the Teeth in Mastication.

Bulbous, are such Plants as have round Roots, as Onions, Tulips, &c.

Bulimy, from βῦς, *Bos*, an Ox, and λιμός, *Fames*, Hunger; is a ravenous Appetite, the same as is expressed also by a Canine Appetite; which see.

Bursalis, is by some given as a Name to that Muscle of the Thigh which *Bartholine* calls *Marsupialis*, from its resemblance in Figure to a Purse, both those Terms importing so much.

Butiga, is an Inflammation of the whole Face otherwise called *Gutta Rosacea*, which see.



C

C*Abala*, is a Term that hath been antiently used in a very mysterious sense amongst Divines; and since, some enthusiastick Philosophers and Chymists have transplanted it into Medicine, importing by it somewhat Magical: but such unmeaning Terms are now justly rejected.

Cacatoria Febris, is a Name given

by *Sylvius* to an Intermittent, accompanied with a Diarrhoea.

Cachectick, is one under a

Cachexia, or a Cachexy, from κακός, *malus*, bad, and ἔξις, *Habitus*, a Constitution, a bad Habit or Constitution; that is, when the *Viscera* are unsound, or the Juices distemper'd.

Cace-

Cacoethes, is used by *Galen* and some others to express an incurable Ulcer, that is render'd so thro' the Acrimony of the Humours flowing to it.

Cacoehymy, from *κακός*, *præ-vus*, depraved, and *χυμός*, *Succus*, Juice, is when the Constitution abounds with vitiated Juices.

Cadmia, a Name for *Lapis Calaminaris*.

Caducus Morbus, is met with in some Authors for the Falling Sickness, most commonly called the Epilepsy.

Cæcum intestinum, or Blind-Gut. It is a Gut four or five Fingers Breadth long, and about the Bigness of a Swan's Quill. It is called *Cæcum*, because it is open only at one End, by which it is tied to the beginning of the *Colon*, to which it seems to be an Appendage; so that the Excrements come in and go out at the same Orifice. Its other End which is shut, is not tied to the Mesentery, but to the right Kidney by means of the *Peritonæum*. Some account it as a second Stomach, whereby the Food, after having detached all its Chyle thro' the *Lacteals* above, undergoes a further Digestion, so as to part with more Chyle thro' the *Lacteals* below it; but the Opinions of the Use of this are various.

Cæment, is used by *Paracelsus* in the same Sense as to calcine after a particular Manner with corrosive Liquors, but more properly by *Hellmont* and some others for luting.

Cæsar, or *Cæsarius*, signifies cutting a Child out of the Womb, either dead or alive, when it cannot otherwise be deliver'd. Which Circumstance, it is said, first gave the Name of *Cæsar* to the Roman Family so called; and is the Foundation for calling a Plaster in our

London Dispensatory, *Emplastrum Cæsaris*, which is composed of Astringents to prevent Abortion.

Calamine, also call'd *Cadmia*, is a Fossile found in many Places, which is used as a great Dryer and Absorbent in outward Applications, as *Cerates* and Plaisters, Collyriums, &c. but is seldom used inwardly.

Calamita; *Styrax* is so called, because it is often put up in Quills.

Calamus Scriptorius: A Dilatation of the fourth Ventricle of the Brain, thus called from its Resemblance of a Pen.

Calcaneus, is the same as *Os Calcis*, the Heel-Bone, which lies under the *Astragalus*, to which it is articulated by *Ginglymus*. Behind it it has a large Protuberance which makes the Heel, and into which the *Tendo Achilles* is inserted.

Calcifragus, signifies Stone-breaking, and is therefore applied to some things having that Quality, as by *Scribonius Largus* to the *Scolopendrium*, and by others to *Pimpernel*, called also for the same Reason *Saxifrage*.

Calcination, is such a Management of Bodies by Fire, as renders them reducible to Powder; for which Reason it is termed Chymical Pulverization. This is the next Degree of the Power of Fire beyond that of *Fusion*; (which see.) For when Fusion is longer continued, not only the more subtle Particles of the Body itself fly off, but the Particles of Fire likewise insinuate themselves in such Multitudes, and are so dispersed and blended thro' out all its whole Substance, that the Fluidity which was first caused by the Fire can no longer subsist. From this Union arises a third kind of Body, which being very porous and brittle, is easily reduced to Powder; for the Fire having

having penetrated every where into the Pores of the Body, the Particles are both hindred from mutual Contact, and divided into minute Atoms; so that they are easily reducible into the finest Powder.

Hence not only the Parts of the Body calcined are much broken and rarify'd, but render'd specifically lighter. For the Gravity of crude Lead, if compared to Water, is as $11 \frac{1}{2}$ to 1; but that of calcined Lead is as 9 to 1. So the Proportion of calcined Copper to Water is but $\frac{7}{11}$; but that of crude Copper is $8 \frac{1}{2}$. The Proportion of white Lead to Lead it self comes out still less, *i. e.* subtriple. Four Ounces of *Regulus of Antimony*, if put into Fusion for an Hour and a half, will gain two Drams and a half; tho' in the mean time a multitude of Effluvia go off in Vapours. Hence the absolute Gravity is increased indeed by Calcination, but the Specifick is lessened; the reason of which is this, that the Particles of the Body, divided by the Fire, and separated from mutual Contact, are diffused into a larger Bulk: But the Particles of Fire, which are much lighter than the calcined Body being every where mixed with it, and dispersed thro' its Pores, lessen the specifick, and increase the absolute Gravity.

But however the Particles of Bodies are divided and separated by Calcination, so as to be deprived of their ancient Appearance; yet many Metals, and some Minerals, whose Parts are mostly homogeneous, don't seem to lose their Nature with their Form. For Gold, Silver, and Quick-silver, cannot be so destroyed by all the calcining imaginable, but that they may with very little trouble be reviv'd. So out of Salt of Tin, the Tin itself may be extracted a-

gain; nay, the Calx of Lead, the most impure of all Metals, returns with ease into its original Form. Thus too not only the *Regulus*, but the very Substance of the Antimony may be drawn both from the Calx and Glafs of Antimony. So that Calcination is but imperfectly perform'd in those Bodies; for a great many Particles seem to be so little changed and destroyed, that as soon as ever they are let loose from this artificial Combination, they reassume their proper and natural Figure. Neither should we omit taking notice of what is of the greatest Moment in all Calcination, that those very Particles, whose attractive Force is strongest, and which contribute most to the Cohesion of Bodies, fly off, and evaporate during Calcination: so that if a great Quantity of such Particles should evaporate, another Body of a very different Form may succeed. For in melting Lead, the Fumes rise in such a prodigious Cloud, that at length they leave behind nothing but a Calx, which has no manner of Resemblance with that Metal. On the other Hand, if Gold and Silver be calcined after the common Method, yet they still retain their ancient Form, because scarce any of the Particles pass off in Vapour. And indeed the Corpuscles which pass off in a calcining Fire, are such as have the largest Surface, and least Gravity; therefore Quick-silver, whose Particles are different, is with the greatest Difficulty reduced to a Calx.

Calidum innatum. The Antients had many vague Notions under this Term; but Geometrical Reasoning has taught us to affix a more distinct Idea hereunto: for by that means we come to know, that it is only that Attrition of the Parts

of Blood, which is occasioned by its circulatory Motion, especially in the Arteries; wherein being propelled from a circular Base towards the *Apex* of a hollow Cone, with a force begun in the Heart, it meets with a double Resistance; that is to say, against the Sides of the Arteries, and from the preceeding Blood. For whereas the Blood contains in it Parts that are fitted to excite Heat, whenever they can get at Liberty, that is, if the Parts inclosing them can be got asunder; and whereas the Parts inclosing such Corpuscles, cannot be got asunder, unless by some *Nisus* of the Parts of Blood with one another; whereby the Attrition and Abrasion of the cohering Particles is produced; it follows that the Heat will be so much the greater, by how much such a *Nisus* and Attrition of the Parts amongst one another is increased. And with the same Resistances (that is, the Sections of the Arteries, and the Quantity of Blood remaining the same) and an increased Force of the Heart, and circular Motion of the Blood, the *Nisus* and Attrition of the Parts of Blood amongst one another must necessarily be increased, both by the preceeding Blood being struck harder upon by the Protrusion of a succeeding Blood coming on with an increased Velocity, and the occasioning thereby also more frequent Strokes against the Sides of the Arteries: by which means an increased Velocity of Blood increases the Heat, and consequently its Heat depends upon its Circulation. From hence it appears, *That at the same distances from the Heart, the Heat of equal Quantities of Blood will be as their Velocities; and, That in the same Velocities of Blood, the Heat will be reciprocally as the Distances from the Heart.* For

since in homogeneal and simple Bodies, nothing else is required to disengage the Particles exciting Heat, but a *Nisus* and Attrition of Parts, produced by the Force of the Heart, to which is always proportional the Velocity of the Blood, and the Reaction or Resistance of the Arteries and antecedent Blood; it follows, that if that Resistance or Reaction is not altered, which it will not be at the same distance from the Heart, then the Heat of the Blood will not be altered, unless by an Alteration of the Impetus or Velocity impress'd upon the Blood from the Heart: that is, as Effects are proportional to their Causes, the Heat of the Blood at the same Distances from the Heart will be proportional to its Velocity. In the same Manner it may be shewn, that if the Velocities impress'd by the Heart are equal, there can be no change in the Heat of the Blood, but from a diversified Resistance or Reaction of the Arteries and antecedent Blood. But the Resistance of the preceding Blood is proportional to its Quantity, and its Quantity is reciprocally proportional to the Distance from the Heart, (for the nearer the Blood is to the Heart, so much the greater will be its Quantity between any given Place, and the Extremity of the Artery) and therefore the Resistance of the Arteries will also be so much the greater, by how much nearer they are to the Heart: for in this case, the Resistance is proportional to the Velocity, and the Velocity of the Blood is greatest at the least Distances from the Heart. Hence the Heat of the Blood may be considered as a Rectangle under the Velocity and the Distance; that is, if in two Persons the Velocity be as three, and the Distances wherein we

we would determine the Heat be as much more in one as in another, that is, as 2 to 1 ; the Heat of one will be 6, and the other 3 ; that is, the Heat of the first will be double the Heat of the second. If the Distances of the first be as 2, and the Velocity as 4, but the Distances of the second as 3, and the Velocity as 1 ; the Heat of the first will be as 8, and of the second as 3, and so the Heat of the first will be more than double the Heat of the second.

Calenture, is a Distemper peculiar to Sailors, wherein they imagine the Sea to be green Fields, and will throw themselves into it if not restrained. *Bonetus* gives an Account of it in *Med. Sept.* as also does Dr. *Stubbs* in the *Philosoph. Transact.*

Calidarium, thus *Celsus* calls that Part of a Bath which was the *Hypocaustum* of the ancient Greeks.

Calix. See *Perianthium*.

Callosity, and *Callus*, signifies a kind of Swelling without Pain, like that of the Skin by hard Labour ; and therefore when Wounds, and the Edges of Ulcers grow so, they are said to be callous.

Calomel, is a Name commonly given to *Mercurius Dulcis*, but it seems at first to have more properly belonged to the *Æthiops Mineral*, from *καλός*, *pulcher*, fair, and *μέλας*, *niger*, black ; for by rubbing that, Ingredients of a pale Complexion are reduced to black : But some will have it given to *Mercurius Dulcis*, from the Authority of a whimsical Chymist, who employ'd a Black in his Laboratory, with a regard to the same Etymology, signifying both white and black, the Medicine answering to the one, and the Operator to the other.

Calva, and *Calvaria*, is the upper Part of the Head, which grows bald the first,

Calx, the same as *Calcanes* ; which see. It is also a Term in Chymistry for any thing that is render'd reducible to Powder, by burning ; the Word signifying Lime, which is so made.

Campanulous, or *Campaniformis*, are those Plants whose Flowers resemble the Shape of a Bell, from *Campana*, a Bell.

Canaliculus Arteriosus, is a Vessel betwixt the Arterious Veins of the Lungs, and the great Artery in *Fœtus*'s ; for it is obliterated in adult Persons : Thro' it the Blood is discharged out of the arterial Vein into the *Aorta*.

Cancer, and *Carcinoma*, is a round, livid, and blackish Tumour, circumscribed with turgid Veins, resembling the Feet of a Crab, (tho' not always) from whence it takes its Name, and is hardly ever cured ; it being the present Fashion rather to let it alone than meddle with it, on account of the ill Success which has hitherto attended the Use and Application of rough irritating Medicines, which always cause it to spend the faster, especially if unskilfully employ'd.

Canicidium : *Drelincourt*, in his anatomical Experiments, uses this Term for the Dissection of Dogs, its Etymology importing as much.

Canine Appetite, is an inordinate extravagant Hunger, to the Degree of a Disease, so that the Person becomes as voracious as Dogs ; whence the Name.

Canini Dentes, are two Teeth in each Jaw, one on each Side the *Incisores*. They are pretty thick and round, and end in a sharp Point. They have each one Root, which is longer than the Roots of the *Incisores*. Their proper Use is to pierce the solid Aliments ; because the Fore-Teeth are not only apt to be

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pulled

pulled outwards by the things we hold and break with them, but likewise because they are less subject to Blows than the *Molares*: therefore above two Thirds of them are buried in their *Alveoli*, or Sockets, by which their Resistance of all lateral Pressures is much greater than that of the *Molares*.

Caninus Musculus, is the same as *Elevator Labii superioris*; which see.

Canthus, is the Corner of the Eye: The internal is called the greater, and the external the lesser *Canthus*.

Capillaments, are those small Threads or Hairs which grow up in the middle of a Flower, and are adorned with little Herbs at the Top. And,

Capillary, or *capillacious Plants*, are such as have no main Stalk or Stem, but grow to the Ground, as Hairs on the Head; and which bear their Seed in little Tufts or Protuberances on the Back-side of their Leaves. And,

Capillary Vessels, are the small Ramifications of the Arteries; so called from *Capillus*, a little Hair.

Capistrum, a Bandage for the Head; so called by Surgeons.

Capital Lees, are the strong Lees made by the Soap-Boilers from Pot-Ashes; which are used in Surgery as a Caustick, and to make the *Lapis infernalis*.

Capital Medicines, are the *Venice-Treacle*, *Mithridate*, &c. so called by way of Pre-eminence; from *Caput*, Head, or Chief.

Caprizans, is by *Galen*, and some others since, used to express an Inequality in the Pulse, when it leaps, and as it were dances, in uncertain Strokes and Periods.

Capsa, strictly signifies a Bag, or Pocket; whence its derivative *Cap-*

sula is applied to many Parts of the Body, having any Resemblance thereunto. As,

Capsula Atribiliaria, called also *Renes Succenturiati*, and *Glandulae Renales*. See *Kidneys*.

Capsula Cordis. See *Pericardium*.

Capsula communis, is a Membrane arising from the *Peritonæum*, and inclosing both the *Vena Porta*, and *Porus Biliaris*.

Capsulae Seminales. See *Vesiculae Seminales*. This Term is also applied to a Chirurgical Instrument for making Issues, which is described by *Aquapendens*, and *Scul-tetus*.

Caput Gallinaginis, a Woodcock's, Snipe's, or Cock's-head; is a kind of *Caruncle*, or spongy Border, at the Extremities, or Apertures of the *Vesiculae Seminales*, to prevent the *Impetus* of the Seed from being sufficient there to dilate the Orifices of the *Vasa Deferentia*, but when assisted by the Compression of the surrounding Parts in Copulation.

Caput Mortuum, dead Head, is the *Residuum* after Distillation, of any kind whatsoever; or Earth, when all the other Principles are separated from it.

Caputpurgia, is a Term arbitrarily made use of by some Writers to express all things which cleanse the Head, by sneezing, or any other Means.

Carabe, is the same with some Authors as Amber.

Carbuncle. This is sometimes used in the same Sense as *Anthrax*, which see; but is more generally taken for that particular Boil, which appears in Pestilential Fevers, and is a red, hard Swelling with great Pain, and a burning Heat. From its Similitude to the Colour of Fire like-

likewise, this Term strictly signifying a live Coal, is sometimes given to a precious Stone of the Ruby kind.

Carcinoma, from *καρκίνος*, *Cancer*, and *τρέφω*, *depasco*, to feed upon; is a particular Ulcer, called commonly a *Cancer*, which is very difficult to cure. A Disorder likewise in the horny Coat of the Eye is thus called by some Writers.

Cardia, signifies both the Heart and the left Orifice of the Stomach, which was by some of the Ancients supposed to have an uncommon Consent therewith. Hence also things which are supposed to influence the Heart immediately as Cordials, are called *Cardiacks*.

Cardialgia, the Heart-burn, a Pain supposed to be felt in the Heart, but more properly in the Stomach, and sometimes rises all along from thence up to the *Oesophagus*; caused by the Acrimony of some explosive Matter in the Stomach, which vellicates, and as it were burns the Fibres which it passes. 'Tis felt most frequently when the Stomach is somewhat empty, and in that case may be cured by eating and drinking. Otherwise, the Specific for it is supposed to be Chalk, Crabs-Eyes, or the like terrestrial Alkalies, taken in a large Dose, with a Glass of Water: But the most powerful Remedy for it, seems to be the Powder of the inward Coat of a Fowl's Gizzard cleansed and dried.

Cardo, a Hinge: The second *Vertebra* of the Neck is so called, because the Head turns upon it. See *Epistropheus*.

Caricous Tumour, called by *Hippocrates* *καρχηνοειδές*, is a Swelling resembling the Figure of a Fig, such as are frequently the Piles; from *Carica*, signifying a Fig, from

Caria, a Country whence they are sometimes brought.

Caries, expresses that Rottenness which is peculiar to a Bone. Whence,

Carious, is said of a foul Bone, or one inclining to Rottenness.

Carina, strictly signifies the Keel of a Ship; and from a Similitude in Figure some Anatomists call the Spine so, as does *Malpighi* the first Rudiments of a Chick in the Egg.

Carminative. A great many seem to be Strangers to this Term, as it does not appear to carry in it any thing expressive of the medicinal Efficacies of those Simples which pass under its Denomination. This had certainly its rise, and was thus applied, when Medicine was too much in the Hands of those Jugglers who for want of a true Knowledge in their Profession, brought Religion into their Party; and what they were ignorant in doing by rational Prescription, and the Use of proper Medicines, they pretended to do by Invocations, and their Interest with Heaven. Which Cant being generally, for the Surprise Sake, couched in some short Verses, the Word *Carmen*, which signifies a Verse, was also made to mean an Incantment; which as it was a very good Covert for their Ignorance as well as their Knavery, was frequently made use of to satisfy the People of the Operation of a Medicine they could not account for. And as the Medicines now under this Name are of a quick Efficacy, and the Consequences thereof in many Instances great and surprizing; the most violent Pains sometimes arising from pent up Wind, which immediately cease upon its Dispersion: for these Reasons, such Medicines as give Relief in this Case, are more

particularly termed carminative, as if they cured by Inchantment; the Complaint removed by them being so sudden, that the ordinary Means done, or the Operation of a natural Cause, are not well imagined to take Place so soon. But how these do this, is easy to imagine, when we consider that all the Parts of the Body are perspirable, and that the perspirable Matter may lodge sometimes in the Valves of the Bowels, and Interstices of all Parts, and that whatsoever will rarify and render thinner such Collections of Vapours will conduce to their utter Discharge out of the Body: For all those things under this Denomination are warm, and consist of very light subtile Parts, whereby they rarify such Flatulencies, and so facilitate their Expulsion.

Carnicula, is used sometimes by *Fallopian* in the same Sense as *Caruncle*; which see.

Carnivorous, by the *Greeks* called *Sarcophagi*; is used to distinguish those Animals that live on Flesh; the Word almost importing so much.

Caro, Flesh, is strictly such Parts of the Body where the Blood-Vessels are so small as to retain enough to preserve their Colour red; but some Anatomists make very perplexed and useless Distinctions under this Term: for all the Body being a Congeries of Canals and Fluids, no Part more than another can be said to be permanent or fleshy, but in this Limitation.

Caroli, some Writers in Surgery thus call little Venereal Excrencies in the Privy Parts.

Carotides, are two Arteries which arise out of the ascending Trunk of the *Aorta*, near where the subclavian Arteries arise; and as they ascend on each Side the *Aspera Arteria*, give some Branches to the

Trachæa, *Larynx*, *Glandula Thyroides*; and then they send out four considerable Springs to the Muscles of the *Os Hyoides* and *Pharynx*, to the *Mylohyoides* and *Digastrici*, to the lower Jaw of the Temples, and to the Muscles of the hind-part of the Neck, and Skin of the Head. Then they pass thro' the Canal in the *Os Petrosus*, give some Branches to the *Dura Mater*, join with the *Cervicalis*, detach some Sprigs to the *Glandula Pituitaria*, *Rete Mirabile*, and *Plexus Choroides*; and then running thro' all the Circumvolutions of the *Cerebellum*, lose their Capillary Branches in the cortical Substance. They have by some been titled *Arteriæ Soporariæ*, on a Conjecture that they were the Seat of Sleep.

Carpus, the Wrist. It is made up of eight little Bones of different Figures and Thickness. They are placed in two Ranks, four in each Rank. The first Rank is articulated with the *Radius*: the second with the Bones of the *Metacarpus*. The last little Bone of the first Branch lies not at the Side of the third, which answers to the Bone of the *Metacarpus* of the little Finger, as all the rest do by one another, but it lies upon it: They are strongly tied together by the Ligaments which come from the *Radius*, and by the annular Ligament, thro' which the Tendons which move the Fingers pass. Altho' this Ligament be thought but one, yet it gives a particular Case to every Tendon which passes thro' it.

Cartilago, is a smooth and solid Body, softer than a Bone, but harder than a Ligament. In it there are no Cavities, or Cells for containing of Marrow, nor is it covered over with any Membrane to make it sensible, as the Bones are.
The

The Cartilages have a natural Elasticity, by which if they are forced from their natural Figure or Situation, they return to it of themselves, as soon as that Force is taken away. They are chiefly in those Places where a small and easy Motion is required, as in the Ears, Nose, Larynx, Trachea, and Sternum; and their natural Elasticity serves instead of Antagonist Muscles. They cover also all the Ends of the Bones, which are joined together for Motion, because they are smoother than the Bones, which are without Sense; and by being softer than the Bones, the Attrition which is made by the Motion of the Joints, is the more easily guarded against.

Cartilago Ensisformis, and also called *Xiphoides*, from $\xi\iota\phi\omicron\varsigma$, *Ensis*, a Sword, and $\epsilon\iota\delta\omicron\varsigma$, *Forma*, Shape; is the Tip or Extremity of the Sternum, which is broad at its upper End, and narrower towards the Extremity, where it is sometimes a little forked, and bends downwards, so as to hurt the Stomach, and cause Vomiting. See Sternum.

Cartilago innominata, so called by Galen, is the same as the Moderns call *Annularis*, or *Cricoides*, which is the second Cartilage of the Larynx, and according to Bartholine, is the Basis of all the other.

Cartilago Scutiformis, so called from its Resemblance to a Helmet in Shape, is that Cartilage whose Prominence is discernable, externally in the Throat; and by some called *Pomum Adami*, from a Conceit of its leaving a Mark of the divine Wrath upon Adam's Transgression.

Caruncle, is either preternatural, as those little Excrescences in the urinary Passages, in Veneral Cases especially; or natural, as the

Caruncula Myrtyformes, from

their resemblance of Myrtle-berries, so called; as also *Glandulae Myrtyformes*. They are made by the Rupture of the Hymen in the first Copulation, which contracting in several Places, forms those *Caruncles* or Glands.

Carunculae Lachrymales, *Puncta Lachrymalia*, and *Glandulae Lachrymales*: all concur in the same Offices, and will hardly admit of a separate Description; thus distinguish'd from *Lachrymae*, Tears. On the back-side of the *Adnata Tunica* of the Eye, upon the upper Part of the Globe, is the *Glandula Lachrymalis*, pretty large, divided into several Lobes, each of which sends out an excretory Channel, which opens in the Fore-side of this Membrane, where it covers the upper Lid. This Gland separates the Matter of the Tears, which by the continual Motion of this Lid moisten the *Cornea*, which otherwise would dry and wrinkle by the continual Action of the external Air. The Edge of the Eye-lid being of an equal Convexity with the Ball of the Eye, which they touch, as the Tears fall off from the *Cornea*, they are stoppt by the Edge of the under Eye-lid, along which they run till they fall into two small Holes in the great *Canthus*, one in each Lid. These Holes are called *Puncta Lachrymalia*: And these lead to a small membranous Bag, which is situated in this Corner upon the *Os Lachrymale*: from the Bottom of which goes a small Pipe, which pierces this Bone into the Nose, and opens under the upper *Lamina* of the *Os Spongiosum*. It moistens the inner Membrane of the Nostrils by the Humour of the lachrymal Glands, which runs from off the Globe into them. Sometimes the Acrimony of this Humour causeth

sneezing, which may be hindred by pressing the Angle of the Eye to stop its flowing. Now between these two *Puncta* there is a Caruncle which serves to keep them open when the Eyes are shut, and this by some is ignorantly called the *Glandula Lachrymalis*.

Carunculae Papillares, are those little Protuberances on the Inside of the *Pelvis* of the Kidnies, made by the Extremities of the Tubes, which bring the Serum from the Glands in the exterior Parts to the *Pelvis*,

Carus, is a sleepy Disease, more aggravated than a *Lethargy*, but not so bad as an *Apoplexy*, according to some Writers; but such minute Sub-divisions of the same thing are now much in Disuse.

Cassamunair, an aromattick Vegetable; being a Species of Galangal brought from the East, and highly valued as a nervous and stomachic Simple.

Castration, is taking away the Testicles of any Creature; called also *Gelding*.

Catagmatic, expresses any thing of Use in the Cure of Fractures; and thus an Officinal Plaister hath obtained the Name of *Emplastrum Catagmaticum*.

Catalepsis, a lighter Species of the Apoplexy or Epilepsy; which see.

Catamenia, the same as *Menses*. which see.

Cataphora is much the same Disease with *Coma*; which see.

Cataphractica, is a particular Bandage for the Throat, of which *Sculetus* gives a Figure and its Use.

Cataplasma, is a topical Form, known best by the Name of a Poulitice.

Cataptosis, signifying a sudden and unexpected Prolapsion of the human Body, is a Symptom in the Apoplexy or Epilepsy.

Cataract, from *καταράσσω*, con-

fundo, to confound; because it destroys the Sight. It begins with a Suffusion of the Eye, when little Clouds, Motes, and Flies seem to float about in the Air; but when confirmed, the Pupil of the Eye is either wholly, or in Part, covered, and shut up with a little thin Skin, so that the Light has no Admittance. There is a great Nicety in taking this off; but, I know not by what Neglect, 'tis altogether given over to Empiricks to perform. Some will have it that these Representations are from Corpuscles floating in the aqueous Humour; others ascribe them to the Condensation or Coagulation of the aqueous Humour; and others again to the Thickning of the CrySTALLINE Humour: but Corpuscles neither in the aqueous or crystalline Humour can be perceiv'd on the *Retina*; nor can the Adhesion of any Thing to the exterior Surface of the *Cornea* represent any Image upon the Bottom of the Eye. For such is the Convexity of the *Cornea*, and Position of the *Retina*, that an Object must be placed at a greater Distance from the *Retina*, than the *Cornea* is, in order that its Image may be painted upon the Bottom of the Eye; that is, that all the Rays proceeding from each Point of a visible Object may converge to as many Points on the *Retina*: whence there is no Point in a visible Object, from which Rays flowing do not, or at least ought not to touch every Point in the *Cornea*. Therefore unless all the Rays emitted from each Point of an Object are collected in one Point of the *Retina*, they will not have a sufficient Force to represent there the distinct Appearances of Points, *i. e.* the Image of the Object. But it is impossible this should be effected according to the Rules of Opticks, if the Object be too near the *Retina*.

na, or not removed from it a sufficient Distance. See *Amaurosis*.

Catarrh, from κατάρρεω, *defluo*, is a Defluxion of a sharp Serum from the Glands about the Head and Throat, generally occasioned by a Diminution of insensible Perspiration, commonly called a Cold, wherein what should pass by the Skin, ouzes out upon those Glands, and occasions Irritations, Coughs, and all the usual Symptoms. The Causes are whatsoever accumulates too great a Quantity of Serum in the Body; whatsoever hinders the Discharges by Urine, and the Pores of the Skin, too much liquifies the Blood, astringes the Bowels, or weakens Digestion: For tho' the Food is changed into a sort of Fluid, notwithstanding that Digestion is weaken'd yet since its Communion is not great enough for the Chyle, which is made of it, to compose with the Blood an homogeneous Fluid, it will be easily again separated from it into Parts where its Velocity impressed from the Heart grows languid, that is, in the Glands situate about the Head which are numerous enough to separate a great Quantity of Serum thro' them. And indeed from what Cause soever the Serum is accumulated in the Vessels beyond its Quantity, its greatest Part cannot but, after some Circulations, lodge itself about the Head or Brain; because that is furnished with the least Resistances, either to oppose it, or throw it off after Lodgment. And upon that Account the Brain itself will soon be in Fault, whenever the Blood or other Humours are so. Some have wrote very largely of this Distemper, and particularly *Schneider*; and many include under it all kinds of Defluxions: but the most received Distinctions are included in these Verses:

Si fluit ad Pectus, dicatur Rheumia
Catarrhus,
Ad Fauces Branchus, ad Nares esto
Coryza.

tho' *Hippocrates* enumerates seven Species of Defluxions under this Appellation. When a Fever arises with these Symptoms, it is called *Febris catarrhalis*; and *Willis* gives an Instance of one that was epidemical and malignant, *de Febr. Cap. 17.*

Catastasis, frequently used by *Hippocrates* to express the Constitution, or State of any thing; and commonly applied by *Galen* to the Seasons of the Year.

Cathæresis, from καταίρω, *absumo*, to waste: *Hippocrates* uses it for such a Consumption of the Body as happens without any manifest Evacuation; but *Scribonus Largus*, and some others, express by it such Loss as arises from Purging or the like.

Cathartick, from καταίρω, *purgo*, to purge; is a Term used for all purging Medicines. The *Vermicular* or *Peristaltick* Motion of the Guts, is such as continually helps on their Contents, from the *Pylorus* down to the *Rectum*. Now every Irritation either quickens that Motion in its natural Order, or occasions some little Inversions of it. In both, what but slightly adheres to the Coats or inner Membranes will be loosened and shook off, and carried forward with their Contents; and they will also be more agitated, and thus rendred more fluid. By this only 'tis manifest, how a Cathartic hastens and encreases the Discharges by Stool; but the same manner of Operation also carries its Effects much further, in proportion to the Force of the *Stimulus*: For where it is great, all the *Appendages* of the

Bowels, and even all the *Viscera* in the *Abdomen*, will by a Consent of Parts, be pulled or twitched, so as to affect their respective Juices in the same Manner as the Intestines themselves do their Contents. The Consequence of which must be, that a great deal will be drained back into the Intestines, and made a Part of what they discharge. And when we consider the vast Number of Glands in the Intestines, with the Outlets of those *Viscera* opening thereinto, and particularly of the Liver and *Pancreas*; it will be no Wonder that vast Quantities, especially in full Constitutions, may be carried off by one Purge.

As for those Catharticks which are distinguished by the Names of *Cholagogues*, *Hydragogues*, *Phlegmagogues*, and the like, upon a Supposition of an Elective Quality therein, they may be accounted for upon more intelligible Principles; for when the Discharges by Stool discover an Over-proportion of any particular Humour, it is to be supposed there was a Redundance of such a Humour, whose Discharge any Irritation would occasion. Thus in Proportion to the Proximity of some Humours in the intestinal Tube, and the Disposition of the Passages to convey them that Way, do they require greater or lesser Vibrations, or Shakes of the Fibres from a Cathartick to fetch them out. For this Reason the brisker Catharticks which vellicate the Membranes most of all, pump out as it were, from all the Mesenterial Glands, and neighbouring Parts, their Contents; which because they abound so much with Lymphaticks, and viscid watry Humours, make the Discharges thin and watry: those which act in somewhat a lower Degree, yet irritate enough to deterge and draw out

a great deal of mucous and viscid Matter, which sometimes by Lodgment, and Want of due Motion, changing into various Colours, occasions different Names of Phlegm or Choler. As the former therefore pass for *Hydragogues*, so do the latter for Purgers of Phlegm and Choler.

Upon another Account besides that of a *Stimulus*, does a Cathartick answer its Intention, and that is by fusing the Humours, and rendring them more fluid than they were before; whereby they are better fitted to pass off by their proper Emunctories. Those which consist of very subtile and active Parts, are not so sensible in the larger Passages, because of the great Quantities of Matter which lay too great a Load upon them, and make them unheeded: but when they are got into the Blood in any considerable Number, they divide and fuse those Cohesions which obstruct, or move heavily along the Capillaries, and scour the Glands; insomuch that every Pulsation throws something thro' the intestinal Glands, which goes away by Stool, that the reflux Blood had washed away, and brought back from all Parts of the Body. Of this kind are all those Catharticks which are said to purge the Joints, and are prescribed in Rheumatisms, and arthritick Pains, as the *Radix Turpethi*, and all the *Aloeticks*. And this is the Reason why Catharticks of this sort are so easily changed into the most efficacious Alteratives; for an Alterative is a Cathartick in a lower Degree, or of a more remiss Operation. Whatsoever brings such Particles to a secretory Orifice, which are fitted for its Passage, oftner, either by accelerating the Blood's Motion, or breaking it into more Particles of that particular Size and

and Inclination, will increase that Secretion. According therefore to the Difference of the Parts where such Secretions are enlarged, as the Glands of the Intestines, Kidneys, or Skin, the Medicines which are the Instruments therein, are call'd either Catharticks, Diureticks, or Diaphoreticks.

Cathereticks, are Medicines which serve to take off the fungious or superfluous Flesh that is apt to grow up in Wounds or Ulcers, and are the same with Causticks and Escharoticks.

Catheter, is a hollow Instrument, and somewhat crooked, to thrust up the Yard into the Bladder, to assist in bringing away Urine, when the Passage is stopped by a Stone or Gravel; tho' some Writers use it also for Liniments and other external Applications.

Catholick, from *κατὰ*, *per*, thro', and *ὅλον*, *totum*, all; is ascribed to Medicines that are supposed to purge all Humours: also the same as a *Panacea*, or universal Medicine: but such are now laughed at for Impositions.

Cava. See *Vena Cava*.

Caul. See *Omentum*.

Causus, is a Species of a Fever attended with violent Heat and Restlessness. See *Bellini de Febris*.

Causticks, from *καίω*, *uro*, to burn; are such things as by their violent Activity, and Heat thence occasioned, destroy the Texture of the Part to which they are applied; and eat it away, as we commonly express it, or burn it into an *Eschar*, which they do by the extreme Minuteness, Asperity, and Quantity of Motion, that like those of Fire itself tear asunder all Obstacles, destroy the Texture of the Solids themselves, and change what they are applied to, into a Substance like

burnt Flesh; which in a little time with detergent Dressing, falls quite off, and leaves a Vacuity in the Substance of the Part. These are of use generally in Abscesses and Imposthumations, to eat thro' to the suppurated Matter, and give it vent; and also to make Issues in Parts where cutting is difficult or inconvenient.

Cautery, from the same Etymology as the foregoing, is either actual or potential; the first is burning by a hot Iron, and the latter with Caustick Medicines. The actual *Cautery* is generally used to stop Mortification, by burning of the dead Parts to the quick; or to stop the Effusion of Blood, by searing up the Vessels.

Celerity. See *Velocity*.

Celiac Artery and Vein. See *Artery and Vein*.

Cells, are little Bags or Bladders, where Fluids, or Matter of different Sorts are lodged; common both to Animals and Plants.

Cella Turcica. See *Brain*, and *Pinealis Glandula*.

Cellulae Adiposæ, the same as *Adiposi Ductus*; which see.

Center, is the Middle of any Body, or that Point which is every way, or as near as possible equidistant from its Surface.

Center of Gravity of any Body, is a Point on which that Body being supported, or from it suspended, all its Parts will be in an *Equilibrium* to one another. Thus the Center of Gravity of the human Body extended at Length, is by *Borelli de motu Animalium*, placed between the *Nates* and *Pubes*, which is supposed very convenient for the Act of Generation.

Center, common of the Gravity of two Bodies, is a Point in a right Line connecting their Centers, and so posited in that Line, that their Dis-

Distances from it shall be reciprocally as the Weight of those Bodies; and if another Body is placed in the same right Line, so that its Distance from any Point in it be reciprocally as the Weight of both the former Bodies taken together, that Point shall be the common Center of Gravity of all three.

Center of Motion of a Body, is that Point about which a Body moves when fastened any way to it, or made to revolve round it.

Center of Oscillation, is that Point in a compound Pendulum, where, if its whole Weight were fasten'd, it would still oscillate or perform its Swings in the same time as before: and consequently it must be distant from the Point of Suspension by the length of a simple Pendulum, whose Oscillations are synchronal with those of the Compound.

Center of Percussion, is that Point in any Body wherein the Force of a Stroke made with it is the greatest.

Central Forces: this is a general Appellation for the two grand Species, centrifugal and centripetal Forces.

Centrifugal Force, from *Centrum*, a Center, and *fugo*, to fly; is that Force by which all Bodies moving round any other Body in a Circle or an Ellipsis, do endeavour to fly off from the Axis of their Motion in a Tangent to the Periphery of it. And this Force is always proportional to the Circumference of the Curve, in which the revolving Body is carried round. The centrifugal Force to the centripetal, is as the Square of the Arch which a Body describes in a given Time, divided by the Diameter, to the Space thro' which any heavy Body moves in falling from a Place where it was at rest in the same time. If any Body swim in a Medium heavier than itself, the centrifugal Force is

then the Difference between the specific Weight of the Medium and the floating Body.

Centripetal Force, from *Centrum*, a Center, and *peto*, to seek; is that Force by which any Body moving round another is drawn or tends towards the Center of its Orbit, and is much the same with absolute Gravity; which see. If a Body being specifically heavier than any Medium, sinks in it, the Excess of that Body's Gravity above the Gravity of the Medium, is the centripetal Force of the Body downwards.

Centrum, and *Centration*, are Terms used by *Paracelsus* and some of his Followers, to express the Principle, Root, or Foundation of any thing: as God to be the Center of the Universe, the Heart the Center of Life, the Brain the Center of Spirits, &c.

Cephargia, and *Cephalalgia*, from *κεφαλή*, *Caput*, the Head, and *ἀλγέω*, *doleo*, to ache; is a Pain in the Head from what Cause soever. See *Pain*.

Cephalicks, from the same Derivation; are all those Medicines which are good for Distempers of the Head.

Cephalick Vein, creeps along the Arm between the Skin and the Muscles, and divides into two Branches. The external goes down to the Wrist, where it joins the Basilica, and turns up to the Back of the Head; the internal Branch, together with a Sprig of the Basilica, makes the Mediana. The Ancients used to open this Vein in Disorders of the Head: for which Reason it bears this Name: but a better Acquaintance with the Blood's Circulation, informs us that there is no Ground for such a Notion.

Cephaloides, is a Term given by *Crolius*, and some others, who ascribed

cribed Virtues to Plants from their Signatures, to those which had any Resemblance to a Head, the Term importing so much; as the Poppy, Piony, and the like.

Ceration, is a Term used by some Chymists in various Senses. *Rulandus* explains it from *Geber* to be the softening a hard Substance into a waxy Consistence; but *Johnson* and some others express by it the same as Incorporation, or Mixture.

Cerate, from *Cera*, Wax, is a Medicine made of Wax, which with Oil or some softer Substance, makes a Consistence thinner than a Plaster.

Ceretaglossus, from *κέρας*, *Cornu*, a Horn, and *γλῶσσα*, *Lingua*, the Tongue, its Shape being like a Horn; is a Muscle that arises broad and fleshy, from the Sides of the *Os Hyoides*, and is inserted into the Root of the Tongue, which it pulls directly into the Mouth.

Ceratorides: some Anatomists thus call the *Tunica Cornea* of the Eye; which see.

Cerebella Urina: *Paracelsus* thus distinguishes a Urine which is whitish, of the Colour of the Brain, and from whence he pretended to judge concerning some of its Distempers.

Cerebellum, is composed of a Cortical and Medullary Substance, lying in the hinder Part of the Head. Its Superficies is full of straight Foldings, which resemble the Segments of Circles, or the Edges of Plates laid on one another; and these are largest in its Middle, and grow less as they approach its fore and hind Part, where they seem to resemble two Worms, therefore called *Processus Vermiformes*. The Medullary Substance makes three Processes upon each Side of the *Medullary Oblongata*. Its great Use is to separate

the nervous Fluid, called animal Spirits, from the Blood.

Cerebrum, is of a round Figure, and divided by the first Process of the *Dura Mater*, into the right and left Side. Its external Surface resembles the Circumvolutions of the small Guts, and in the Middle of each Circumvolution is the Beginning of the Medullary Substance, so that the Cortical Part is always on the Outside; which *Malpighi* says is nothing but a Heap of little oval Glands, which receive the Capillary Branches of the Veins and Arteries which belong to the Brain, and which send out an infinite Number of Fibres, which all together make up the Medullary Substance; and passing out of the *Cranium*, forms the Nerves and *Medulla Spinalis* contained in the *Vertebrae*: and hence the nervous Juice is derived into the Nerves and Fibres of the whole Body, by the *Corpus Callosum*, and *Medulla Oblongata*. See *Brain*.

Ceresfaction, used by the Chymists as *Ceration*; which see.

Cerelæum, used by some antient Authors for a Composition of Wax and Oil, and by others, as *Rosfinckius*, for an Oil made from Wax.

Ceroma, was used by the antient Physicians for an Unguent or Cerate, tho' originally it seems to have been given to a particular Composition which the Wrestlers used in their Exercises; whence *Juvenal* calls one so anointed *Ceromaticus*, *Sat.* 3. -

Cervix, the hinder Part of the Neck, as the fore Part is called *Column*.

Cervix Uteri, is the Neck of the Womb.

Cerumen, is the Wax or Excrement of the Ear, to which *Schroder* and some other Writers ascribe

very strange Virtues as a Medicine.

Ceruse, is a Preparation of Lead with Vinegar, which is of a white Colour, whence many other Things resembling it in that Particular, are by Chymists call'd *Ceruse*, as the *Ceruse* of Antimony, and the like. *Paracelsus* also applies it to a white Urine, which he calls *Ceruffea Urina*, and says it is a Sign of Death, or of a foul obstructed Liver.

Chalcitis, is something metalline growing in the Veins of Brasses, or a kind of Mineral Vitriol; but the Shops generally substitute in its room burnt Vitriol, or the *Caput mortuum* of Oil of Vitriol.

Chaomantia Signa, so *Paracelsus* calls those Prognosticks that are taken from Observations of the Air; and the Skill of doing this, the same Author, who hath introduced many strange Terms into Medicine, calls *Chaomantia*.

Chaos, is used for the original Matter of the Universe before it was brought into Form, and from thence for Things in Confusion.

Charta Emporetica, is Paper made soft and porous, such as is used to filter with.

Chalcantum, is Vitriol calcined red.

Characters, used in Medicine.

- ♂ Antimony.
- ♂ Aqua Fortis.
- ♂ Aqua Regia.
- ♂ Balneum Mariæ.
- ♂ Calx Viva.
- ♂ Caput Mortuum
- ♂ Copper.
- ♂ Common Salt.
- ♂ Distill.
- ♂ Gold.
- ♂♂ Harts-Horn.
- ♂♂♂ Harts-Horn calcined,

- ♂ Iron.
- ♂ Jupiter, Tin,
- ♂ Lead.
- ♂ Mercury.

♂ ——— Sublimate.

♂ ——— Precipitate.

♂ Nitre.

♂ Sal Armoniac.

♂ Sulphur.

♂ Spirit of Wine.

♂ or S. V. R. Spirit of Wine rectified.

♂ Silver.

♂ Tartar.

♂ Vitriol.

♂ A Pound, or a Pint.

♂ An Ounce.

♂ A Drachm.

gr. Grains.

fs. Half any thing.

Cong. A Gallon.

Cochl. A Spoonful.

M. A Handful.

P. A Pugil.

P. Æ. Equal Quantities.

S. A. According to Art.

q. f. A sufficient Quantity.

N. B.

♂ i. contains 3 viii.

♂ i. 3 iii.

♂ i. gr. xx.

Cong. i. 1b viii.

Cochl. i. is about 3 fs. and

A Pugil is the eighth Part of a Handful.

Some Authors use others, but they are more out of Affectation than for any real Service, and therefore justly neglected by late Writers; and even many of these are now seldom used. Some Enthusiastick Authors also speak of particular Characters for driving away Diseases, as by Charms. See *Abbreviations*.

Chemofia,

Chemosis, is that Disorder of the Eyes, wherein their *White* hangs over the *Black*, and at the same Time standing so far above it, as seems to leave a considerable Space between the two.

Chieri, or *Keyri*, is now used for the *Lucoium luteum*, the Wall-Flower; but Chymists formerly expressed by it a great many different things not worth Recital here, because now rejected.

China, is an Officinal Root so called from the Country whence it is brought; but *China China*, or *Quinquina*, is also a Name for what is now chiefly known amongst us for the *Cortex Peruvianus*, or *Jesuits Bark*.

Chiromancy, is the Art of Foretelling what will happen to Persons from the Lines of their Hands, but this hath been long rejected as ridiculous.

Chiraga, from *χείρ*, *Manus*, a Hand, and *ἀγρεύω*, *capio*, to take; is the Gout in the Hands.

Chirurgerv, from *χείρ*, *Manus*, a Hand, and *ἔργον*, *Opus*, Work, is the Art of a Chirurgeon, so called from its great Dependence upon manual Operation, and a peculiar Dexterity therein; though Custom has shortened this in the usual Way of speaking, to Surgery; and Chirurgeon, from the same Etymology, to Surgeon. Some Institution-Writers divide this Art into several distinct Branches, but such are not worth Notice.

Chives, is a Term in *Botany*, by which Mr. Ray expresses the *Latin Apices*; but Dr. *Grev* calls the *Stamina*, on which the *Apices* are fixed, the *Chives*,

Chlorosis, from *χλωρίζω*, to look green; is that Dis temper in young Women which is called the Green-Sickness, because they are generally

of a wan fallow Complexion. It arises from a cold heavy Blood, that becomes so from the Vessels being too much crouded with it, and want of Motion enough to keep it duly fluid: and therefore Evacuation and Exercise are necessary to its Remedy. See Dr. *Friend's Emmenologia*.

Choledochus, from *χολή*, *Bilis*, the Bile, and *δέχομαι*, *recipio*, to receive or contain; is a common Epithet for the Gall-bladder, the same with the *Ductus biliaris communis*. See *Jecur*.

Cholick, seems strictly and originally to express only a Disorder of the *Colon*; but Custom has appropriated it to signify any Disorder of the Stomach or Bowels in general that is attended with Pain. And under this loose Acceptation, may conveniently enough be made these four remarkable Divisions. 1. A bilious Cholick, which is from an Abundance of Acrimony or Choler, that irritates the Bowels so as to occasion continual Gripes, and generally with a Looseness; and this is best managed with Lenitives and Emollients, which by degrees purge off and soften the offending Humours. 2. A flatulent Cholick, which is Pain in the Bowels from *Flatus's* and Wind pent up therein, which distends them into unequal and unnatural Capacities; and this is managed with Carminatives and moderate Openers. 3. An hysterical Cholick, which arises from Disorders of the Womb, and is communicated by the Consent of Parts to the Bowels, and is to be treated with the ordinary Hystericks. And, 4. A nervous Cholick, which is from Convulsive Spasms and Contortions of the Guts themselves from some Disorders of the Spirits, or nervous Fluid, in their component Fibres; whereby their Capacities are in

in many Places straightned, and sometimes so as to occasion obstinate Obstructions: this is best remedied by brisk Catharticks, joined with Opiates, and emollient Diluters in Plenty at the same Time. There is also a Species of this Distemper which is commonly called the Stone-Cholick; which is also like the Hysterical, by Consent of Parts from the Irritation of the Stone or Gravel in the Bladder or Kidneys: And this is most commonly to be treated by Nephriticks and oily Diureticks, and is greatly assisted with the carminative Turpentine Clysters.

Chologogues, from *χολή*, *Bilis*, *Choler*, and *ἄγω*, *duco*, to draw; are such Medicines as purge *Choler*, as *Rhubarb*, and the like.

Choledicus Ductus, is the common Pipe made up of the Union of the *Porus Biliarius* and *Ductus Cysticus*, which goes obliquely to the lower End of the *Duodenum*, or *Jejunum*, and there empties out the Bile.

Choler. See *Bile*.

Cholera Morbus, is when the Bile so exceeds in Quantity or Acrimony, as to irritate the Bowels and Stomach to eject it both upwards and downwards.

Chorde, is an Inflammation and Contraction of the *Frænum* of the Yard that holds the Glands downward, and prevents Erection without Pain. It happens in *Gonorrhæa's* from the Acrimony of the Matter which runs from the *Urethra*; from *Chorda*, a String or Tendon.

Chorea Sancti Viti, is a Distemper some physical Histories take Notice of, which used to seize Persons about *May*, which was the Time of the Year that they visited the Chapel of *St. Vitus*; and because it made them leap and frisk about in a

strange Manner, it was therefore called *St. Vitus's Dance*: But very probably at that Season of the Year the Females, who were only affected by it, might from some Turgescency and Repletion of hot Juices be raised into those Emotions, which are sometimes called *Hysterical*, or by the Name of *Furor Uterinus*.

Chorion, is the outer Membrane that involves the *Fœtus*: It is pretty thick, and a little rough on its Outside, to which the *Placenta* adheres.

Choroides, from the former Derivation, and *εἶδος*, *Forma*, Shape; is the folding of the Carotide Artery in the Brain, wherein is the *Glandula Pinealis*. The *Uvea Tunica*, which makes the Apple of the Eye, is also so called, from its Structure.

Chronick Distemper, from *χρόνος*, *Tempus*, Time, is a Distemper of Length, and is the Consequence of some natural Defect in the Constitution, or an irregular Way of living, as *Dropsies*, *Asthma's*, and the like.

Chrysanthemum: All Plants may be so called, that blow with a yellow Flower, from *χρυσός*, *Aurum*, Gold, and *ἄνθος*, *Flos*, a Flower.

Chrysoms, from *χρίσμα*, *Unctio*, anointing. Antiently Children were anointed as soon as born, with some aromatick Compositions; and upon the Head they wore an anointed Cloth till they were judged strong enough to endure Baptism: after which that Cloth was left off; so that between the Birth till then, was accounted a particular Period of the Child's Life, deemed a State of Unction; and hence our Bills of Mortality seem to derive their Distinction of *Chrysoms*, for all who die before they are baptized.

Chyle,

Chyle, is that Juice which the Food is immediately converted into by Digestion ; which see.

Chylification. See *Digestion*.

Chymistry. A Term, or the Name of an Art so little understood, or so designedly kept a Secret, that the World hath never yet been favour'd with a full and genuine Definition or Description of it. 'Tis no less than the most valuable and considerable Branch of all natural Philosophy ; yet shamefully disesteemed and trampled upon by those who are perfect Strangers to its wonderful Productions and Uses. 'Tis in itself the Art of changing all the known Bodies of our Globe in such proper Vessels by means of certain Agents, and particularly Fire, as to render the *Phænomena* manifest to the Senses. They who desire to see how a false chymical Philosophy, with all its Impostures, hath been expunged, and useful Knowledge advanced in its Stead, may consult Dr. *Friend's Prælectiones Chymicæ*. But whoever desires to know what the Art of Chymistry really is, both in the Theory and the Practice, may consult the learned *Boerhave's* wonderful Performance on that Head, term'd *Institutiones Chymicæ*.

Chymosis, or *Chemosis*, from *χαίρω*, *bisco*, to gape ; is an Inflammation of the Eye-lids, which turns out their Inside to Sight.

Cicatricula, is that little whitish Speck in the Coat of the Yolk of an Egg, in which the first Changes appear towards the Formation of the Chick ; 'tis commonly called the Treddle.

Cicatrizare, signifies to apply such Medicines to Ulcers or Wounds, as heal and skin them over ; and hence

Cicatrix, is the Scar or Mark left upon healing a Wound or Ulcer.

Cilia. See *Eye*.

Ciliare Ligamentum, is a Collection of small slender Threads that take their Rise from the inner Part of the *Tunica Uvea* in the Eye, and thence run towards the prominent Part of the Chrystalline Humour, which they compass in, and connect the *Uvea*. Its Use is to contract or dilate the Figure of the Chrystalline Humour, and to draw it further from, or bring it nearer to the *Uvea*, according as there is Occasion.

Cina Cina, or *China China*, or *Quinquina* ; the same as the *Jesuites Bark*.

Cinertious Substance, is the external, soft, glandilous, and ash-coloured Part of the Brain, which is also called *Cortical*. See *Cerebrum*.

Circulation, of the Blood. This being of the utmost Consequence to a right Apprehension of the animal Oeconomy, besides what is said under Blood, the Heart, *Systole* and *Diastole*, and *Aorta*, which see, it may be proper further to take Notice here, that the *Vena Cava ascendens* and *descendens* unite in one, and open into the right Ear ; where they unite, there is a little Protuberance made by their Coats on the Inside of the Canal, like an Isthmus, which directs the Blood both of the one and the other into the Ear, and so hinders them from rushing one upon another. The right Ear in its *Diastole* receives the Blood from the *Vena Cava*, which by its *Systole* is thrust into the right Ventricle ; (for the tendinous Circle which is at the Mouth of the *Cava*, contracts, and hinders the Blood from returning into it) which at the same time is in its *Diastole*. In the *Systole* of the right Ventricle the Blood is thrust into the *Arteria Pul-*

Pulmonalis (for it cannot return into the Ear, because of the *Valvula Tricuspides*) which communicates with the *Vena Pulmonalis*; that carries back the Blood into the Ear; which in its *Systole* thrusts the Blood into the Left Ventricle, and which is then in its *Diastole*. In the *Systole* of this Ventricle the Blood is thrust into the *Aorta*, (for it cannot return into the Ear, because of the *Valvula mitrales*) which carries it thro' all the Body. Now the *Aorta* when it comes out of the Heart, ascends a little upwards, and then turns downwards from the descending Trunk, for the Reason already given; and from the upper Side of this Turning, the *cervical* and *axillary* Vessels do arise: by this Artifice the Blood collides against the Sides of the *Aorta*, its Force is broken, Part of it is taken in by the Mouths of the ascending Branches; but its greatest Part is directed downwards.

But in order to consider how the Blood circulates in the *Fœtus*, it is necessary to observe, that in the right Ear, or the lower Side of the Protuberance of the *Cava*, just opposite to the Mouth of the *Cava ascendens*, there is a Hole called *Foramen Ovale*, which opens into the *Vena Pulmonalis*; this Hole has a Valve which suffers the Blood to enter the Vein, but hinders it from coming back again. There is likewise a Passage or Canal which runs from the Trunk of the *Aorta Pulmonalis*, to the Trunk of the *Aorta*. Now the Blood which comes from the *Placenta*, by the *Umbilical Vein*, into the *Vena Porta*, is sent into the *Cava* by a Canal which goes straight from the Trunk of the *Porta* to the Trunk of the *Cava* in the Liver. This ascends the *Vena cava*, and is directly thrown thro'

the *Foramen Ovale* into the *Vena Pulmonalis*, which carries it into the Left Ventricle, which throws it into the *Aorta*, to be distributed thro' all the Body. But the Blood which comes down the *Cava descendens*, is diverted by the *Isthmus* of the *Cava* from the *Foramen Ovale*, and falls into the right Ventricle, which thrusts it into the *Arteria Pulmonalis*, from whence Part of it is immediately carried by the communicating Canal into the *Aorta*. The Reason of these Passages in a *Fœtus*, is, because the Blood could not all pass thro' the *Pulmonary* Blood-Vessels, they being too much compressed by the Substance of the Lungs; but as soon as the Child is born, and the Pressure taken off from the Blood-Vessels, by the Distension of the Lungs with Air, the Blood finding a free Passage thro' the Lungs, runs more by the communicating Canal, whose Direction likewise is not now so favourable for its Reception as before; because the *Pulmonary* Artery being stretched out with the Lungs, makes it go off at right Angles, and therefore it dries up. And now the *Pulmonary* Vein being distended with a greater Quantity of Blood which it receives from the Lungs, the Valve of the *Foramen Ovale* is pressed close to its Sides, denying a Passage to the Blood from the *Cava* to be mixed with the rest of the Blood, so that by this Contrivance, the Blood which comes from the *Vena Cava descendens* passes only thro' the Left Ventricle, whilst the Blood which comes from the *Cava ascendens* passes only thro' the right Ventricle.

From the whole of the foregoing it appears, that both Auricles contract at the same time, as likewise do the Ventricles; and that when the

the *Auricles* are contracted, the Ventracles are dilated, and *vice versa*. To account for this alternate Motion of the Auricles and Ventracles of the Heart, it is necessary to consider, that the Contraction of all the Muscles is caused by the Influx of Blood and Animal Spirits into the Cavities of their Fibres; and therefore whenever this ceaseth, the Contraction of the Muscles likewise ceaseth; or the Swelling of the Fibres abating, they may be reduced by any small Force to the same Length they were before their Contraction; which alone is their natural State, the other being entirely caused by an external Force. If therefore there be an equal and continued Influx of animal Spirits, the Contraction of the Muscles will likewise be equal and continual; and if the Influx is unequal and interrupted, the Contraction will be the same. What this Influx is, will best be learned from the Action of such Muscles as have no Antagonist, and over which the Will has but a small Influence; the most principal of which are the Heart, and the Muscles that dilate the Breast in Inspiration. Now both these are alternately contracted and dilated; and consequently the Blood, or Animal Spirits, do not flow continually into their Fibres, but at some Intervals of Time to which these Contractions answer. That they have no antagonist Muscles, is evident to every one who is acquainted with the Structure of the Body; for the Muscles, which in a quick Expiration accelerate the Motion of the Ribs downwards, are so weak as to be of no moment: and that the Pressure of the Atmosphere upon the Surface of our Bodies cannot supply the Place of Antagonist Muscles, is apparent to any one who considers, that the Air within

us is always in *Æquilibrio* with the Air without us; and consequently the Pressure of the Atmosphere can neither promote or retard the Contraction of the Thorax, or the Dilatation of the Heart; and there being no other thing which can influence them, their alternate Contractions and Dilatations must be owing to the Influx of Blood or Animal Spirits. There are indeed other Muscles which have no Antagonists, such as the *Sphincter-Gulæ*, *Ani* and *Vesicæ*, which we do not observe to be thus alternately contracted and dilated: but the reason of this is, because their Force is very weak, and consequently their Contraction small, and differing so little from their Relaxation, as to be imperceptible to us; and perhaps in the ordinary Course of Nature they act no otherwise than the Fibres of the Arteries do, which when they are dilated by the Blood, contract again by their natural Elasticity. It may perhaps be objected, that when one Side of the Face is struck with a Palsy, the other is constantly and incessantly convulsed; and that therefore the Influx of the Blood and Spirits must be continual. But to this it may be answered, that when the Swelling which causeth the Contraction of the Fibres, subsideth, and the Muscles are relaxed; they will still be shortened, till by some small Power they are pulled out to their natural Length; which being here wanting, and one Contraction presently following another, that Side of the Face will always appear as incessantly convulsive. But the natural Bent of the Ribs is downwards, by which the intercostal Muscles are stretched out again, as well as by the weak Force of their few Antagonists. And when the Fibres of the Heart are relaxed,

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they are, by the Influx of the Blood into the Auricles and Ventricles, distended again till the next Contraction. And that the Muscles are not in a perpetual State of Contraction, will likewise appear from the Nature of the Cause of their Contraction, which without doubt is the Rarefaction of the Blood and Spirits in the Cavities of the muscular Fibres. Now of whatever Nature this Rarefaction is conceived to be, it can be but temporary, and must quickly cease in such a small Quantity of Fluids, as the Fibres of a Muscle, or rather as one Vesicle of a Fibre is capable of receiving at a Time. Nor will it be of any use to affirm that there is a constant Supply of fresh Blood and Spirits, which keep up the constant Inflation of the Fibres; for this Inflation being caused by the Pressure of the rarify'd Fluids against the Sides of the Fibres, whilst this Pressure continues, the progressive Motion of the Fluids thro' the Fibres must be at a Stop, nor can they move forward again, till the Rarefaction begins to abate, that is, till the Fibres are relaxed; and consequently the Contraction or Action of the Muscles must cease, before fresh Blood can be rarified. Both Blood and Spirits being then necessary for the Inflation of the Muscles, and we being sure the Blood moves with a continual Stream, the Animal Spirits must only drop from the Nerves into the muscular Fibres, and there rarify the Blood after the manner to be explain'd about muscular Motion, which see. When a Drop falls, the Fibres are presently inflated, and the Muscle contracted, as soon as the Rarefaction of the Blood is over, the Muscle is relaxed till the next Drop falls from the Nerves, by which it is contracted again. Thus

the *Systole* and *Diastrale* of the Heart regularly follow one another; and this being first clearly understood, it will be easy to give a Reason why the Auricles are constantly contracted when the Ventricles are dilated, and the Ventricles contracted when the Auricles are dilated, notwithstanding they have all the same Nerves and Blood-Vessels: For suppose all of them full of Blood, before the Heart begins to beat, and that the Auricles and Ventricles are ready to contract at the same time, yet because the Strength of the Ventricles is much greater than that of the Auricles, they will contract; and by their Contraction hinder that of the Auricles, which endeavour likewise to expel the Blood by which they are distended, but cannot perform it till the Relaxation of the Ventricles makes room for its Reception: and thus their Motions necessarily become alternate, without which there could be no Circulation. See *Fibre*.

Circulation, in Chymistry, is when one Body, commonly called a blind Head, is inverted into another in which there is Matter to be digested by Heat; whereby what the Heat raises is collected, and again falls down into the Vessel from whence it came, so that the finest Parts are hereby not lost, which otherwise would fly away.

Circumambient, signifies encompassing round; so those Bodies that lie round another are thus called; but the Body of Air encompassing all things on this Globe, is more especially called the *Circumambient*.

Circumforaneous, from *circum*, about, and *Forum*, a Market, is sometimes applied to Mountebanks, and such as vend Medicines in that manner about the Countries.

Cirri,

Cirri, in *Botany*, are those fine Strings or Hairs, by which some Plants fasten themselves, for their Support, as Ivy, and the like.

Cirsofele, is the same as *Hernia varicosa*, which *P. Ammianus* describes to be a Multitude of *Varices* in the Testicles, which prodigiously encrease their Bulk, and hinder their natural Offices; and sometimes make Castration necessary.

Cist, *Cista*, or *Cistus*; thus our Surgeons call those Tumours where the obstructed Matter collects as in a Bag, which may be all taken out at once.

Claret was the Name of a Wine impregnated with *Aromaticks*, which was sometimes also called *Hippocras*, or *Vinum Hippocraticum*, because first prescribed by *Hippocrates*; but it is now out of Use. *Rulandus* also makes it a Name for the white of an Egg, but present Usage does not justify such an Interpretation.

Clarification, in *Medicine*, is the fining Liquors from their grosser Parts, and is generally done by beating up with the Whites of Eggs, Decoctions and turbid Liquors into a Froth; which upon boiling will entangle the grosser Parts, and carry them up to the Top in a tough Scum; which is either taken off with a Spoon, or separated by a Flannel-Bag, called *Hippocrates's* Sleeve. Another Way also is by standing in a convenient Vessel to suffer the grosser Parts to settle, and which is also sometimes promoted by a Mixture of such Matter as will give what should settle a greater Weight, and make it fall sooner; as in distill'd Waters, which are milky, fine Sugar, with a few Grains of Alum, will carry down the oily Parts, and leave the rest clear; and

this is generally called *Depuration*.

Clavellati Cineres, the same as *Pot-Ashes*; which see.

Claviculae, or Channel-bones, are two in Number, situated at the Basis of the Neck above the Breast, one on each Side; they are pretty long and small; at one End they are joined to the Production of the *Scapula* called *Acromium*, by the Articulation called *Synchondrosis*; at the other End, to the upper End of the *Sternum* by the Articulation called *Artbrodia*; they are crooked like the Letter S, for the Passage of the Vessels which pass under them, and to facilitate the Motion of the Arms. Their Substance is spongi-ous, which renders them so easy to be broke, and the sooner to be united when broken. Their Use is to sustain the *Scapula* to which the Arms are articulated. And because the pectoral Muscle which pulls the Arms across the Breast, it inserted near the upper end of the *Humerus*; therefore if the *Clavicule* did not keep the *Scapula*, to which the Head of the *Humerus* is joined, always at an equal Distance from the *Sternum*, the upper Part of the Arm, and not the Hand must have been pulled forwards. The young Shoots also, by which Vines lay hold of their Support, as with Hands, are signified by this Term.

Clavis, signifies a Key, or any Instrument of that Use; wherefore some Physicians give this Name to a Pain in a small Part of the Head commonly a little above the Eyes, which seems as if that Part was bored thro' as with an Auger; and Dr. *Sydenham* calls such a Pain on the Top of the Head in Hysterical Persons, *Clavis Hystericus*. Some Chymists also, from the Use

of this Instrument, apply it to many things, to which they ascribe strange Virtues, in opening or unlocking other Substances.

Clepsydra, commonly signifies a Contrivance to measure Time by the running of Sand out of one Glass into another; but *Paracelsus* uses it for an Instrument to convey Steams into the Womb.

Climacterical Years, are certain observable Years which are supposed to be attended with some considerable Change in the Body; as the 7th Year; the 21st, made up of three times seven; the 49th, made up of seven times seven; the 63d, being nine times seven; and the 81st, which is nine times nine; which two last are call'd the grand Climactericks. *Aulus Gellius* tells us, that this Whimsy first came from the *Caldeans*, from whom it is very probable to have come to *Pythagoras*, who was very fond of the Number Seven, and used much to talk of it in his Philosophy.

Climate, is a Space on the terrestrial Globe, comprehended between two Circles parallel to the Equator; so that from the Beginning of one Climate to that of another next to it, there is half an Hour's Difference in the longest Summer's Day; these are also divided into Parallels, which is just half so much; but the former is small enough to distinguish the different Constitution and Temperaments of Air, which this Term is generally used to express.

Clinoides, are four Processes in the Inside of the *Os Sphenoides*, forming a Cavity call'd *Cella Turcica*, in the Middle of that Bone in which lies the *Glandula Pinealis*.

Clinick, is generally used to signify a Quack, or rather an Empirical

Nurse, who pretends to have learned the Art of curing Diseases from Attendance upon the Sick, from *κλίνη*, *Lectus*, a Bed.

Clitoris, is a long and round Body in the Forepart of the *Vulva*, naturally about the Bigness of the *Uvula*; it lies within the Skin; nor does any Part of it appear outwardly, except its Extremity, which is cover'd with a Folding of the Skin, made by the Union of the *Nymphae*, call'd its *Præputium*. The Substance of the *Clitoris* is composed of two spongy Bodies, such as those of the *Yard*; they rise distinctly from the lower Part of the *Os Pubis*, and approaching one another, unite and form the Body of the *Clitoris*, whose Extremity, which is of an exquisite Sense, is called Glans. The two spongy Bodies before they unite, are called the *Crura Clitoridis*, and are twice as long as the Body of the *Clitoris*. It has two Muscles which arise from the Protuberance of the *Ischium*, and are inserted into its spongy Bodies. They erect the *Clitoris* in Coition, after the same Manner as the Muscles of the *Yard* do erect the *Yard*. It has Veins and Arteries from the *Hæmorrhoidal Vessels* and the *Pudenda*; and Nerves from the *Intercostals*, which are likewise distributed thro' all the Parts of the *Vulva*.

Clyffus, is a Term anciently used by the Chymists for Medicines made by the Re-union of different Principles, as Oil, Salt, and Spirit, by long Digestion; but it is not now practised, and so the Term is almost lost.

Clyster, *Clyisma*, or *Clysmus*, call'd also *Enema*, from the Greek *ἐνεμα*, which strictly signifies the Injection of a Liquor into any Part, to wash or cleanse it; but Custom hath

hath now confined this Term to an Injection into the Fundament, to procure Stool.

Coacus, or *Coan*, is frequently applied to *Hippocrates*, or any thing relating to him or his Writings, from his being born in the Island of *Cos* or *Coos*.

Coagulation, from *con*, and *ago*, to drive together, is such a Change made in a Fluid, as is the curdling of Milk, whereby some more viscid Parts form Coalescencies, and leave the rest thinner and more fluid. Whence,

Coalescence, or *Coalition*, is the gathering together and uniting into a sensible Mass, those minute Particles of a Fluid which were before not discernable in it. See *Prop.* 16. under *Particle*.

Coalter Fevers, are such as when two come together periodically, the one invades as the other goes off alternately. See *Bellini* of Fevers.

Cobalt, is a poisonous or corrosive metalline Recrement, containing either Copper or Silver; the same as native *Cadmia*.

Coccus, κόκκος, signifies strictly any Grain or Berry; but by the *Coccus Gnidi*, used to be only understood the Bay-Berry, which grew plentifully in the Isle of *Gnidos*, in the Time of *Hippocrates*.

Cocciferous, from *Coccus*, a Berry, and *fero*, to bear; all those Plants or Trees are so called which have Berries.

Coccygis Os; see *Coxæ Os*, and *Vertebræ*.

Coccygæus, is a Muscle of the *Os Coccygis* arising partly tendinous, and partly fleshy, from the acute Process of the *Os Ischium*, between the Ligament that reaches from thence to the *Os Sacrum*, and one of the Heads of the *Gemini*: from a narrow Beginning it gradually

dilates itself into a thin fleshy Belly, interspersed with some tendinous Fibres. It is inserted into the whole Length of the *Os Coccygis* laterally.

Cochlea, is the last Cavity of the Ear, and resembles the Shell of a Snail, which it signifies. Its Canal, which winds in a spiral Line, is divided into two, the upper and lower by a thin spiral *Lamina*, of which that Part next the Axis is bony, but extremely brittle, and that next the outer Shell is membranous, appearing to be only made of the Auditory Nerve. The upper Canal opens into the *Tympanum*, and the lower into the *Vestibulum*. This is narrower than that, especially towards the Basis of a *Cochlea*, where each is about a Line wide, and the Basis itself is about four Lines diameter.

Cochlea, a Screw, one of the mechanical Powers, defined a right Cylinder cut into a furrow'd Spiral: There are two Kinds hereof, the *Male* and *Female*, the former being cut convex, so that its Threads rise outwards, but the latter channel'd on its concave Side, so as to receive the former, and fall in with the Threads thereof.

Cocction, Concoction or Digestion. The Ancients distinguished Concoction into several Stages, but not with any good Reason; there being no Difference in any thing essential thereunto. The Office of the first Passages indeed, may be more particularly assign'd to Concoction of the grosser Food, the Recrements of which are thrown off by the larger Emunctories; and of the Arteries and lesser Vessels to the Blood only, which lets off its Recrements by smaller Outlets, and chiefly by the Pores of the Skin: but there is nothing materially different in either of these Operations, only the former is more customarily

termed Concoction, and the latter Digestion, tho' the last is also applied to the first Passages. See *Digestion*.

Cocction, in a medicinal Sense, signifies that Alteration, whatever it be, or however occasion'd, which is made in the crude Matter of a Distemper, whereby it is either fitted for a Discharge, or render'd harmless to the Body. This is often brought about by Nature, as we speak, that is, by the *Vis Vitæ*, or the Disposition or natural Tendency of the Matter itself, or else by proper Remedies, which may so alter its Bulk, Figure, Cohesion, or give it a particular Determination, so as to prevent any further ill Effects, or drive it quite out of the Body. And that Time of a Disease wherein this Action is performing, is called its *State of Cocction*.

Cocculus Indicus, is a poysonous narcotick Berry, known mostly now to Poachers, who have got a Trick of intoxicating Fish therewith, so as to take them out of the Water with their Hands; for which Reason they are called *Baccæ Piscatoriæ*, Fishers Berries.

Codia, in Botany, signifies the Top or Head of any Plant, but is by way of Preheminence attributed to the Poppy; wherefore the Syrup made therewith is called *Diacodium*, from *σῆμα*, *cum*, with, and *κώδισμα*, the Poppy-head.

Codoscela, so *Fallopious* calls venereal Buboes in the Groin.

Cæcum. See *Cæcum Intestinum*.

Cælia, from *κοῖλον*, *cavus*, hollow, signifies any Cavity. Hence

Cæliac Artery. The first large Artery so called, which is detached from the descending Trunk of the *Aorta* into the *Abdomen*. It divides into two Branches, the one on the right, the other on the left,

of which the first gives the *Gastrica dextra*, which goes to the Stomach; the *Cistica*, which goes to the Gall-bladder, the *Epiplois dextra* to the *Omentum*, the *Intestinalis* to the *Duodenum*, and to a Part of the *Jejunum*, the *Gastro-Epiplois* to the Stomach, to the *Omentum*, and some Branches to the *Liver*, which enter the *Capsula communis* to accompany the Branches of the *Vena Porta*: The left Branch of the *Cæliaca* gives the *Gastrica dextra*, which is also spread on the Stomach, the *Epiplois sinistra* to the *Omentum*, and the *Splenica* to the Substance of the Spleen.

Cæliac Passion, also for the same Reason is used to express a *Diarrhæa*, or a Flux that arises from the Indigestion or Putrefaction of Food in the Stomach and Bowels, whereby the Aliment comes away little altered from what it was when eaten, or changed like corrupted stinking Flesh.

Cobebation, is the returning any distill'd Liquor again upon what it was drawn from, or upon fresh Ingredients of the same kind, to have it the more impregnated with their Virtues.

Cohesion, from *con*, and *hæreo*, to stick together. This is a Property of Matter that has taken up a great deal of Time, and a great many Volumes to explain, and but with little Satisfaction, until the Dawn of a new Philosophy, and a better Way of Reasoning, from Sir *Isaac Newton*. And because it is of the most Consequence to be understood of any one thing within the Compass of *Physicks*, it will be necessary to take some Pains in its Explication. The famous *Bernouli*, in his Book *de Gravitate Ætheris*, endeavours to account for this from the Pressure of the Atmosphere, and strengthens his Conjecture by the known

known Experiment of the Cohesion of two well polish'd Marbles together, which will notwithstanding very easily and speedily fall asunder, when put into the exhausted Receiver, where the external Pressure of the Air is taken off: and to this uniform Pressure it is conjectured, that all Parts and Parcels of Matter upon the Earth are kept together in the Form under which they exist. But how satisfactorily soever this may account for the Cohesion or Union of Compositions, or greater Collections and Parcels of Matter, yet it is wanting in those minute Contacts of lesser Bodies, some of which cohere with a Force so much greater than the Pressure upon them can be imagined to influence; and on which Cohesion, the different Degrees of Solidity and Fluxility do so depend, that there is a Necessity of Recourse to some other Cause. And this Sir *Isaac Newton* has taught to be a Property in all Matter, which he calls Attraction, (which see;) whereby the Particles of all Bodies do draw one another with a certain Force, which acts most intently when the Particles touch one another. Dr. *Cheyne*, upon this Theory, further takes into Consideration the Plainness of the Surfaces of the cohering Parts of Matter, in order to account for this Property; which indeed seems a necessary Requisite. He thinks we may suppose some of the primary Atoms of Matter of which Bodies are constituted, to be terminated with plain Surfaces on all Sides, and such produce Bodies of the strictest and firmest Cohesion: others may be terminated partly with Curve as well as partly with plain Surfaces, and these combin'd may produce Bodies of a middle Degree of Cohesion; and such as

have Surfaces entirely Curves may produce Fluids, &c. But this alone will not do, for tho' it will bring Bodies to immediate Contact, it will not keep them there, nor hinder them from being separated by any Force, how small soever: And the Fluids which surround our Globe, as the Particles of Light and Air, will get in between the Surfaces of Bodies when they are at any Distance greater than the Diameters of the constituent Particles of those Fluids, and so by their lateral Pressure will destroy the Efficacy of the attractive Force by which Bodies cohere: For since Light and Bodies act mutually upon one another, and that the Particles of Air endeavour to recede one from another, they will render that Part of Attraction whereby Bodies cohere, altogether insensible at any Distance greater than the Length of the Diameters of the Particles of these Fluids: so that the Force by which Bodies cohere, cannot act but at very small Distances; and is much greater in immediate Contact, than at any Distance, how small soever.

Coincident, from *con* and *incido*, to fall in together. Those Symptoms or Signs of a Disease are so called which are not to be relied on separately, but in Conjunction amount to a Discovery of the Disease. The Pulse is also said to coincide, when a Stroke happens beyond Expectation, and is by *Galen* opposed to a deficient Pulse. *Coincident*, is also by physical Writers used in much the same Sense as the former Part of the Explanation to the foregoing Term.

Coitus, signifies strictly the Conjunction of Male and Female in the Act of Generation; whence some Chymists use it for the Union of some Substances with one another

by Incorporation or Mixture ; and *Scribonius Largus* particularly expresses by it, the boiling up different things into a Consistence for Plaisters.

Colcothar, is the dry Substance which remains after Distillation, but commonly meant of the *Caput Mortuum* of Vitriol.

Cold, is one of the primary Qualities of Bodies, and is such a State of the minute Parts of any Body, in which they are more slowly or faintly agitated than those of the Organs of Feeling ; so that it is only a relative Term, the same Body being liable to be pronounced hot or cold as its Particles are in a greater or lesser Motion than those of the sensory Organs. As for the Disputes concerning its positive and privative Nature, and such like useless Distinctions, they are not worth examining. See *Freezing*.

Colla, κόλλα, *Gluten*, signifies any Thing glutinous ; whence the Isinglass is called *Ichthyocolla*, from ἰχθυός, *Piscis*, a Fish, and the former, because it is a Glue made from the Flesh of a Fish. And hence

Colleticus, is used by some Writers to express any thing which hath a glutinous Faculty.

Collection of Humours, is when the Matter of a Disease or pure pus, comes together slowly, and is deposited by Degrees upon any Part ; but when the same thing happens of a sudden, 'tis call'd a Fluxion of Humours.

Collicia, is used by *Steno*, de *Musc. & Gland.* for the *Carunculæ Lachrymales* ; which see.

Colliquamentum, is a Term first made use of by *Dr. Harvey*, in his Application of it to the first Rudiments of an Embryo in Generation.

Colliquation, is the melting of any thing whatsoever by Heat : but

is more particularly used to express such a Temperament or Disposition of the animal Fluids as proceeds from a lax Compage, and wherein they flow off thro' the secretory Glands, and particularly thro' those of the Skin, faster than they ought ; which occasions Fluxes of many kinds, but mostly profuse, greasy, clammy Sweats. The Remedy of this is in giving a better Consistence to the Juices by Balsamicks and Agglutinants, and hardening the Solids by Subastringents. Hence a

Colliquative Fever, is such an one as is attended with a *Diarrhæa*, or profuse Sweats, from too lax a Contexture of the Fluids.

Collision, from *collido*, to slide together, or against one another ; is such a Motion of two or more Bodies, as is in contrary Direction, whereby they meet and clash, so as to break off sometimes some Parts of each other.

Collum, signifies properly only the fore-part of the Neck : And the *Vagina*, and opening into the Womb, is sometimes called *Collum Uteri*.

Collyrium, from κολύω, *inhibeo*, to check, and ῥῆς, *Fluxio*, a Defluxion ; is a Medicine to check any Fluxion of Humours, of which there were antiently two Forms, one dry, like a Lozenge, sometimes distinguished by the Name of *Sief*, and the other Liquid : but Custom now applies this Term only to particular Applications for the Eyes.

Colon : This is the greatest and widest of all the Intestines, and about eight or nine Hands breadth long. It begins where the *Ilium* ends, in the Cavity of the *Os Ilium* on the right Side ; from thence ascending by the Kidney on the same Side, it passes under the concave Side of the Liver, to which it is sometimes

times tied, as likewise, to the Gall-bladder, which tinges it yellow in that Place; then it runs under the Bottom of the Stomach to the Spleen in the left Side, to which it is also knit; from thence it turns down to the left Kidney; and thence passing in form of an S, it terminates at the upper-part of the *Os Sacrum* in the *Rectum*. At the Beginning of this Gut there is a Valve formed by the Production of the inmost Coat of the Intestines in this Place; it hinders the Excrements which are once fallen into the *Colon* from returning again to the *Ilium*. It has a strong Ligament, which running along its upper-side from the *Ilium* to the *Rectum*, strengthens it against the Weight of the Excrements, and draws it together into Cells, which with the *Valvulae Conniventes* retard the Passages of the Excrements, that we may not be continually obliged to go to Stool. The fleshy Fibres of its second Coat are greater and stronger than those of the other Intestines, because a greater Strength is requisite to cause the Excrements to ascend. The chief Design of the *Colon's* surrounding the *Abdomen*, and with the *Rectum* touching all the Parts contained in it, seems to be, that by immediate Fomentation with Clysters, we might ease them of their Maladies.

Colour, is a very considerable *Phænomenon* in Nature that has long perplexed Philosophers to account for; but as far as our Senses and Capacities of Reasoning therefrom will conduct us in the Properties and Agency of such minute Parts of Matter as are herein concerned, Sir *Isaac Newton* seems to have carried us: His Discoveries hereupon are to this Effect. 1. That Light consists of an infinite Number of Rays, right-lined and parallel, but of different Degrees of Refrangibility

when meeting with a different Medium. 2. Each Ray according to its Degree of Refrangibility, when so refracted, appears to the Eye of a different Colour. 3. The least refrangible Rays appear of a deep Scarlet, the most refrangible appear of a Violet-blue, the intermediate proceeding from Scarlet to yellowish, then to Light-green, and so to blue. 4. The Colours arising from the different Refrangibility of Light, are not only the more noted Colours of Red, Yellow, Green, Blue, but also all the inter-mediate of Red to Yellow, of Yellow to Green, &c. differing as the Degrees of Sound from grave to acute; in which there are not only the Notes of common Denomination, but also indefinite inter-mediate Degrees of Sounds, which are as distinct different Sounds as the other. 5. Whiteness (such as the Sun's Light appears) containing all these Degrees of Refrangibility, is consequently made up of all the above-mention'd Colours. 6. Simple or homogeneous Colours are such as are produced by homogeneous Lights or Rays, that have the same Degree of Refrangibility; and mixt Colours are such as are produced by Rays of different Refrangibility. 7. Rays of the same Refrangibility produce the same Colour, which Colour is not alterable by repeated Refractions, only made more strong or faint, as the Rays are united or scattered. 8. All Bodies appear of this or that Colour, according as their Surfaces are adapted to reflect only the Rays of such a Colour, or (at least) in more Plenty than the rest.

Colophonia, or according to *Scribonius Largus*, *Colofonia*, is now commonly used for any Pitch or Rosin, made by the Exhalation or drawing off the thinner Parts of terebinthinous Juices; tho' *Paracelsus*

fas seems to mean by it what is now prescribed by the Name of *Terebinthina costa*: but the Antients, and particularly *Galen*, seemed to understand by it a soft Kind of Mastich, from *Chio*, probably the same as our *Chio Turpentine*.

Colostrum, is the first Milk in the Breasts after Delivery, according to some Authors; but *Bartholine* applies it to an Emulsion made by the Solution of Turpentine with the Yolk of an Egg.

Colubrina, the Bistort, or Snake-Weed, is sometimes so called; and the

Colubrinum Lignum, is sometimes applied to the Snake-Root that we have from *Virginia*, because of its suppos'd Virtues against the Bite and Poison of Serpents.

Colum, is used for a Strainer of Liquids, as *Cribrum* is of Solids.

Columba, every one knows properly to signify a Dove: but some Enthusiastick Chymists have made it stand for several of their Preparations, from some imaginary Likeness of their Virtues to those of this Bird.

Collumella, is sometimes applied to an Inflammation of the *Uvula*, when it is extended in Length like a little Column.

Columnæ Cordis, the Pillars of the Heart. See *Heart*.

Columnæ Nasi, is that fleshy Part of the Nose which is prominent in the middle.

Coma, signifies a Propensity to Sleep, not unlike what is meant by a *Lethargy*, which is not so aggravated with an entire Loss of Sensation as in a confirmed *Apoplexy*.

Coma somnolentum, is an uniform deep and distempered Sleep, from which the Patient being awakened, suddenly relapses into it again.

Coma vigil, is an insuperable Disposition to sleep, from which the Person frequently awakes as from a frightful Dream.

Commetica, the same as *Fucus*, or *Ars fucalis*, are such Things which give Beauties not before in being, as Paints to the Face; differing from Cosmeticks, which are only to preserve Beauties already in Possession.

Communicant, is by *Bellini* applied to Fevers of two Kinds afflicting the same Person, wherein as one goes off the other immediately succeeds.

Completion, is by the ancient Writers used in various Acceptations; but latterly it signifies only the same as a *Plethora*; which see.

Complexion, now generally signifies the same with Temperament; as we say such a one is of a sanguine, a phlegmatick, or a chole-rick Complexion; tho' heretofore it hath been used in the same Sense as *Complication*; which see.

Comitialis Morbus. See *Epilepsy*.

Comminution, is grinding or breaking any Matter into smaller Particles.

Common Duct. See *Jecur*.

Common Receptacle. See *Lactéal Veins*.

Common Sensory, is the Origin of the Nerves, or wheresoever the reflux Motion of the nervous Fluid gives the Perception of external Objects.

Compage, is any Collection or Composition of Matter, modified into a particular Form, to answer some particular End.

Comparative Anatomy, is that kind of Anatomy as considers the same Parts of different Animals with relation to that particular Structure and Formation as is most suited to the Manner of living, and Necessities

cessities of every Creature : As in the comparative Anatomy of Stomachs, for Instance, it is remarkable, that those Creatures which have the Opportunities of frequent Feeding, have their Stomachs very small in Comparison to some Creatures of Prey, which may probably be under a Necessity of Fasting for a great while, and therefore have Stomachs large enough to hold Food sufficient for a long Time.

Complexus, is a Muscle of the hinder Part of the Head that arises from the transverse Processes of the *Vertebrae* of the Neck, and ascending obliquely, adheres to the *Spine* of the same *Vertebrae*, and is inserted into the *Occiput*. It moves the Head backwards to one Side.

Complication of Diseases, is when a Person labours under divers Distempers at a Time, and more especially if they have any Affinity to one another; as the Dropsy, Asthma, and Jaundice, or the like, which frequently happen together to the same Person.

Composition : Besides the confused Manner in which the vulgar Chymists use this Term, not worth our Notice, it is now seldom used but for Medicines which take in several Ingredients in Opposition to *Simple*, tho' heretofore it hath been also applied in the same Sense as *Complication*.

Compound Medicine, is what consists of more Ingredients than one.

Compress, is the Way by which with Bolsters of Linnen Rags, Surgeons suit their Bandages for any particular Part or Purpose; and hath so long ago as *Avicen* been used for such Contrivances as prevent the Flux of Matter upon any Part.

Conarion, also called *Glandula Pinealis*, (*Des Carte's* imaginary

Seat of the Soul) is a small Gland about the Bigness of a Pea, in the upper Part of that Hole in the third Ventricle of the Brain, called the *Anus*, and is tied by some Fibres to the *Nates*. It is composed of the same Substance as the rest of the Brain, and is of the same Use.

Conatus, in Matter without Motion, is the Force of Attraction or Gravitation; which see: And in a Body in Motion, is that Disposition or Aptitude to go on in a right Line, if not prevented by other Causes.

Concatenation, is such an Union or Repetition of Parts in a Body, as those of a Chain, from *cum*, with, and *Catena*, a Chain.

Concave, is any thing made hollow on one Side.

Concentration, is a crouding together any fluid Matter into as close a Form as it is capable of; or bringing together into as close a Contact as possible any separate Particles: But the Generality who make Use of this Term, have a very vague Idea thereof, of no distinct Signification.

Conception. The great and many Difficulties which attend the most plausible Account of the first Formation of the Parts of an Animal, and Beginning of Motion in its Fluids, and the curious Observations of many Persons, have been sufficient Motives to most of late Years to throw off the Notion of equivocal Generation. But tho' Reason and Experience convince us that all the Parts of an Animal did exist, and its Fluids were in Motion before Generation; yet whether the *Animalcule* was lodged in the Seed of the Male, or the Female *Ova*, is Matter of Controversy. But the Arguments on both Sides leave this without Question, that the Female *Ovium* is a proper *Nidus* for the
Avi-

Animalcule, in the Male Seed. There are such a prodigious number of little Creatures, like so many Tadpoles, swimming every way in the Male Sperm of all Animals, as is an amazing Sight: Nor is it less curious to observe their languid Motion in such as are tainted with the Venereal Disease, and how they recover their former Briskness as the Distemper abates. These Animals are so small as to be computed that 3,000,000,000 of them are not equal to one Grain of Sand, whose Diameter is but the $\frac{1}{60000}$ of an Inch. Whilst the Seed thus abounds with *Animalcules*, there are not the least Rudiments of an Animal to be seen in any Part of the *Ovaria*; yet these likewise have a principal Part in Generation, for without them there is no Conception: and even Bitches that have been spay'd forget their usual Appetites, as if they were the only Spurs to Venery. The yellow Substance which grows in the *Ovaria* of Cows is very remarkable; it has a small Dent, and a Cicatrice in its middle, as if the *Ovum* had dropped out there, according to *Malpighi*. When the *Fætus* is very small, this is very large; but as the *Fætus* grows bigger and bigger, this decays, and at last vanishes: nor is it to be seen before Conception, and in one Testicle only when there is but one Calf. If all the *Animalcules*, as a great many of them do fasten and grow to the Womb till such time as by their Bigness or Want of Nourishment they made one another drop off, Women could not be sensible of their Evacuation, for they must be falling off, thro' the whole time of their being with Child. But when the *Animalcule* gets into an *Ovum* fit to receive it, and this falls thro' one of the *Tubæ*

Fallopianæ into the Womb, the Humours which distil thro' the Vessels of the Womb, penetrating the Coats of the Egg, swell and dilate it, as the Sap of the Earth does Seeds thrown into the Ground. Or else the Branches of the Veins and Arteries whereby the Egg was tied in the *Ovarium* (which probably make the umbilical Vessels) being broken, fasten with the Vessels of the Womb: then the *Placenta* begins to appear like a little Cloud upon one Side of the external Coat of the Egg; and at the same time the *Spine* of the *Embryo* is grown so big as to be visible; and a little after the *Cerebrum* and *Cerebellum* appear like two small Bladders, and the Eyes next stand gogling out of the Head; then the beating of the Heart, or *Punctum Saliens*, is plainly to be seen, and the Extremities discover themselves last of all. See *Generation, Parts of*, proper to Women.

Conception False. See *Mola*.

Concha. See *Cochlea*.

Concoagulation, is used by Mr. Boyle to express the CrySTALLIZING of Salts of different Kinds together, where they shoot into one Mass of various Figures, suitable to their respective kinds.

Concoction, commonly signifies the same as Digestion, tho' the latter is more generally confined to what passes in the Stomach; whereas this also is applied to what Alterations are made in the Blood-vessels, which may be called the second Concoction, and that in the Nerves, Fibres, and minutest Vessels, not improperly called the third, and last Concoction.

Concrete, and *Concretion*, from *cum* and *cresco*, to grow together, is the Composition or Union of several Particles together into a visible

ble Mass, whereby it becomes of some particular Figure and Property.

Concupiscence, strictly signifies the craving of any Appetite, but is most commonly applied to that of Venery.

Condensation, is confining or driving any Fluid into a less Compass in the same Manner as explained under *Concentration*; but its usual Signification is such a Stoppage and Collection of Vapour as is made by the Top of an Alembick, whereby it is returned in the Form of a Liquid; or as is raised into a Head or Receiver, there to harden into a permanent and solid Substance, as in Sublimations of all kinds.

Condenser, a strong metalline Vessel, wherein to crowd the Air, by means of a Syringe fasten'd thereto. The Design of it is to be converse of the Air-Pump; so that as by means of that, Bodies are included in a highly rarified Air, this might give an Opportunity of committing them to Air highly condensed.

Condimentum, and *Conditura*, are used to signify those Pickles or Liquors, in which other Bodies are preserved from Decay: the Person doing this is the *Conditor*, and the Thing so preserved the *Conditum*. But all this Branch of Pharmacy is now the Business of him we call a Confectioner.

Conductor, is an Instrument to put up into the Bladder, to direct the Knife in cutting for the Stone: from *conduco*, to lead.

Condyloma, from *κόνδυλος*, *Digitus Articulatus*, is the knitting of the Bones in Articulation, but more particularly those of the Fingers.

Condylomata, are a soft kind of Tumour arising on the internal Coat of the *Anus*, unattended with

Pain, and of the natural Colour of the Skin.

Condyli, are the little Knots or Protuberances of those short Bones which make them thick about their Articulations, as on the Knuckles.

Cone, is a solid Figure, whose Base is a Circle, and is produced by the Revolution of the Plane of a right angled Triangle round the perpendicular Leg; and in Anatomy a Conical Vessel is such an one as from one End continually grows narrower towards the other, till it terminates almost in a Point, and such are the Arteries, except in a very few Places, where for manifest Ends, they become Cylindrical. In what Respects this affects the circulating Fluid. See *Circulation* and *Aorta*.

Confection, may signify any Composition, from *cum*, and *facio*, to make up together; but it is generally applied to a particular Sort of Medicine, compounded with dry Ingredients of many Kinds, powder'd and made into the Consistence of a thin Electuary with Honey or Syrup.

Confluent, flowing together, are any Liquors joining into a common Stream; but this is generally used for that Sort of the Small-Pox, wherein the Pustles run into one another.

Confluxio, *σὺρφοια*, is used much by *Hippocrates* and his Interpreter *Galen*, in the same Sense as we use *Consent*, and *transpirable*, from a Notion that Parts at a Distance have mutual Consent with one another, and that they are all perspirable by many subtile Steams. *Paracelsus*, according to his Way, expresses the former by Confederation.

Conformation, is used to express that particular Make and Construction which is peculiar to every Individual:

dividual; and hence a *mala Conformatio* signifies some Fault in the first Rudiments, whereby a Person comes into the World crooked, or with some of the *Viscera* or Cavities unduly proportioned. Thus many are subject to incurable Asthma's, from too small a Capacity of the *Thorax*, and the like.

Conscitrices, or *Conscitricæ*, are used by many Authors for such Women who have learned to titulate one another with their *Clitoris*, in Imitation of venereal Intercourses with Men.

Confuse Febras, are such Fevers which come together alternately in the same Persons, but keep not their Periods and Alterations so exactly as to be easily distinguished from one another.

Congelation, from *congelō*, to freeze together, expresses the same as Crystallization, because in that the Salts shoot together, as Ice in Freezing. It is also applied to Liquors which will not properly freeze, as by *Scribonius Largus* to Oils; and by *Rulandus* with many others to any Fluids, which by standing become of a thicker Consistence. By some it is likewise applied to Distempers that occasion Stiffness and Inaptitude to Motion; and others call those who seem to lose their Senses in Extacy, *congelati*, Persons froze.

Congestion, the same as Collection of Matter, as in Abscesses and Tumours.

Congeries, from *congrego*, to gather together, is a Collection or Parcel of Bodies gathered together into one Mass or Composition.

Conglobate, and

Conglomerate Gland. See *Gland*.

Conglutination, from *cum*, together or with, and *Gluten*, Glue; is the uniting Parts of the Body toge-

ther by Means of their natural Moisture, and by the Help of Bandage, or by the Supply of viscid Particles; and in the last Acceptation it differs little from Accretion or Nourishment.

Congruity, is used to express that Aptitude in some Bodies to unite and incorporate from a Similitude or Fitness of their Figures, as Incongruity is an Unfitness of their Surfaces to join together. Thus Quicksilver will unite with Gold, and many other Metals, but will roll off from Wood, Stone, Glass, &c. and Water that will wet Salt, and dissolve it, will slip off from Tallow without adhering to it, as also from a dusty Surface, and from the Feathers of Water-Fowl. Two Drops of Water, or of Mercury, will on Contact immediately join and coalesce; but Oil of Tartar poured upon Quicksilver, and Spirit of Wine on that Oil, and Oil of Turpentine on that, and Air over all, will remain in the same Vessel without any Manner of Union or Mixture with each other; and the Cause of this is, that the Figures of some Bodies will not admit other Bodies near enough to be within their Spheres of Attraction, whereby they cannot join and cohere; but where their Fitness of Figure will let them approach near enough to feel each others attractive Power, they close and hold together.

Coniferous, from *Conus*, a Cone, and *fero*, to bear; are such Trees, Shrubs, or Herbs, as bear a squamose scaly Fruit, of a woody Substance, and a Figure approaching to that of a Cone, in which there are many Seeds; and when they are ripe, the several Cells or Partitions in the Cone gape or open, and the Seeds drop out. Of this kind

kind are the Fir, Pine, Beech, and the like.

Conjugation, being by some used in the same Sense as *Conjugium*, and *Copulation*: *Paracelsus* and some other Chymists apply it to particular Mixtures of several things together.

Conjuncta Causa, is the same as *Continens*, which see; and *Conjuncta Signa* or *Symptomata* are, according to *Bellini de Febris*, such as subsist during the Course of a Distemper; and are sometimes also called *Concomitantia*, in distinction from the *Antecedentia*, and *Subsequentia*. And,

Conjuncti Morbi, are when two or more Diseases come together, which are distinguished into *Connexi* and *Consequentes*, the former subsisting at the same time, and the latter following one another.

Conjuration, according to *Paracelsus*, expresses the Ceremony directed by some Enthusiasts for the Cure of Distempers, wherein Persons laid themselves under Obligations by Oath, and certain Imprecations; and whence probably comes our common Term of *Conjurer*, who is a Person supposed to deal in diabolical Inchantments.

Connatus, συγγενής, used much by *Hippocrates*, for what is born with a Person; the same with *congenite*; 25

Connutritus, συντροφεύς, is what becomes habitual to a Person from his particular Nourishment, or what breaks out into a Disease in process of Time, which gradually had its Foundation in the first Aliments, as from sucking a distemper'd Nurse, or the like.

Consequentia, the same as *Subsequentia*; which see under *Conjuncta Signa*.

Conservativa Medicina, called by the Greeks φυλακτική and υγίεινή,

is that Part of a Physician's Care that preserves a Person in Health, by preventing the Attack of a Distemper, in Distinction from the Pharmaceutick, which applies Remedies to the diseased.

Conjunctiva Tunica. See *Adnata Tunica*.

Conniventes Valvulae. See *Intestines*.

Consent of Parts, is that Perception one Part has of another at a Distance by Means of some Fibres and Nerves which are common to them both, or communicated by other Branches with one another: and thus the Stone in the Bladder, by vellicating the Fibres there, will affect and draw them so much into Spasms, as to affect the Coats of the Bowels in the same Manner by the Intermediation of nervous Threads, and cause a Cholick there; and also extend their Twitches sometimes so far as the Stomach, and occasion grievous Vomiting. And the Remedy therefore in such Cases is to regard the Part originally affected, how remote and grievous soever may be the Consequences and Symptoms in other Places.

Conserve, is a Form of Medicine contriv'd to preserve the Flowers, Herbs, Roots, Peels, or Fruits of several Simples, as near as possible to what they are when fresh gathered. And this is done with Sugar; a triple Quantity to those which are most moist and corruptible, and a double Quantity to such as are least so. See the *Dispensatory*.

Consistence, from *consisto*, to stand together, is the particular Degree of Hardness or Softness of any Body, when joined with an Adjective expressive of that Condition: but when we say a

Consistent

Consistent Body, it is such an one as will preserve its Form without being confined by any Boundary, and has no Degree of Fluxility.

Consolidate, from *cum* and *solidus*, to harden together, is generally used to express the uniting and hardning of broken Bones, or the Lips of Wounds. And the Medicines useful in these Intentions are commonly called, *Consolidating Medicines*.

Constipation, and *Constriction*, from *constringo*, to bind together, is the binding up Wounds, or closing the Mouths of Vessels so as to prevent any Efflux of their Contents.

Constrictores, from the same Derivation, are Muscles of the Nose, called also *Depressores Labii superioris*, Depressors of the upper Lip, which arise from the fourth Bone of the upper Jaw, immediately above the Gums of the *Dentes Incisores*, and ascending are inserted into the Roots of the *Alæ Nasi*, and superior Parts of the upper Lip; they draw the upper Lip and *Alæ Nasi* downwards. There is also the

Constrictor Labiorum, which runs its Fibres quite round the Lips, and in Action purses them up; for which Reason it is called likewise *Osculatorius*, or the Kissing Muscle. All the Sphincters are of this kind.

Constituent Particles, of any natural Body, are those Particles of which that Body is composed.

Consumption, from *consumo*, to waste; in general signifies a Defect of Nourishment, or the decaying of the Body, and particularly by a Waste of muscular Flesh: It is frequently attended with a Hectick Fever; and is divided by Physicians into several Kinds, according to the Variety of its Causes, which must

carefully be regarded in order to a Cure. See *Morton de Phthisi*, and the *Theatrum Tabidarum*.

Contact, or *Contiguity*, from *contango*, to touch together, is the joining one Surface to another without any Interstice; and hence because very few Surfaces are capable of touching in all Points, and the Cohesion of Bodies is in Proportion to their Contacts, those Bodies will stick fastest together which are capable of the most Contact.

Contagion, from the same Derivation, is the communicating or transferring a Disease from one Body to another, by certain Steams or Effluvia transmitted from the Body of a sick Person. Some Diseases are thus propagated by an immediate Contact or Touch, as the Madness of a Dog, which is communicated by biting; and the Venom of the venereal Disease, which is transmitted from the infected Person in the Act of Copulation: and sometimes a Distemper is conveyed by infected Cloathes, as the Itch; and there are some Contagions transmitted thro' the Air to a great Distance, as the Plague, and other pestilential Distempers; in which Cases the Air is even said to be contagious, that is, full of contagious Particles. See *Poison*.

Contents, is the Matter contained in any Vessel, Canal, or the like.

Contingent, is applied to what happens in the Course of a Disease, without any previous Signs, or contrary to the common Tenour of such a Distemper.

Continent, Cause of a Distemper, is that on which the Disease depends so immediately, that it continues so long as that remains, and no longer: As a Stone in the Bladder may be the *Continent* Cause of the Suppression of Urine.

Continent

Continent Fever, is that which goes on to a Crisis without any Intermission or Remission; and a

Continual Fever, is that which sometimes remits, but is never quite off; that is, the Patient is sometimes better, but never quite free of the Fever. These Significations do not strictly answer to the Import of the Terms, for which Reason no Notice is taken of their Derivation.

Continuity, is that Texture or Cohesion of the Parts of an animal Body which they naturally enjoy, and upon the Destruction of which by foreign Accidents, there is said to be a *Solution of Continuity*.

Contortion, signifies the twisting a Member from its natural Situation; which happens in most Dislocations; and sometimes in a very extraordinary manner to the Head, from some Disorders upon the Muscles of the Neck.

Contraction, from *contraho*, to draw together, expresses the shrinking up of a Fibre, when it is extended: and

Contractile, is such a Body as, when extended, has a Property of so drawing itself up again to that Dimension it was in before Extension. For the Cause of this Property, which is of the utmost Consequence to a right Understanding the animal Oeconomy; see *Fibre*.

Contra-Fissure, is when any one has received a Blow on one Side of a Limb, so as to have the Bone crack'd on the contrary; but whether this ever happens, is much to be question'd: from *contra*, on the other side, and *Fissura*, a Crack.

Contra-Indication, is an Indication which forbids that to be done, which the main Scope of a Disease points out at first.

Contusion, is a Bruise, which

stagnates the Juices in the *Capillaries* for some Time.

Convalescence, is that Space from the Departure of a Disease, and the Recovery of the Strength which was lost by it.

Converge, or *Converging Rays*, are those which go from divers Points of the Object, and incline towards one another.

Convex, from *conveho*, to carry out, is the external round Part of any Body opposite to the hollow, and commonly in Anatomy called Protuberance.

Convulsion, from *convello*, to pull together, is an involuntary Contraction of the Fibres and Muscles, whereby the Body and Limbs are preternaturally distorted. A great many Disorders are included under this Term, having different Names according to the Parts they affect, or the Causes they are supposed to arise from; and the Causes hereof being manifold, all Considerations with regard to a Remedy, are entirely to be guided by those Distinctions. See *Epilepsy*.

Coolers: These may be consider'd under two Divisions: 1. Those which produce an immediate Sense of Cold; which are such as have their Parts in less Motion than those of the Organs of Feeling. And 2. Such as by a particular Viscidity or Grossness of Parts, give a greater Consistence to the animal Fluids than they had before, whereby they cannot move so fast, and will therefore have less of that intestine Force on which their Heat depends. The former are Fruits, all acid Liquors, and common Waters; and the latter are such as Cucumbers, and all Substances producing Viscidity: both may be used by a knowing Physician to answer many good

Intentions in Medicine ; and both do a great deal of Mischief in the Hands of the Ignorant.

Copula, whence *Copulation*, strictly signifying the Conjunction of Male and Female in the Act of Generation, but used by some Physical Writers for a peculiar Mixture of some Bodies with others.

Cor. See *Heart*.

Coracobrachialis, from *κῶρυξ*, *Corvus*, a Crow, but here signifying only the Beak, from its Shape, and *Brachium*, the Arm ; is a Muscle that arises from the *Processus Coracoideus* and *Scapula*, by a tendinous Beginning ; and passing over the Articulation, is inserted into the middle and internal Part of the *Humerus* ; and with the *Deltoides* and *Supra-Spinatus*, lifts the Arm upwards.

Coracobyoideus. Dr. Keil says this is wrong named, for it arises not from the *Processus Coracoideus*, but from the upper Edge of the *Scapula*, near its Neck, and ascending obliquely under the *Mastoidaeus*, is inserted into the *Os Hyoides*, which it pulls obliquely downwards. The Belly of this Muscle is a little tendinous in the middle, that the Vessels which go to the Head be not compressed when it acteth.

Coracoideus, is a Process in the Shoulder-blade in the Shape of a Crow's-Bill, from the foregoing Etymology.

Corallinum, is a Distinction given by *Paracelsus* to a mercurial Preparation, which he calls *Arcanum Corallinum* ; being the red Precipitate deflagrated with Spirit of Wine.

Cordial. Whatsoever raises the Spirits, and gives sudden Strength and Chearfulness, is termed Cordial, or comforting the Heart. To understand the Operation of this upon

a human Body, it is necessary to consider, that a Languor or Faintness, must either be the Consequence of too much Exercise, too long Watching, or too great a Hurry of the animal Functions, as in some Distempers ; all which so far waste or dissipate the nervous Fluid, or animal Spirits, that the Solids cannot repeat with wonted Vigour their necessary Motions ; or such Depression must arise from the Obstruction of some natural Evacuation, and generally that of Perspiration, from external Cold, which lays a Load upon the Constitution, and produces the same Sensation, as a Diminution of Strength with the usual Weight. In both these Cases, the manner by which a Cordial acts, is the same, since it must produce its Effects by adding to the Springiness and Force of the Fibres. And as this Change is most remarkable from spirituous Liquors ; it may be of use, first to examine how they come to obtain such a Denomination, whereby we may the better understand how such Medicines taken in Substance operate in producing the same Effect ; and this will be found to consist only in their Subtilty, and Fineness of Parts. It may be sufficient therefore to attend to every one's Experience, that the more spirituous any thing is which enters into the Stomach, the sooner a Person feels its cordial Effects : For that Increase of Vigour which a Man obtains from common Food, altho' it is the most natural and durable, is not immediately enough obtained, to procure the Instruments thereof the Appellation of Cordial ; since they must pass thro' several Commixtions or Digestions, and be a long Time ere they arrive to such a Fineness as to be dispensed to the Nerves ;
whereas

whereas a spiritous Substance is so fine and subtile in all its Parts before it is taken, that it seems to enter and soak into the Nerves as soon as it touches them; whereupon their Vibrations are invigorated, and all Sense of Faintness is removed. And upon the same Account it is, that Volatiles affect the Nose, being so extremely subtile as to penetrate the *Olfactory* Nerves as soon as they come at them. And thus it is, that the Effluvia or Steams of Flowers, Fruits, and all Things deemed Cordial, operate upon the Organs of Smelling.

Cornea Tunica, is the third Coat of the Eye, so called from its Substance, resembling the Horn of a Lanthorn; it is situate in the forepart, and surrounded by the White. It has a greater Convexity than the rest of the Globe of the Eye; and is composed of several parallel *Laminae*, which are nourished by many Blood-Vessels, so fine, as not to hinder even the smallest Rays of Light from entering the Eye; and it has a most exquisite Sense, that upon the least Pain, the Tears might be squeezed out of the *Lacrymal* Gland, to wash off any Filth, which by sticking to the *Cornea*, might render it cloudy or dim.

Corniculate Plants, are such as after they are blown in Flower, produce many distinct and horned Pods, or Seed-Vessels, called *Siliquæ*, and the Plants also for that Reason, *Siliqueous* Plants.

Corollary, is an useful Consequence drawn from something which had been before advanced or demonstrated, often used in Geometry.

Coronalis, is the first Suture of the Skull. It reaches transversely from one Temple to the other; it joins the *Os Frontis* with the *Offa*

Parietaria. This is open the Breadth of a Finger or two in the Middle in young Children, but grows closer with Age; altho' sometimes by Convulsion-fits, or a bad Conformation, it not only closes in Children, but the Edges shoot over one another; which is what the good Women call Head-mould-Shot, after which they seldom live long.

Coronary Vessels, are the two Branches which the great Artery spreads over the Out-side of the Heart, for its Supply with Blood and Nourishment before it pierces the *Pericardium*. See *Heart*. The Arteries and Veins which surround the left Orifice of the Stomach, are likewise by some Anatomists so called.

Corone, is a sharp Process of the lower Jaw-bone, so called from its Likeness to a Crow's Beak, from *κρόαξ*, *Corvus*, a Crow. See *Maxilla inferior*.

Corpora Cavernosa. See *Generation*, Parts of, proper to Men; and

Corpora Nervosa Penis, called also *Corpora Cavernosa*; these are two spongy Bodies arising distinctly from the lower Part of the *Os Pubis*. A little from their Root they come close together, being only divided by a Membrane, which at its Beginning is pretty thick, but as it approaches to the End of the Yard, grows thinner and thinner, where the *Corpora Cavernosa* terminate in the Middle of the Glans. The external Substance of these spongy Bodies is hard, thick and white. The internal is composed of small Fibres and Membranes, which form a sort of loose Network, upon which the Branches of the Blood-Vessels are curiously spread. When the Blood is stopp'd in the great Veins of the *Penis*, it runs thro' several small Holes in the

sides of their capillary Branches into the Cavities of the Net-work, by which means the *Corpora Cavernosa* become distended, and by that Means the *Penis* erected.

Corpora Pyramidalia, are two Protuberances of the under Part of the *Cerebellum*, about an Inch long, which from their Resemblance to a Pyramid in Shape, are thus called: and on each Side of them towards the lower End there are two more, which because of their Figure also in the Likeness of an Olive, are called *Corpora Olivaria*. Further, when the Blood hath discharged itself of the Seed in the Testicles, it returns by the Veins, which rising in several Branches from the *Testes* tend towards the *Abdomen* in the Production of the *Peritonæum* the same Way the Arteries come down: In their Progress the Branches frequently inosculate, and divide again, till they come near the *Abdomen*, and then they all unite in one Trunk, and there, because of their Shape, are also called *Corpora Pyramidalia*.

Corpus, Body, strictly expresses the same as Matter; which see.

Corpus Callosum, is the upper Part or Covering of the two lateral Ventricles, appearing immediately under the Process of the *Dura Mater*, below the Depth of all the Circumvolutions of the Brain, and formed by the Union of the medullary Fibres of each Side.

Corpus Glandulosum. See *Prostatæ*.

Corpus Reticulare. See *Cutis*.

Corpuscles, a Diminutive of *Corpus*, Body; signify the minute Parts or Particles, or Atoms, of which any Body is constituted. And that way of Reasoning which endeavours to explain Things, by the Motion, Figure, and Position of these mi-

nute Ingredients of mixed Bodies, has of late, and particularly from the Authority of Mr. Boyle, been called the

Corpuscular Philosophy: The chief Principles of which are, 1. That there is but one Catholick or Universal Matter, which is an extended impenetrable and divisible Substance common to all Bodies, and capable of all Forms. 2. That this Matter, in order to form the vast Variety of natural Bodies, must have Motion in some or all its designable Parts; and that this Motion was given to Matter by God the Creator of all Things, and has all Manner of Direction and Tendencies. 3. That Matter must also be actually divided into Parts, and each of these primitive Particles, Fragments, or Atoms of Matter, must have its proper Magnitude, Figure, and Shape. 4. That these differently sized and shaped Particles have different Orders, Positions, Situations, and Postures, from whence all the Variety of compound Bodies arises. Sir Isaac Newton, in his second Book of Opticks, shews a Way of guessing with great Accuracy, at the Sizes of the component Corpuscles or Particles, of which Bodies are constituted.

Corrector, is such an Ingredient in a Composition as guards against or abates the Force of another; as the lixivial Salts prevent the grievous Vellications of refinous Purges, by dividing their Particles, and preventing their Adhesions to the intestinal Membranes, whereby they sometimes occasion intolerable Gripings; and as Spices and Carminative Seeds also assist in the easier Operation of some Catharticks, by dissipating Collections of Wind. In the making a Medicine likewise, such a Thing is called a Corrector, which

which destroys or diminishes a Quality in that it could not otherwise be dispensed with : Thus Turpentine may be called the Correctors of Quicksilver by destroying its Fluxility, and making it thereby capable of Mixture ; and thus rectified Spirit of Wine breaks off the Points of some Acids, so as to make them become safe and good Remedies which before were destructive.

Corroborate, signifies to strengthen, see *Strength*.

Corroborating Medicines, are such as increase the Strength of the Body by enlivening the vital Faculties.

Corrosion, and to *corrode*, from *corrodo*, to eat away. This is a particular Species of Dissolution of Bodies, either by an acid or a saline Menstruum : so that it will be of some Assistance in the understanding hereof to know what is necessary to Dissolution, which see. But this is peculiar to Corrosion, that it is almost wholly designed for the Resolution of Bodies which are most strongly compacted, such as Bones and Metals ; so that the Menstruums here employ'd have a considerable Moment or Force ; the Reason of which, it may not be amiss to trace out more distinctly. These Liquors, whether acid or urinous, are nothing but Salts dissolved in a little Phlegm : Therefore these being solid, and consequently containing a considerable Quantity of Matter, do both attract one another more, and are also more attracted by the Particles of the Body which is to be dissolved : and as their Attractions at equal Distances are proportional to their Bulks, *cæteris paribus* ; so when the more solid Bodies are put into saline Menstruums, the Attraction is stronger than in other Solutions ; and the Motion, which is always

proportional to the Attraction, more violent : so that we may easily conceive when the Motion is in such a Manner increased, it should drive the Salts, like so many Darts, into the Pores of the Bodies, and open and loosen the Cohesion of them, tho' ever so firm. And this may be observed in Corrosion, that the more minute the Particles of the Menstruum are, they penetrate the sooner, and with the greater Force : for the Motion which Attraction produces, is always greatest and most considerable in the least Corpuscles, and is almost next to nothing in the large ones ; for a small Corpuscle is carried with a considerable Velocity, when a greater, by reason of its large Surface, is often obstructed by the ambient Fluid, and deprived of all Motion. And there is another Advantage gained by this Minuteness of the Particles, that they approach nearer to the Body to be dissolved, without which the attractive Force would not be felt. Hence those very Salts which dissolved in Water will hardly touch Metals, if once turned into acid Spirits, will easily penetrate and conquer them : For in Distillation, not only a greater Quantity of Water remains, but the saline Bodies are so minutely broken and divided by the Fire, as to make them more readily capable of being moved by an attractive Force ; and therefore such a distill'd Menstruum is much more efficacious than any Solution of Salt made with Water. See *Menstruum*.

Corrugate, is to wrinkle or purse up, as the Skin is drawn into Wrinkles by Cold, or any other Cause.

Corrugator Supercilii ; each Eyebrow has one. It is a Muscle arising from the great *Canthus* of the Orbit, and terminating in the Skin about the Middle of the Eye-brows.

Some reckon this Pair only a Prolongation of the *Frontales*; their Name declares their Use, from *corrugo*, to wrinkle up, or knit the Brows.

Cortex; the *Peruvian Bark*, is so called by Way of Preheminence, this Word being a common Name for any Bark or Covering; whence,

Cortecal Substance. See *Cinneritious Substance*.

Corrugat Muscle. See *Corrugator Supercilii*.

Corruption, is the Destruction, or at least the Cessation for a Time, of the proper Mode of Existence of any natural Body; for whenever a Body looses all, or any of those Accidents which are essentially necessary to the constituting it of such a particular Kind, it is then said to be corrupted or destroy'd, and loses its former Denomination, being not now a Body of the Kind it was before: But nothing can be destroy'd as to its Substance or Materiality; for as in Generation nothing of Matter is produced that did not before exist, so in Corruption nothing more is lost than that particular Modification which was its Form, and made it be of such a Species.

Corymbus, in general signifies the Top of any thing; but amongst the ancient *Botanists* it was used to express the Bunches or Clusters of Berries of Ivy, or the like: Some also call the Top of the Stalk of a Plant, when it is so subdivided and adorned with Flowers or Fruits, that it makes a round spherical Figure, by this Name; as the Tops of Leeks, Onions, and the like; and others confound the Word with *Umbella*, which expresses the flowry Tops of such Plants as have their Branches and Flowers spread round into the Form of what our Women now call an *Umbrella*.

But amongst our modern *Botanists* it is used for a compounded discous Flower, whose Seeds are not pappous, or do not fly away in Down; such are the Flowers of Daisies, common Marygold, &c. and therefore Mr. Ray makes one Genus of Plants to be such as have a compound discous Flower, but without any downy Wings to carry off their Seeds; and these he calls

Corymbiferous Plants, which are distinguished into such as have a radiate Flower, as the *Flos Solis*, *Calendula*, &c. and such as have a naked Flower, as the *Abrotonum*, *Fæmineum*, *Eupatorium*, *Artemisia*; to which are added the *Corymbiferis Affines*, or those a-kin hereunto, such as, *Scabious*, *Dipsacus*, *Carduus*, and the like.

Coryza, is a Defluxion of serous sharp Humours from the Glands of the Head, upon a Diminution of Perspiration, or taking Cold.

Cosmetick, from *κοσμέω*, *orno*, to beautify; are such Medicines as preserve Smoothness and Beauty to the Skin.

Costæ, the Ribs: Of these there are 24 in Number, viz. 12 on each Side the 12 *Vertebræ* of the Back; they are crooked, and like to the Segments of a Circle; they grow flat and broad as they approach the *Sternum*, but the nearer they are to the *Vertebræ* they are the rounder and thicker; at which End they have a round Head, which being covered with a Cartilage, is received into the *Sinus* in the Bodies of the *Vertebræ*; and at the Neck of each Head (except the two last Ribs) there is a small *Tubercle*, which is also received into the *Sinus* of the transverse Processes of the same *Vertebræ*. The Ribs thus articulated, make an acute Angle with the lower *Vertebræ*. The Ribs have each a small

small Canal or *Sinus*, which runs along their under Sides, in which lies a Nerve, Vein, and Artery. Their Extremities which are fastned to the *Sternum*, are cartilaginous, and the Cartilages make an obtuse Angle with the bony Part of the Ribs; this Angle respects the Head. The Cartilages are harder in Women than in Men, that they may better bear the Weight of their Breasts. The Ribs are of two Sorts: the seven upper are called *Costæ veræ*, because their cartilaginous Ends are received into the *Sinus* of the *Sternum*: The five lower are called *falsæ*, because they are softer and shorter, of which only the first is join'd to the Extremity of the *Sternum*, the cartilaginous Extremities of the rest being tied to one another, and thereby leaving a greater Space for the Dilatation of the Stomach and Entrails. The last of these false Ribs is shorter than all the rest: it is not tied to them but sometimes to the *Musculus obliquus descendens*. If the Ribs had been articulated with the Bodies of the *Vertebræ* at right Angles, the Cavity of the *Thorax* could never have been enlarged in breathing. If each Rib had been a rigid Bone articulated to the transverse Processes of the *Vertebræ*, the *Sternum* could not have been thrust out to that degree as it is now, or the Cavity of the *Thorax* could not have encreased so much as is requisite in Inspiration: For when the Ribs are pulled up by the intercostal Muscles, the Angle which the Cartilages at the *Sternum* make with the bony Part of the Rib must be increased, and consequently its Subtense, or the Distance between the *Sternum* and the transverse Processes, lengthened. Now because the Rib cannot move beyond the transverse Process upon

the account of its articulation with it, therefore the *Sternum* must be either thrust to the other Side, or else outwards: It cannot move to the other Side, because of an equal Pressure upon the same account there; and therefore it is thrust outwards, or the Distance between the *Sternum* and the *Vertebræ* is increased. The last Ribs which do not reach the *Sternum*, and consequently conduce nothing in this Action, are not articulated with the transverse Processes. If we suppose the Cavity of the *Thorax* to be half a Spheroid, whose Semi-Axis is the Height of the *Thorax*, or 15 Inches, and the Diameter of its greater Circle 12 Inches, then the Cavity of the *Thorax* contains 1130 cubick Inches; but in an easy Inspiration, the *Sternum* is raised $\frac{1}{10}$ of an Inch, upon which account the Cavity of the *Thorax* is increased to 1150 cubick Inches. To this if be added the Space which the *Diaphragm* leaves, which is the Segment of a Sphere, whose Diameter is 15 Inches, and the Solidity of the Segment 183 Inches, there will be 22 Inches more, if the *Diaphragm* descends but one Inch; but if it descends one Inch and a half, it leaves room for 52 Inches of Air to enter; and if it descends two Inches, the Cavity of the *Thorax* will be encreased upon the account of the Motion of the *Diaphragm* above 86 Inches: so that in the least Inspiration that can be supposed, the Lungs are distended with 42 Inches of Air, and they may be so sometimes with above 70, or 100.

Cotyla, or *Cotyle*, the same with *Acetabulum*, which see.

Cotyledones, are little Glands dispersed up and down the outermost Membrane of the *Fætus*, said to separate a nutritious Juice, and thus

called from the resemblance to the Herb Pennywort, called in Latin *Cotyledon*. See *Chorion*.

Coxæ Os, is joined to the Extremity of the *Os sacrum*; and is composed of three or four Bones, of which the lower is still less than the upper, till the last ends in a small Cartilage: it resembles a little Tail turned inwards; its use is to sustain the straight Guts; it yields to the Pressure of the *Fœtus* in Women in Travail, and Midwives use to thrust it backwards, but sometimes rudely and violently, which is the Occasion of great Pain, and several bad Effects.

Crane's Bill, is a Sort of *Forceps* used by Surgeons, so called from its Resemblance in shape to the Bill of a Crane.

Cranium, or Skull, is made up of several Pieces, which being joined together, form a considerable Cavity, which contains the Brain as in a Box; and it is proportionate to the Bigness of the Brain. Its Figure is round, a little depressed on its Sides; such a Figure being the most capacious, whilst the Flatness of its Sides helps to enlarge the Sight and Hearing. The several Pieces, of which the *Cranium* is composed, are join'd together by *Sutures*; which makes it less apt to break, and gives Room to several Membranes which suspend the *Dura Mater*, and which go to the *Pericranium*, to pass thro', and that the Matter also of Transpiration might have vent. These Pieces or Bones are six proper and two common, and each is made up of two Tables, or *Lamine*, between which there is a thin and spongy Substance, made of some bony Fibres which come from each *Lamina*, called in Greek *Diploe*, and in Latin *Medi-*

tullium. In it there are a great many Veins and Arteries, which bring Blood for the Nourishment of the Bones. The *Tables* are hard and solid, because in them the Fibres of the Bones are close to one another. The *Diploe* is soft, because the bony Fibres are at a greater distance from one another; by which Contrivance the Skull is not only made lighter, but also less subject to be broken. The external *Lamina* is smooth, and covered with the *Pericranium*; the internal is likewise smooth, but on it there are several Furrows made by the Pulse of the Arteries of the *Dura Mater*, whilst the *Cranium* was soft and yielding.

The *Cranium*, as was before said, is made of several Pieces join'd together by *Sutures*, that it might be the stronger and less apt to break, that several Membranes and Vessels which suspend the *Dura Mater*, and which go to the *Pericranium*, may pass thro' the *Sutures*, and that the Matter of Transpiration may pass thro' them.

And the Bones of the *Cranium* are six proper, and two common to it; and these have several Inequalities made by the Vessels of the *Dura Mater*. It has two large Dimples made by the anterior Lobes of the Brain. Above the *Crista Galli* it has a small blind Hole, into which the End of the *Sinus Longitudinalis*, is inserted: From this Hole it has a pretty large Spine which runs up along its Middle; instead of this Spine there is sometimes a *Sinus*, in which lies the *Sinus Longitudinalis*, which ought carefully to be observed by Chirurgeons in Wounds of this Place. This Bone is thicker than those of the *Sinciput*, but thinner than the

Os Occipitis. In Children it is always divided in the Middle by a true *Suture*.

The second and third are the Bones of the *Sinciput* called *Parietalia*; they are the thinnest Bones of the *Cranium*, they are almost square, somewhat long, and are joined to the *Os Frontis* by the *Sutura Coronalis*, to one another in the Crown of the Head by the *Sutura Sagittalis*, to the *Os Occipitis* by the *Lambdoidalis*, and to the *Ossa Temporum* by the *Sutura Squamosæ*. They are smooth and equal on their outside, but on their inside they have several Furrows, made by the Pulse of the Artery of the *Dura Mater*. They have each a small Hole near the *Sutura Sagittalis*, through which there pass some Veins which carry the Blood from the Teguments to the *Sinus Longitudinalis*.

The fifth and sixth are the *Ossa Temporum*, situated on the lower Part of the Sides of the *Cranium*; their upper-part, which is thin, consisting only of one Table, is of a circular Figure, and is joined to the *Ossa Parietalia* by the *Sutura Squamosæ*; their lower Part, which is thick, hard and unequal, is joined to the *Os Occipitis*, and to the *Os Sphenoides*; this Part is called *Os Petrosum*. They have each three external *Apophyses*, or *Processes*, and one internal: the first of the external is the *Processus Zygomaticus*, which runs forward, and unites with the Process of the *Os Mali*, making that Bridge called the *Zygoma*, under which lies the Tendon of the *Crotaphite Muscle*. The second is the *Mamillaris* or *Mastoidæus*; it is short and thick, situated behind the *Meatus Auditorius*. The third is the *Processus Styloformis*, which is long and small; to it the Horns of

the *Os Hyoides* are tied. The internal Process is pretty long and big in the Basis of the Skull; it contains all the Cavities and little Bones of the Ear, which have been already described under that Word, which see. The Holes in the temporal Bones are two internal, and four external; the first of the external is the Hole thro' which the auditory Nerve passes; the second is common to it, and the *Os Occipitis*; the eighth Pair of Nerves, and the lateral *Sinus's* pass thro' it. The first of the external Holes is the *Meatus Auditorius externus*: the second opens behind the *Palate*; it is the End of that Passage which comes from the Barrel of the Ear to the Mouth: the third is the Orifice of the Conduit by which the *Carodital Arteries* enter the *Cranium*: and the fourth is behind the *Processes Mastoidæus*; by it passes a Vein which carries the Blood from the external Teguments to the lateral *Sinus's*. Sometimes this Hole is wanting; there is another which is between the *Processes Mastoidæus* and *Styloformis*, thro' which the *Portio Dura* of the auditory Nerve passes; they have each a *Sinus* lined with a Cartilage under the *Meatus Auditorius*, which receives the Condyl of the lower Jaw.

The sixth Bone of the *Cranium* is the *Os Occipitis*; it lies on the hinder Part of the Head; it is almost like a Lozenge, with its lower Angle turned inwards: it joins the *Ossa Parietalia* and *Petrosa* by the *Lambdoidal Suture*, and the *Os Sphenoides*, by the *Sphenoidalis*: It is thicker than any other Bones of the *Cranium*, yet it is very thin where the *Splenius*, *Complexus*, and *Trapezius* are inserted. Externally it is rough; internally it has two *Sinus's* in which lie the two Protuberances

berances of the *Cerebellum*; and two large Furrows in which lie the *Sinus lateralis*: it has seven Holes, the first two are common to it and the *Ossa Petrofa*; the lateral *Sinus*'s and the *Par Vagum* pass thro' them. The third is the great Hole thro' which passes the *Medulla Spinalis*: The fourth and fifth are the Holes thro' which there pass two Veins, which bring the Blood from the external Teguments to the *Sinus lateralis*; sometimes there is but one, and sometimes none of these two; and sometimes there are two more through which the vertebral Veins pass. This Bone has also two *Apophyses*, one on each Side of the great Hole; they are lined with a Cartilage, and articulated with the first *Vertebra* of the Neck. It has also a Protuberance in its Middle, from which there goes a small Ligament, which is inserted into the first *Vertebra* of the Neck. It is longer in Beasts than in Men.

The first of the Bones common to the Skull and upper Jaw, is the *Sphenoides*: It is a Bone of a very irregular Figure, and situated in the Middle of the Basis of the Skull; it is joined to all the Bones of the *Cranium* by the *Sutura Sphenoidalis*, except in the Middle of its Sides, where it is continued to the *Ossa Petrofa* as if they were one Bone. On its outside it has five *Apophyses*; the first two are broad and thin like a Bat's Wings; they are called *Pterygoides*; they have each a pretty long *Sinus*, from which the Muscles called *Pterygoidæi* arise; and at their lower End they have each a small Hook like a Process, upon which the *Peristaphilius externus* turns its Tendon. The third and fourth make the internal, and lower Part of the Orbit; and the fifth is a little *Apophyses* like the *Cristi Galli* in its fore-part, which is received in a

Cavity at the further End of the *Vomer*. There is also a little small Protuberance in the Middle of this Bone, from which the Muscles of the *Uvula* arise; on its Inside it has four Processes called *Clinoides*, they form a Cavity in the Middle of this Bone called *Cella Turcica*, in which lies the *Glandula Pituitaria*. Betwixt the two Tables of this Bone, under the *Cella Turcica*, there is a *Sinus* divided into two in its Middle, which opens by two Holes into the Cavity of the Nostrils. In the *Os Sphenoides* there are 12 Holes; by the first and second pass the Optick Nerve; by the third and fourth which are called *Foramina Lacera*, pass the third Pair, fourth Pair, first Branch of the fifth Pair, and the sixth Pair; by the fifth and sixth pass the second Branch of the fifth Pair; by the seventh and eighth pass the third Branch of the same Pair; by the ninth and tenth enter the Arteries of the *Dura Mater*; and by the eleventh and twelfth enter the internal *Carotidales*, and the intercostal Nerve goes out. The Canals by which the *Carotidales* enter are oblique; the Beginning of them is made in the *Ossa Petrofa*, and they open within the Skull in the *Sphenoides*. The second and last of the common Bones is the *Ethmoides*, to be described under that Word; which see.

Crafsis, from *κρασις*, *Mixtura*, a Mixture, is such a due Mixture of Qualities in a human Body, as constitutes a State of Health.

Craffamentum. See *Cruor*.

Cremaſter, from *κραμεναι ſuſpendeo*, to hold up; is a Muscle running upon the Outside of the *Tunica Vaginalis*, thus called from its Office, because it ſuſpends the Teſticles, and draws them up in the Act of Generation. It ariſes from the *Os Pubis*, and ſpreads its Fibres upon

upon the *Elythroides*, or *Tunica Vaginalis*.

Crepitation, from *crepo*, to crack, is that Noise which some Salts make over the Fire in Calcination. See *Detonation*.

Cribriform and *Cribriforme Os*. See *Ethmoides*.

Crico-Arytenoidæus Lateralis, from *κρίνον*, *Annulus*, a Ring, *ἀρῖον*, *haurio*, to drink, or *ἀρῖον*, a sort of Cup to drink out of, and *εἶδος*, *Forma*, Shape. See *Larynx*.

Crico-Arytenoidæus Posticus. See *Larynx*.

Crico-Theroides, from *κρίνον*, *Annulus*, a Ring, *θρεψός*, *Scutum*, a Helmet, and *εἶδος*, *Forma*, Shape. See *Larynx*.

Cricoides, from *κρίνον*, *Annulus*, a Ring. See *Larynx*.

Crinated Roots, are such as shoot into the Ground in many small Fibres like Hair.

Cystæ, are a certain Species of Tumors or hard Excrescences arising at a small Distance from the Verge of the *Anus*.

Crisis, from *κρίνω*, *judico*, to judge, or *secerno*, to separate; is some Change in the Patient, which discovers the State of a Disease, either for the better or worse. And

Critical Days, are those Days wherein such Change happens. The Writers of Institutions have strangely perplexed this Part of a Physician's Province; it may therefore be of Consequence to clear it up as much as is consistent with our allotted Room here. The Concoction then of any morbidick Matter, and the Humour to be secerned, is nothing else but a Change of it into such a due Magnitude or Smallness, as it may be carried by the circulating Blood along the Canals, and excerned by Vessels destined for that Purpose. But if the morbidick

Matter cannot be reduced to such a Smallness that may correspond to the Orifices of the secretory Vessels, then either an Abscess or Hæmorrhage will follow, if a Crisis is begun; for which Reason Abscesses, &c. are accounted less perfect crises. But that the morbidick Matter may be reduced to a due Smallness, and its wish'd-for Discharge be effected, there is required a considerable time if the Quantity of Matter is large; that is, if the Distemper be great and severe. And since there are a great many Causes, and those very constant, that may occasion the Blood and offending Humours therein to be of a different Fluidity in the Inhabitants of different Climates, it is impossible but that different Spaces of Time should be required for the finishing Concoction; which makes it impossible to determine the critical Days in one Climate from what they are found to be in another. The Causes of real critical Days, that is, such on which happens the last Concoction of the morbidick Matter, which is always attended with its Expulsion, are all those things which occasion the Humours to become of such a certain Magnitude or Minuteness, and of a greater or lesser Cohesion; but with any given Power, Bodies unequally large, or unequally cohering, cannot be concocted in an equal Time: wherefore it is to be found from the Observations made by all Nations among themselves, what are the usual Causes and Conditions of those Diseases which require a certain Number of Days to finish such a Concoction in. And when there is a sufficient Number of such Observations made, the Distemper and Circumstances appearing the same, we may be able to foretel a critical Day with much more

more Exactness, than it it now in our Power to do.

Cristæ Galli. See *Ethmoides*.

Crocus, is a Term given to many Preparations made by the Chymists after the Manner of Rust, by corroding and opening metallick Substances into such a Form.

Crotaphite: the same as *Temporal Muscle*; which see.

Crucible, is an earthen Vessel well known to the Chymists and Refiners, that is made on Purpose to endure the Fire, and fit for melting of Metals.

Crudity, signifies properly Rawsness, or any thing not duly digested and mixed, whether in Animal or other Substances.

Cruor, is the proper Term for the thick, red, or fibrous Part of the Blood, otherwise called *Craffamentum*, in Distinction of the serous or aqueous Part.

Crura: The two Heads of the medullary Substance of the Brain, called *Medulla Oblongata*, have this Appellation.

Crura Clitoridis. See *Generation* Parts of, proper to Women.

Cruræus, is a Muscle which comes from the Fore-part of the Thigh-bone, between the lesser and greater *Trochanter*, and lying close upon the Bone, it joins its Tendon with three others, which all together make one broad Tendon that passes over the *Patella*, and is inserted into the little Tuberosity on the upper and fore-part of the *Tibia*.

Crus, in Anatomy, is all that Part of the Body which reaches from the Buttocks to the Toes, and is divided into Thigh, Leg, and Foot.

Cryptæ, a Term used in Anatomy to express a Receptacle of any particular Humour or Matter, in Distinction from a Gland which is not supposed to receive, but only to transmit.

Crystalline Humour, is the second Humour of the Eye, that lies immediately next to the aqueous behind the *Uvea*, opposite to the *Papilla*, nearer to the Fore-part than the Back-part of the Globe; it is the least of the Humours, but much more solid than any of them. Its Figure, which is convex on both Sides, resembles two unequal Segments of Spheres, of which the most convex is on its Back side, which makes a small Cavity in the glassy Humour in which it lies. It is cover'd with a fine Coat called *Aranea*.

Crystal Mineral, the same as *Sal Prunel*.

Crystallization, is such a Combination of saline Particles, as resembles the Form of a Crystal, variously modified according to the Nature and Texture of the Salts. The Method is by dissolving any saline Body in Water, and filtering it, to evaporate till a Film appears at the Top, and then let it stand to shoot, and this it does by that attractive Force which is in all Bodies, and particularly in Salt by reason of its Solidity; whereby when the *Menstruum*, or Fluid, in which such Particles float, is fated enough, or evaporated (which brings it to the same) so that the saline Particles are within each other's attractive Powers, they draw one another more than they are drawn by the Fluid, then will they run into Crystals. And this is peculiar to those Salts, that let them be ever so much divided and reduced into minute Particles, yet when they are formed into Crystals, they each of them re-assume their proper Shapes; so that one might as easily divest and deprive them of their Saltiness, as of their Figure. This being an immutable and perpetual Law, by know-

knowing the Figure of the Crystals, we may understand what the Texture of the Particles ought to be, which can form those Crystals. And on the other hand, by knowing the Texture of the Particles, may be determined the Figures of the Crystals: for since the Figures of the most simple Parts remain always the same, 'tis evident the Figures which they run into, when compounded and united, must be uniform and constant. And since the Force of Attraction may be stronger on one Side of a Particle than on another, there will constantly be a greater Accretion of Salts upon those Sides which attract more strongly. From which it may easily be demonstrated, that the Figures of the least Particles is entirely different from that which appears in the Crystal. See *Prop. 17.* under Particle.

Cube, is a solid Body of six equal Sides, which are all Squares: It is one of the five regular Bodies, and its Content is found by multiplying any one Side or Surface by the Height.

Cubiforme Os. The seventh Bone of the Foot is so called, because of its Figure resembling a Cube. It lies in the same Rank with the *Ossa Cuneiformia*; behind, it is joined to the *Os Calcis*; before, to the two outer Bones of the *Metatarsus*, and on its Inside it is joined to the third *Os Cuneiforme*.

Cubitæus Externus, is one of the Extensors of the Fingers, and ariseth from the external Extuberance of the *Humerus*, and passing its Tendon under the *Ligamentum Annulare*, is inserted into the fourth Bone of the *Metacarpus* that sustains the little Finger.

Cubitæus Internus, ariseth from the internal Extuberance of the *Hu-*

merus, and upper Part of the *Ulna*, upon which it runs all along till it passes under the *Ligamentum Annulare*, and is inserted by a strong and short Tendon into the fourth of the first Order of the *Carpus*.

Cubit, is the middle Part between the Shoulder-bone and the Wrist.

Cuboides. See *Cubiforme Os.*

Cucullaris, a Muscle serving to move the *Scapula*, so called from its Figure resembling that of a Monk's Hood. 'Tis also call'd *Trapezius*.

Cucullate Flower, from *Cuculla*, a Hood; so call'd from its Resemblance in Shape to a Hood.

Cucupha, is an ancient Form of quilting Spices into a Cap to be wore upon the Head in many nervous Distempers, and such as more particularly affect the Head; but they are now almost out of Practice.

Cucurbit, is a chymical Vessel, commonly called a Body, made of Earth or Glass, in the Shape of a Gourd; and therefore thus called, because

Cucurbita, is a Gourd, whose Seeds are used in cooling Emulsions.

Cucurbitula, is a Cupping-Glass; the Use and Manner of applying which is too well known to want any Description.

Cucurbitini Lumbrici, are a particular kind of Worms resembling the Gourd-seeds in Shape, and therefore thus called.

Culmus, is properly the Stalk of Corn or Grass, but of no other Plant; because that is called *Caulis*. And,

Culmiferous Plants, are such as have a smooth jointed Stalk, and usually hollow; and at each Joint the Stalk is wrapped about with single, narrow, long sharp-pointed Leaves, and their Seeds are contained in chaffy Husks.

Cunei-

Cuneiforme Os. See *Sphenoidis Os.*

Cuneiformia Offa, are the fourth, fifth, and sixth Bones of the Foot, thus called from their Wedge-like Shape, the Term importing so much, from *Cunis*, a Wedge, and *Forma*, Shape; for they are large above, and narrow below. They lie all three at the Side of one another. Their upper Side is convex, and their under hollow, by which means the Muscles and Tendons in the Bottom of the Foot are not hurt when we go. At one End they have each a *Sinus*, which receives the *Os Naviculare*, and at the other End they are join'd to the three inner Bones of the *Metatarsus*; the inmost of these Bones is the biggest, and that in the Middle the least.

Cuneus, the Wedge, which is a triangular Prism, whose Sides are acute angled Isosceles Triangles.

Cunus, expresses so much of a Woman's Privy-parts as consists of the *Clitoris*, *Nymphae*, and *Labia*.

Cupel, or *Copel*, is a Furnace made of Ashes and burnt Bones, for separating the Dross from Metals, chiefly used by the Refiners. See *Le Mori's Metallurgia contracta*.

Curcuma, Turmeric, called *Crocus Indicus*, because of its Saffron-colour, and the Place from whence it comes.

Cuspated, in Botany, is when the Leaves of a Flower end in a Point, from *Cuspis*, a Spear, whose Point they resemble.

Cutaneous, is any thing concerning the Skin, either of a Distemper or Remedy, from *Cutis*, the Skin.

Cutaneous Diseases, are generally supposed to proceed from that curdy Matter like Paste, which being thrust out and lodged between the

cuticular Pores, causes a Stagnation of the Juices, and Dryness of the Skin, &c.

Cuticula, called also *Epidermis*, from *ἐπὶ*, *supra*, above, and *δέρμα*, *Cutis*, the Skin, is the first and outermost covering of the Body, commonly called the Scarf-Skin. This is that soft Skin which rises in a Blister upon any Burning, or the Application of a Blistering Plaister. It sticks close to the Surface of the true Skin, to which it is also tied by the Vessels which nourish it, tho' they are so small as not to be seen. When the Scarf-skin is examined with a Microscope, it appears to be made up of several Lays of exceeding Small Scales, which cover one another, more or less, according to the different Thickness of the Scarf-skin in the several Parts of the Body. In the Lips, where the Scales appear plainest, because the Skin is thinnest, they only in a Manner touch one another. Now these Scales are either the excretory Ducts of the Glands of the true Skin, as is apparent in Fishes, or else the Glands have their Pipes opening between the Scales. *Leuwenhoeck* reckons, that in one cuticular Scale there may be 500 excretory Channels, and that a Grain of Sand will cover 250 Scales; so that one Grain of Sand will cover 102500 Orifices thro' which we daily perspire.

The Scales are often glewed to one another by the grosser Parts of our insensible Transpiration hardening upon them by the Heat of the Body, which carries off the more volatile Particles. The Humour, which is afterwards separated by the Glands of the Skin being pent in between the Scales, causes frequent Itching; and where the Matter has been long pent up, small Pimples;
for

for the removing of which, Nature directs to those wholesome Remedies of frequent rubbing, or washing, or bathing. The Use of the Scarf-skin is to defend the Nerves of the Skin, which are the Origin of the Sense of Feeling, from the Injuries of rough and hard Bodies, as well as the Air: for either those would make too exquisite and painful an Impression on the naked Nerves: or the Air would dry them, so as that they would be less susceptible of the nicer Touches of Pleasure.

Cutis, the Skin. In this there are three Parts remarkable: The first is an infinite Number of the *Papillæ Pyramydales*; these are the Ends of all the Nerves of the Skin, each of which is enclosed in two or three Covers of a pyramidal Figure, and those Covers each above another. They may be easily seen and separated in the Skin of an Elephant, and in the Skin of the Feet of several other Animals. Between these *Papillæ* are an infinite Number of Holes, which are the Orifices of the excretory Vessels of the milliary Glands underneath. About the *Papillæ* is spread a mucous Substance, which because it is pierced by them, and consequently full of little Holes, is called by *Malpighi*, the *Corpus Reticulare*; its Use is to keep the Extremities of the Nerves soft and moist, and sensible of the slightest Touches. The second Part is a Web of nervous Fibres, and other Vessels differently interwoven, and it is the *Parenchyma*, or that Part of the Skin that the Parchment is made of. The third Part is an infinite Number of milliary Glands, about which there is much Fat; they lie under the other two Parts, and they separate the Matter of Sweat and insensible Transpiration. Each Gland receives

a Nerve and Artery, and sends out a Vein and excretory Vessel, which last passes thro' the other two Parts to the *Cuticula*, for the discharging the Body of this Matter, and for the moistening the *Cuticula*, and the *Papillæ Pyramidales*, that they may not dry, which would very much hurt the Sense of Feeling. Upon the Surface of the Skin there are many parallel Lines, which are cut by as many parallel ones. These Intersections make Spaces of a Rhomboidal Figure; and out of each Angle, for the greatest Part, grows a Hair, shorter or longer, as Nature requires in the several Parts of the Body: but in the Palm of the Hand, where there are no Hairs, these Lines do not intersect one another; and on the Ends of the Fingers they are spiral. The Skin is six times thicker than the Scarf-skin; and in the Sole of the Foot it is much thicker than in the Face, Hands, and other Parts. In the Summer it is softer, because the Pores are wider. In the Winter it is more compact and harder, because the Pores are more close; therefore the Hairs of Beasts stick faster, and Furs made of them are better in that Season. In some this Skin is white, in others black and tawny, which probably comes from the different Colours of the Mucus, which covers the *Parenchyma* of the Skin; for the Fibres of the Skin in all are white, and there is little or no Difference in the Colour of different Bloods. The Skin is not only a Covering in which all the Parts of the Body are wrapp'd up; but in it also Nature has placed the Organs of the Sense of Feeling, so that not the least thing hurtful can assault us without our Knowledge: and as it preserves us from external Offences, so it relieves us of
noxious

noxious and superfluous internal Humours; its Glands being the *E-munctories* of the whole Body, thro' which not only the peccant Humours pass, but likewise the greatest Part of the Liquors which we drink, which having Part of their Office in conveying the Aliments into the Blood, are in the next Place to dissolve the saline and terrestrial Particles to be carry'd off thro' the Glands of the Skin and Kidneys. Now the Sum of all these Particles strain'd thro' the cuticular Glands, is by *Sanctorius* reckoned to amount to about 50 Ounces in *Italy*; so that suppose a Man's Body to weigh 160 Pounds, then in 51 Days we perspire a Quantity equal to the Weight of the whole Body. And from the Consideration of this and other Evacuations, our Bodies are said to be renewed and changed in some stated Times: but that the Vessels or solid Parts of the Body do constantly decay, waste, and evaporate, does not at all seem probable; nor if they do, is it possible to determine in what Time there is a total Change; and I am more apt to think, that the Fluids only consume, of which though several Pounds are daily lost, yet it is not from thence certain when the old Stock is spent, and the Vessels filled with new Juices: for besides that the true Quantity of Blood in the Body is not certainly known, we can never be sure whether they are new or old Juices, or a Mixture of both, which are constantly flying off; and if a Mixture, which is most probable, in what Proportion they are mixed, which must necessarily be known in order to determine when the old Mass is entirely evacuated. But that Part of our native Blood does remain in the Body, even to the last Stages of

Life, some think credible from hence, that the Small-Pox comes upon many at 80 or 90 Years of Age; but whether that is conclusive, we have not Leisure here to examine.

Cycliscus, from $\kappa\upsilon\lambda\lambda\omicron$, *Circulus*, a Circle, is an Instrument in the Form of a Half-Moon, used by the Surgeons to scrape away Rottenness.

Cycloid, is the Curve described by a Point in the Periphery of a Circle, rolling upon a straight Line.

Cylinder, is a solid Body made by the Rotation of a rectangular *Parallelogram* about one of its Sides; so that when in Anatomy a Vessel is said to be cylindrical, or a Cylinder, 'tis meant that it is so shaped, as not to be narrower at one End than another, but that it is of the same Diameter in all Places, contrary to a Cone or a Conical Vessel; which see.

Cyma, is a Term in Botany signifying the Top of any Plant or Herb.

Cymatodes, is applied by *Galen* and some others to an unequal fluctuating Pulse.

Cynanthropia, is used by *Bellini de Morbis Capitis*, to express a particular kind of Melancholy, when Men fancy themselves changed into Dogs, and imitate their Actions.

Cynodectos, from $\kappa\upsilon\nu\omicron\delta\alpha\eta\kappa\tau\omicron$, *Dioscorides* calls a Person bit with a mad Dog.

Cynolyssa, or *Cynolyssus*, is used by *Lister*, *Exercit. 3. de Morbis chron.* in the same Sense as *Rabies canina*, the Madness peculiar to a Dog.

Cynorexia, is the canine, or greedy Appetite, that is not easily to be satisfied.

Cyrenaicus, is applied to the Juice of the *Laserpitium* of the Ancients from the County where it mostly flows.

flourished, by *Scribonius Largus Aegineta*, and some others; as it is also taken notice of under the same Distinction by *Sanctorius* in his Aphorisms.

Cymbyforme Os. See *Naviculare Os.*

Cynodentes, from *κυν*, *Canis*, a Dog, and *Dens*, a Tooth; Dog-Teeth: so called for their Shape, resembling the two large Teeth of a Dog's lower Jaw. See *Teeth*.

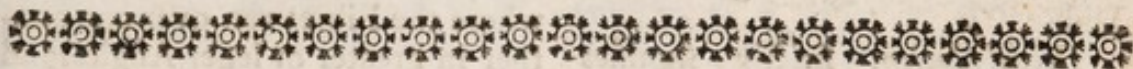
Cysticks, are Medicines prescribed in any Disorders of the Bladder; because,

Cystis, from *κύστις*, *Vesica*, a Blad-

der, signifies any Part of the Body so called, as the Urinary Bladder, or Gall-Bladder. And,

Cysticus Ductus, is a Pipe that goes from the Neck of the Gall-Bladder, not in a straight Line with the Bladder, but, as it were, more depressed in the Liver; into which some bilious Ducts likewise open, and its inner Membrane has several *Rugæ*, to retard the Motion of the Bile. See *Jecur*.

Cystic, is also applied to the Arteries and Veins communicating between the *Vena Portæ* and Liver.



D

D *Acryon*, *δάκρυον*, signifies properly a Tear; whence *Dacryodes* is by *Hippocrates* applied to a particular kind of weeping Ulcer. And,

Dacryopoeos, is said of those things which excite Tears by their Acrimony, as Onions, Horse-Radish, and the like.

Dædalus, is a Name given by some Chymists to Mercury, on account of its great Volatility with Heat, from a Person so called, who invented Wings to fly with.

Dæmon, which strictly signifies a Spirit either good or bad, hath not likewise escaped Torture from the Application of some Writers in Medicine, most of which are too ridiculous to take Notice of; but as it is taken in a bad Sense, its derivative *Dæmoniac* is most justly ascribed to such Distempers as cannot be assigned to natural Causes, but are supposed from the Influence of Possession by the Devil: tho' even such Notions have now long since been exploded.

Damnata Terra. See *Caput Mortuum*.

Daphnilæon: *Diascorides* thus calls the Oil of Bays, from *Daphne*, the Nymph reported by the Poets to have been changed into that Tree.

Dartos, is the inner Coat of the *Scrotum*, composed of many fleshy or muscular Fibres, by means of which the *Scrotum* is contracted; and which is reckoned a Sign of Health. But the reason of this Name from its Etymology we cannot learn. For *δάρις* signifies Excoriation, and by Anatomists is sometimes applied to raising the Membranes from their included Parts, particularly by *Vesalius*.

Data, from the Participle of *do*, to give, is a Term used for such Things or Quantities as are supposed to be given or known in order to find out thereby other Things or Quantitys, which are unknown or sought for. And this, which was first transplanted from the Mathematicks into Medicine, expresses
any

any Quantity which for the sake of a present Calculation is taken for granted to be such, without requiring an immediate Proof for its certainty: and this is called the given Quantity, Number, or Power: and such Things as are known, from whence either in the animal Mechanism, or the Operation of Medicines, we come to the Knowledge of Things before unknown, are now frequently in physical Writers called *Data*.

Dealbation, hath been used by the Chymists and Refiners, for rendering things white which were not so before, but is now almost grown into Disuse.

Deambulation, strictly signifies Motion of the Body by walking, but by *Hippocrates* is applied to Inquietude of the Mind.

Dearticulation. See *Diarthrosis*.

Death, in Medicine is a total Stoppage of the Blood's Circulation.

Debility, is a Relaxation of the Solids, that induces Weakness and Fainting.

Decantation, is the pouring off any Liquors clear from its Fæces.

Deciduous, signifies that which is apt and ready to fall: and thus Botanists say, in some Plants the *Perranthium*, or *Calyx* is deciduous with the Flower, *i. e.* falls from off the Plant with it. It is also applied to some Parts of the Body in a state of Relaxation, as by *Joh. Stephanus* in his Notes upon *Avicen* to the *Uvula*, which he calls *Uvula Decidua*.

Declension, is when a Disease is past its Hight, and the Symptoms abate.

Decoction, is any thing boiled, from *decoquo*, to boil: see *Apozem*.

Decortication, is stripping any

thing of its Bark or Shell, from *de*, from, and *Cortex*, Bark.

Decrepitation, is a Term much used by *Ludovicus* and *Wedelius* for the cracking Noise which Salt makes, when put over the Fire in a Crucible.

Decurtatus, is by some applied to a Pulse which grows weaker every stroke, until an intire Cessation; or if it recovers again, it is called *Pulsus Decutatus reciprocus*; see *Galen de different. Puls. Lib. 1. Cap. 11*.

Decussation, is when Lines cross one another; and is the Case of many Muscles and Membranes, where the Fibres run over one another in greater or lesser Angles, and give both Strength and Convenience of Motion different ways, much in the same Manner as Threads are made in a Net.

Decussorium, is a Surgeon's Instrument wherewith the *Dura Mater* is pressed down in the Operation of the Trepan, to save it from Damage.

Defensive, is said of a Plaister or Bandage whereby Surgeons keep on their Dressings, and secure Wounds from the Air.

Deferentia Vasa. See *Generation*, Parts of.

Deflagration, signifies burning away any thing, and is a Term frequently made use of in Chymistry for setting Fire to several things in their Preparation; as in making the *Æthiops* with Fire, the *Sal Prunella*, and many others of the like Nature.

Defluxion, signifies a running off, or flowing of any Liquid; from *de*, and *fluo* to run off; and generally expresses the Rheum in a *Catarrh*, or a sudden discharge of thin Humours upon any part.

Deglutition, Swallowing. See *Larynx*.

Dejection, from *dejicio*, to cast off. Going to Stool is so called.

Deleterious, probably from *ἀλλέω*, *noceo*, to hurt; those Things are so called which are of a poysonous Nature. *Galen* applies it to all Catharticks, on a Supposition that they must contain somewhat inimicous to the human Body, to make them occasion such Commotions in it.

Deliquium, signifies Swooning away, from what Cause soever; and

Deliquium, is also a Term in Chymistry, to express the particular Fusion of some lixivious Salts in a moist Air, as Oil of Tartar *per Deliquium*.

Delirium, is an Incapacity in the Organs of Sensation to perform their Function in due Manner, so that the Mind does not reflect upon and judge of external Objects as usual; as is the Case frequently in Fevers, from too impetuous a Hurry of the Blood, which alters so far the Secretion in the Brain, as to disorder the whole nervous System. See *Narcoticks*.

Deltoides, is a triangular Muscle, which is thus called from Δ , the Greek Delta, and $\alpha\sigma\theta$, *Forma*, Shape. It arises exactly opposite to the *Trapezius* from one third Part of the *Clavicula*, from the *Acromium* and Spine of the *Scapula*, and is inserted tendinous into the Middle of the *Os Humeri*, which Bone it lifts up directly; and it assists with the *Supra Spinatus* and *Coracobrachialis* in all the Actions of the *Humerus*, except the Depression; it being convenient that the Arm should be raised and sustained, in order to its moving on any Side.

Demonstration, is a Chain of Arguments depending on one ano-

ther, and founded primarily in self-evident Principles; but more strictly it is that Way used by Mathematicians, of proving their Assertions by such Steps as keep the Image or Picture of what is expressed by the several Terms in a Proposition always in View; and often therefore requires the Help of Diagrams; whereby the Mind is conducted thro' the Whole with as much Certainty, as in actually numbring so many Pieces of Money out of one Hand into another. And for this Reason it is, that in Mathematicks, to which this Term is appropriated, Persons at a Distance from one another, shall draw the same Conclusions from the same Premisses without the least Variation, as much as the same Sums to be added together will always produce the same Total. But when this is apply'd to Purposes not attended with equal Certainty, it is with great Impropriety; tho' often done by Persons too opinionated of their own Abilities and Speculations.

Density, is that Property in Bodies which arises from a Texture wherein more Matter is contained in any given Surface, or, which is the same thing, wherein there are fewer Pores; and the Manner or Means of occasioning this, is called Condensation. The Fluids, whose Density it is of the most Importance to be acquainted with, in order to judge of the atmospherical Pressure, and many of its Consequences, are Air, Water, and Quicksilver; and according to Sir *Isaac Newton's* Calculation, Water is to Air as 800 or 850 to 1, allowing the Mercury in the Baroscope to be at the Height of 30 Inches; the Density of Quicksilver to Water as $13\frac{1}{2}$ to 1; and consequently the Density of Quicksilver to Air, is as 11617 to 1.

Dentagra, signifies the Tooth-ach; but is applied also to Instruments to draw Teeth with, of the Figures of which *Parey* gives many Examples.

Dentarius, is a Person professing to draw Teeth, or remedy their Disorders; and

Dentiscalpium, is an Instrument to clean the Teeth with, as also one described by *Sculetus*, to separate the Gums from the Teeth, to facilitate their Extraction.

Dentes, the Teeth, are the hardest and smoothest Bones of the Body; they are formed in the Cavities of the Jaws, which are lined with a thin Membrane; upon which there are several Vessels, thro' which there passes a thick transparent Humour, that, as it increases, hardens in Form of Teeth: and about the seventh or eighth Month after Birth, they begin to pierce the Edge of the Jaw, tear the *Periosteum* and Gums; which being very sensible, create a violent Pain, and other Symptoms incident to Children in the Time of Toothing. They begin not to appear all at a time, first the *Dentes incisivi* of the upper, and then those of the lower Jaw appear, because they are the thinnest and sharpest; after them come out the *Canini*, because they are sharper than the *Molares*, but thicker than the *Incisivi*; and last of all the *Molares*, because they are thickest and bluntest. Of this viscous transparent Liquor, which is the Substance of the Teeth, there are two Layers, the one below the other, divided by the same Membrane, which covers all the Cavity of the Jaw: The uppermost Layer forms the Teeth which come out first, but about the seventh Year of Age they are thrust out by the Teeth made of the undermost Layer, which then

begin to sprout; and if these Teeth be lost, they never grow again: but if some have been observed to shed their Teeth twice, they have had three Layers of this viscous Humour, which hardly ever happens. About the one and twentieth Year the two last of the *Molares* spring up, and they are called *Dentes Sapientiae*.

Dentifrice, is a Medicine to cleanse or fasten the Teeth, of what Form soever, whether in Liquid, or Powder.

Dentiformis Processus. See *Pyrenoides*.

Dentition, is the Time wherein Children are breeding their Teeth.

Deobstruent, from *deobstruo*, to open, is said of such Medicines as open Obstructions: See *Detergent*. But there is yet somewhat further expressed in this Term than is to be apprehended under that; for a Medicine may be deobstruent, that is not in the strictest Sense detergent, as are most made of metalline Substances, such as Steel and Mercury; which obtain this Appellation from their acting by their natural Weight, whereby they increase the *Momentum* of the circulating Fluid, and make it strike against the secretory Outlet with a greater Force: because the *Momenta*, or *Vis Percussionis* of all *Projectils*, of which kind is a circulating Fluid, is as their Solidities, supposing their Velocities equal. The more therefore the animal Fluids are saturated with dense and solid Particles, with the greater Force they distend the Vessels, and the more easily break thro' where the Structure favours their Escape; and upon that Account are Medicines which add to these Qualities in the Fluids, called Deobstruents. See *Mars*.

Deopulatory, the same as *Deobstruent*; which see.

Dephlegmation, is such an Operation as takes away the Phlegm from any spirituous Fluid, as by repeated Distillation it is at Length left all behind: and thus

Dephlegmated Spirit, is such Spirit as has no Mixture of Phlegm.

Depilatory, from *de*, of or from, and *Pilæ*, Hair; is such a Medicine as takes the Hairs off from any Place where they are a Deformity, which may commodiously be done with *Rusma*; which see.

Depressor Labii inferioris, or *Quadratus*, is a Muscle consisting of some thin fleshy Fibres, which lie immediately under the Skin upon the Chin; they arise from the Edge of the Fore-part of the under Jaw, and are inserted into the upper Lip.

Depressor Labii superioris, or *Triangularis*, is a Muscle that ariseth from the lower Edge of the under Jaw, between the *Masseter* and *Quadratus*, and ascendeth by the Angle of the Mouth to the upper Jaw. These two Muscles acting together, express a sorrowful Counte-

nance, because they draw downwards the Corners of the Mouth and Cheeks.

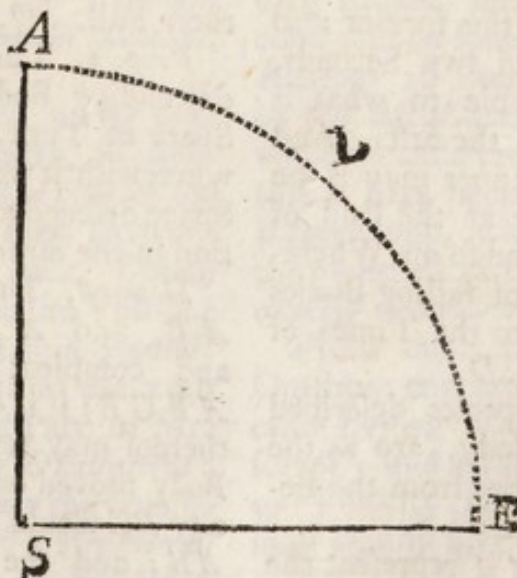
Depressores Nasi, are a Pair of Muscles arising from the *Os Maxillare*, above the *Dentes incisarii*, and are inserted into the Extremities of the *Alæ*, which they pull downwards.

Deprimens Oculi. See *Eye*.

Depuration, signifies the freeing any Liquor or solid Body from its Foulness, which may be effected various Ways. See *Clarification*.

Derivation, is the drawing away of Humours, that threaten any noble Part, to be discharged by some other below, where there is not much Danger; as in Defluxions upon the Eyes, to apply a Blister to the Neck. And such a Translation of Humours sometimes also proceeds from natural Causes.

Descent of heavy Bodies: If a Body descend from *A* by its proper Gravity, it will come to the Center *S* in the same time as another such-like Body by its Revolution shall describe the Quadrant *A D E*. *Princ. Phys. Math. Lib. 1. Prop. 38. Cor. 1.*



Wherefore abstracting from the Resistance of the *Medium*, all Bodies must needs descend equally swift, and come to the Center from the same Height at the same time, as in Fact is found by Experiment true.

An heavy Body let fall from any Height near the Surface of our Earth, descends in a Second of Time $16\frac{1}{4}$ Feet *English*, or 197 Inches and $\frac{1}{2}$.

Prop. 1. The Velocities of descending heavy Bodies are proportionate to the Times from the Beginning of their Falls. This follows (saith the learned Dr. Halley, *Philos. Transf. N. 179.*) because the Action of Gravity being continual, in every Space of Time the following Body receives a new Impulse equal to what it had before in the same Space of Time received from the first Power: *v. gr.* in the first Second of Time a Body hath acquired a Velocity, which in that time would carry it a certain Distance, suppose 32 Foot 2 Inches, and there were no new Force, it would continue to descend at that rate with an *equable Motion*: But in the next Second of Time, the same Power of Gravity continually acting thereon, superadds a new Velocity equal to the former; so that at the End of two Seconds, the Velocity is double to what it was at the End of the first. And after the same Manner may it be proved to be triple at the End of the third Second, and so on. Wherefore the Velocities of falling Bodies are proportionate to the Times of their Falls. *Q. E. D.*

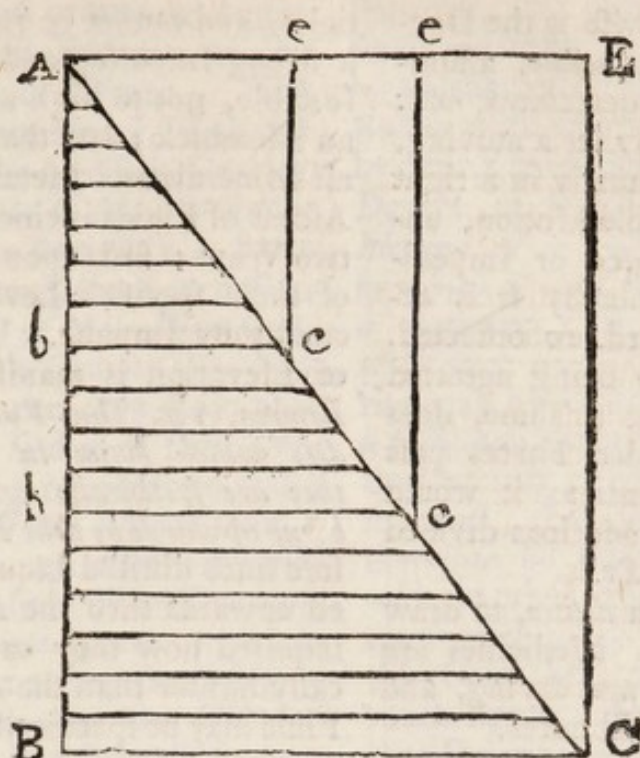
Prop. 2. The Species described by the Fall of a Body, are as the Squares of the Times from the Beginning of the Fall.

Demonst. Let AB represent the Time of the Fall of a Body BC ,

perpendicular to AB , the Velocity acquired at the End of the Fall, and draw the Line AC : then divide the Line AB , representing the time, into as many equal Parts as you please, as $b b b b$, &c. and from these Points draw the Lines, bc, bc , &c. parallel to BC , 'tis manifest that the several Lines bc represent the several Velocities of the falling Body, in such Parts of the Time as AB is of AB : it is evident likewise that the Area ABC is the Sum of all the Lines bc taken together, which according to the Method of Indivisibles, are infinitely many: so that the Area ABC represents the Sum of all the Velocities, between none and BC supposed infinitely many; which Sum is the Space descended in the Time represented by AB . And by the same Reason the Area's Abc will represent the Spaces descended in the Times Ab . So that the Spaces descended in the Times AB, Ab , are as the Area's of the Triangles ABC, Abc ; which by the 20th of the 6th of *Euclid*, are as the Squares of their *Homologous Sides* AB, Ab , that is to say, the Times: wherefore the Descents of falling Bodies are as the Squares of the Times of their Fall. *Q. E. D.*

Prop. 3. The Velocity which a descending Body acquires in any Space of Time, is double to that wherewith it would have moved the Space descended by an *equable Motion* in the same time.

Demonst. Draw EC parallel to AB , and AB parallel to BC , and compleat the Parallelogram $ABCE$; it is evident that the Area thereof may represent the Space, a Body moved equally with the Velocity BC would describe in the Time AB ; and the Triangle ABC represents the Space described by the Fall



Fall of a Body in the same time AB (by the foregoing Proposition.) Now the Triangle ABC is half the Parallelogram $ABCE$, and consequently the Space described by the Fall, is half what would have been described by an equal Motion with the Velocity BC in the same time; wherefore the Velocity BC at the End of the Fall, is double to that Velocity which, in the Time AB , would have described the Space fallen, represented by the Triangle ABC , with an equable Motion. *Q. E. D.*

Prop. 4. All Bodies, on or near the Surface of the Earth, in their Fall descend so, as at the End of the first Second of Time they have described 16 Feet, 1 Inch, *London Measure*, and acquired the Velocity of 32 Feet, 2 Inches in a Second.

This is made out from the 25th Proposition of the 2d Part of Mr. *Huygens de Horologio Oscillatorio*: wherein he demonstrates the time of the least Vibrations of a *Pendulum*, to be to the Time of the Fall of a

Body from the Height of half the Length of the *Pendulum*, as the Circumference of a Circle to its Diameter; whence, as a *Corollary*, it follows, That as the Squares of the Diameter are to the Square of the Circumference, so half the Length of the *Pendulum* vibrating Seconds, is to the Space described by the Fall of a Body in a Second of Time; and the Length of a *Pendulum* vibrating Seconds being found 39, 125, or $\frac{1}{8}$ Inches, the Descent in a Second will be found by the aforesaid Analogy 16 Feet and 1 Inch; and by the last Proposition the Velocity will be double thereto. And near to this it hath been found by several Experiments, which, by reason of the Swiftneſs of the Fall, cannot so exactly determine its Quantity.

From these four Propositions all Questions concerning the *Perpendicular Descent of Bodies*, are easily solved; and either Time, Height, or Velocity being assigned, one may readily find the other two.

From them likewise is the Doctrine of *Projectils* deducible, assuming the two following Axioms, *viz.*

1. That the Body set a moving, will move on continually in a right Line with an equable Motion, unless some other Force or Impediment intervene, whereby it is accelerated, or retarded, or deflected.

2. That a Body being agitated by two Motions at a Time, does by their compounded Forces pass thro' the same Points as it would do, were the two Motions divided and acted successively.

Desiccative, from *desicco*, to draw away, or dry up. Medicines are thus called which are drying, and used to skin over old Sores.

Despumation, from *de spuma*, froth off; is the Clarification of any Liquor, by throwing up its Foulness in a Froth, and taking that off.

Desquammation, from *de squama*, scales off, expresses the cleansing carious Bones which stake off like Scales.

Destillation, or *Distillation*: This is a Process very common in both *Pharmacies*; but yet the Rationale of it may be so little known, as to make it worth while to be somewhat particular in its Explanation; and especially as the Reasoning hereupon will give a good Insight into some other Matters of Consequence within the same Study. This Process is chiefly managed either by the right or oblique Distillation; the first is by the Ascent and Elevation of Particles, which after descend again in the Form of Drops, and is used when the Texture of a Body is such, as allows of an easy Ascent, of which kind are Vegetables: but the oblique is designed, for the most part, for such as consist of heavier Par-

ticles, and cannot be raised without a strong Impulse, and by the most forcible, not so high as the Top of an Alembick; and these are almost all Minerals and Metals. Now the Ascent of Fluids is chiefly promoted two Ways; first upon the Account of their specifick Levity; and secondly by Impulse. The first way of Elevation is manifest from this *Lemma*, *viz. That Particles of Bodies which swim in any Fluid, if they are specifically lighter, must be borne upwards by that Fluid.* Therefore since distill'd Liquors are carried upwards thro' the Air, it's to be inquired how they can be specifically lighter than the Air. Now a Fluid may be specifically lighter than another, when under a larger Surface, it has an equal or less Gravity: According to this Proportion, the Bulk of this Fluid ought to be increased in Distillation: and how easily by the Help of Fire it may be increased, or, which is the same thing, rarefy'd, one who is but tolerably well versed in Physicks may comprehend. And whosoever has but observed a Thermometer, or boiling Water, must be sensible how great a Quantity of Air there is contained almost in all Fluids, and what a Force there is in Heat to rarefy it; for Rarefaction is nothing but the same Quantity of Matter diffused into a greater Space; so that the same Weight remains, tho' the Bulk grows much larger. From whence 'tis plain, there must be a greater Number of Pores in the rarefy'd Body, which are either intirely void of all Matter, or at least of such Matter as hath any considerable Gravity. Further therefore it is necessary to know, what Proportion of Rarefaction is sufficient to produce this specifick Levity. And to set this Matter in the clearest Light,

Light, it is most proper to begin with the simplest Bodies ; as for Instance, that of Water. 'Tis known by Computation, that the Proportion of the specifick Gravity of Water to that of Air, is something more than 800 to 1. Since therefore *Similar Spheres, or Solids, are as the Cubes of their Diameters,* and the specifick Gravity decreases reciprocally in the very same proportion as the Cubes of their Diameters increase ; in order to make a Particle of Water lighter than a Particle of Air, no more is necessary than to rarefy it till its Diameter becomes ten times greater, which in this Case is but a very small degree of Rarefaction : for the Cube of the Diameter, in a Particle so rarefy'd, is 1000. If the Diameter be made eleven times greater, the Cube will be 1331 ; and if twelve, 1728. So that Water when rarefy'd but twelve Degrees, will be above double lighter than Air. And if the Rarefaction be carried on further, it may easily be collected from the encrease of the Numbers, that a Particle of Water may be render'd almost infinitely lighter than Air. And to bring this a little nearer to the present Purpose, 'tis manifest that the Elevation of Bodies, equally fluid and heavy, is always proportionable to their different Aptitude to be rarefy'd ; that is, they ascend quicker upon the Application of any Force, the more susceptible they are of Rarefaction : but in Bodies whose Aptitudes to rarefy are equal the time of Ascent is to be determined by their specifick Gravity. But not only specifick Levity serves to elevate Bodies in Distillation, but an external Impulse may also cause their Ascent. The Impulse which here we have to do with, comes from the Fire, whose

Particles, tho' they are extremely small and light, yet it's demonstrable by Mechanicks, that they may raise Bodies much heavier than themselves by acting upon them with a certain Degree of Force : For since *the Moment of a Body, or that Force by which it acts upon another, is in a compound Ratio of the Quantity of Matter and Celerity ;* the Celerity may be so increased, as to give a sufficient Force to the Body, tho' the Quantity of Matter in it be ever so small. Let some heavy Body therefore be supposed to descend with no other Moment than what it receives from its own Gravity, in this Case then, the Air, which is much lighter, may be moved with that Celerity, as not only to sustain that Body, but to mount it up higher ; and the more rapid the Impetus of the Air is, or the Surface of the Body more diffused, the higher and swifter will the Elevation be ; just as we see Sheets of Lead sometimes torn away entire by the Wind, and carry'd aloft thro' the Air. In like manner, Fire, tho' it be a Body of very minute Particles, may be moved with that rapidity, as to acquire and communicate what Force can be imagin'd towards removing any Obstacles. When therefore the Moment of Fire is augmented in the manner explained, so as to exceed the Force of the distill'd Body, it will remove it from its former Situation ; or what is here the same thing, because the direction of its Motion tends upwards, will carry it up. Thus Particles, specifically heavier than Air, which is contained in the Retort, as those of acid Spirits are, ascend by a more violent Impulse of the Fire used in Distillation. And another material thing which contributes to this purpose, is, That the same Quantity of Matter

Matter is elevated so much the easier in Proportion as the Surface is enlarged; for the more this is diffused, the more Particles of Fire it receives: and so, having this united Force to drive it up, it more easily ascends; so that by the same Degree of Fire, Bodies will not equally arise, tho' they are equally heavy, if there be that Difference in their Surfaces already supposed. The Air also has no small Share in the Business of Impulse; for being rarefy'd by the Fire, it is not only impelled upwards it self, but carries other Particles up with it: And it may be learned by many very familiar Experiments, what Impetus Bodies so rarefy'd exert. Whosoever therefore considers well these three Things, *viz. Specifick Levity, an Impelling Force, and the Extent of Surface*, and what may be effected by them, and how many Ways, and in what Proportions all of them may be changed, will very easily account for all the Variety which is found in the several Processes of Distillation.

Desudation, from *desudo*, to sweat off, expresses a profuse and inordinate Sweating, from what Cause soever.

Detergent. Medicines under this Denomination, are not only softening and adhesive, but also by a peculiar Activity or Disposition to Motion, joined with a suitable Configuration of Parts, are apt to abrade and carry along with them such Particles as they lay hold on in their Passage. All Medicines of this Intention are supposed to cleanse and heal, that is incarnate or fill up with new Flesh all Ulcerations, and Foulnesses occasioned thereby, whether internal or external. Now to do this, in all internal Cases especially, the Medicine must be supposed

to maintain its primary Properties; till it arrives at the Place of Action; and there it does what entitles it to the Appellation of a Detergent and a Vulnerary, first by its adhesive Quality, which consists in the comparative Largeness of Surface, and Flexibility of its component Parts. For by this it very readily falls into Contact with, and adheres to the slough of ulcerous Exudations, which by their loose Situation are easily carried along with the Medicine; and when such Matter is so carried away, which is the cleansing or detaching Part, what was instrumental in this Office will afterwards stick to and adhere with the cutaneous Filaments, until by their Addition, and the Protrusion of proper Nourishment, *ab interno*, to the same Place, the Wound is made up, that is, the Ulcer is healed. And after the same Manner is the Operation of such Substances to be accounted for in external Application. By the Warmth of their Parts they rarefy, and by their adhesive Quality they join with and take off along with them in every Dressing what is thrown upon the Place to which they are applied, until a more convenient Matter is brought thither by the circulating Juices, which it assists in adhering to, and incarnating the eroded Cavities. Only this may be taken Notice of, that internally whatsoever of this kind is mixed with the animal Fluids by the known Laws of Circulation, they will be first separated and left behind: For all those Parts which are specifically heaviest, will move nearest the Axis of the Canals, because their Momenta are the greatest, and will carry them as near as can be in straight Lines; but the lighter Parts will always be jostled to the Sides, where they soonest meet with Out-lets to get quite off, or are struck

struck into such Cavities we are here speaking of, in which they adhere and make Part of the Substance. This for the milder Degree of Detergents; and it is easy to conceive from hence how an Increase of those Qualities of Activity and Adhesion conjointly may make a Medicine arise to the greatest Efficacy in this respect. And it is upon this Foot that all those Medicines operate that are given to cleanse Obstructions or Foulnesses in any of the *Viscera* or Passages; and which may be increased in Efficacy so far as to fetch off even the Membranes and Capillary Vessels.

Detonation: This properly expresses somewhat more forcible than the ordinary crackling of Salts in Calcination, as in the going off of the *Pulvis* or *Aurum Fulminans*, or any such-like Substance, from *detono*, to thunder off. It likewise is used for that Noise which happens upon the Mixture of Fluids that ferment with Violence, as Oil of Turpentine with Oil of Vitriol, resembling the Explosion of Gunpowder. See *Decrepitation*.

Detrusor Urinæ. See *Bladder*.

Devarication, expresses any two things crossing one another, and is very often applied to the particular Tendencies of the Muscular Fibres when they intersect each other at different Angles, which they frequently do.

Dia, in Greek, signifying *ex* or *cum*, of or with, is frequently prefixed in the Name of some Medicines to the principal Ingredient therein; as *Diascordium* is a Composition wherein *Scordium* is the chief Ingredient; *Diasena* from *Sena*, and so of many others.

Diabetes: This is a profuse Discharge by Urine, from *διαβαίνω*, *pervado*, to run through. The evi-

dent and most common Cause is the too great Use of spirituous Liquors, whereby the *Serum* is so impregnated therewith, that it will not attract and join with the Salts of the Blood, and therefore runs off by the Kidneys sweet or insipid. The Cure therefore consists in diluting with aqueous Liquids, especially those impregnated with a lixivial Salt, because they attract the urinary Salts most, from their Similitude to one another, as Lime-Water, and the like; and in withdrawing the Cause.

Diachlysm. The same with *Gargarism*.

Diacodium, is the Syrup of Poppies; from *δια*, *cum*, with, and *κωδία*, *Codia*, which in Botany signifies the Top or Head of any Plant; but by way of Preheminence particularly the Poppy.

Diæresis, is a Division or Solution of Continuity in any Part of the Body, from *διαίρεω*, *divido*, to divide.

Diagnostick, from *δια*, *per*, with or thro', and *γινώσκω*, *cognosco*, to know; is that Judgment of a Disease that is taken from the present Symptoms, and Condition of the Patient.

Diapedesis, is such a Rupture of the Sides of a Vessel of the Body from an internal Cause, as leaves considerable Interstices between the Fibres thro' which the Contents escape, from *δια*, *per*, thro', and *ανδᾶω*, *salio*, to leap.

Diagrydium, is a Preparation of Scammony, which see in the *Dispensatory*.

Diaphanous, from *δια*, *per*, thro', and *φαίω*, *luceo*, to shine; is any transparent Body that may be seen thro', as the Humours of the Eye, the *Cornea Tunica*, &c.

Diaphoresis, signifies all Evacuation made thro' the Habit of the Body and Pores of the Skin; see *Cutis*.

Diaphoreticks, are those Medicines which procure Sweat.

Diaphragm, or *Midriff*, from *διαφράσσω*, *sepio*, or *munio*, to hedge, or wall in. It is also called *Septum Transversum*, or *Cross-Wall*, so called from its Situation, because it divides the Trunk of the Body into two Cavities, the *Thorax* and *Abdomen*. It is composed of two Muscles; the first and superior of these arises from the *Sternum*, and the Ends of the last Ribs on each Side. Its Fibres from this semi-circular Origination, tend towards their Center, and terminate in a Tendon, or *Aponeurosis*, which hath always been taken for the nervous Part of the Midriff. The second and inferior Muscle comes from the *Vertebrae* of the Loins by two Productions, of which that on the right Side comes from the first, second, and third *Vertebrae* of the Loins; that on the left Side is somewhat shorter, and both these Productions join and make the lower Part of the Midriff, which joins its Tendons with the Tendon of the other, so as that they make but one Membrane, or rather Partition. It is covered with a Membrane on its upper Side, and by the *Peritonæum* on the lower Side. It is pierced in the Middle, for the Passage of the *Vena Cava*; in its lower Part for the *Oesophagus*, and the Nerves which go to the upper Orifice of the Stomach, and betwixt the Productions of the inferior Muscle, passes the *Aorta*, the *Thoracick Duct*, and the *Vena Azygos*. It receives Arteries and Veins called *Phrenica*, from the *Cava* and *Aorta*; and sometimes on its lower Part two Branches from the *Vena*

Adeposa, and two Arteries from the *Lumbares*. It has two Nerves which come from the third *Vertebrae* of the Neck, which pass thro' the Cavity of the *Thorax*, and are dispersed in the Muscles of the Midriff. In its natural Situation it is convex on the upper Side towards the Breast, and concave on its lower Side towards the Belly: therefore when its Fibres swell and contract, it must become plain on each Side, and consequently the Cavity of the Breast is enlarged to give Liberty to the Lungs to receive the Air in Inspiration; and the Stomach and Intestines are pressed for the Distribution of the Chyle: but it diminishes the Cavity of the Breast, when it resumes its natural Situation, and presses the Lungs for the Expulsion of the Air in Expiration.

Diary Fever, is a Fever of one Day. See *Ephemera*.

Diarrhœa, from *διαρρέω*, *perfluo*, to flow thro'; is a Flux of the Belly, whereby a Person frequently goes to Stool; and is cured either by purging off the Cause, or restraining the Bowels.

Diarthrosis, from *δια*, *cum*, with, and *ἄρθρον*, *Membrum*, signifies any kind of Articulation of the Bones; but particularly when the Joint is capable of considerable Motion; and of this there are two Sorts, the *Enarthrosis* or *Arthrodia*, and *Ginglymus*. See *Articulation*.

Diastole. See *Artery*.

Diathefes, signifies any particular Disposition of the Body, either good or bad.

Diatribus, *Diateffaron*, and *Diapente*, from *δια*, *cum*, with, and the Words signifying three, four, and five; are Medicines consisting of so many Ingredients.

Didymoi, *δίδυμοι*, signifies strictly Twins, or any thing double, but

is chiefly by Anatomists applied to the Testicles; whence *Epididymi*, which see under Parts of Generation proper to Men.

Diet. The dietetic Part of Medicine is no inconsiderable Branch of Medicine, and seems to require a much greater Share of Regard than it commonly meets with. A great Variety of Distempers might be removed by the Observance of a proper Diet and Regimen, without the Assistance of Medicine; were it not for the Impatience of the Sufferers. However, it may on all Occasions come in as a proper Assistant to the Cure, which sometimes cannot be performed with a due Observance of the Non-Naturals. That Food is in general thought the best and most conducive to long Life, which is most simple, pure, and free from Acrimony; not too volatile, but such as approaches nearest to the Nature of our own Bodies in an healthy State, or capable of being easiest converted into their Substance by the *vis vitæ humana*; after it has been duly prepared by the Art of Cookery: But the Nature, Composition, Virtues and Uses of particular Aliments, can never be learnt to Satisfaction, without the Assistance of Practical Chymistry.

Dieteticks, is that Part of Physick which considers the Way of living with relation to Food, or Diet suitable to any particular Case.

Digastricus, from *δις*, *bis*, twice, and *γαστήρ*, *Venter*, a Belly, is a Muscle so called from its double Belly. It ariseth fleshy from the upper Part of the *Processus Mastoideus*, and descending it contracts into a round Tendon, which passes thro' the *Stylohyoideus*, and an annular Ligament which is fastened to the *Os Hyoides*; then it grows fleshy

again, and ascends towards the Middle of the Edge of the lower Jaw, where it is inserted. When it acteth, it pulleth the lower Jaw down, by the Help of an annular Pulley, which alters its Direction.

Digestion Animal, is the Dissolution or Separation of the Aliments into such minute Parts as are fit to enter the lacteal Vessels, and circulate with the Mass of Blood; or it is the simple breaking of the Cohesion of all the little *Molecula* which compose the Substances we feed upon. Now the principal Agents employ'd in this Action, are, first, the *Saliva*, the Juice of the Glands in the Stomach, and the Liquors we drink, whose chief Property is to soften the Aliments, as they are Fluids which easily enter the Pores of most Bodies, and swelling them break their most intimate Cohesions. And how prodigious a Force Fluids acting in such a Manner have, may be learned from the Force that Water, with which a Rope is wetted, has to raise a Weight fastned to, and sustained at one End of it; and this Force is much augmented by the *Impetus* which the Heat of the Stomach gives to the Particles of the Fluid: nor does this Heat promote Digestion only thus, but likewise by rarefying the Air contained in the Pores of the Food, which helps to burst its Parts asunder. And therefore such Liquors as are most fluid, or whose Particles have the least Viscidity, are most proper for Digestion, because they can the most easily insinuate themselves into the Pores of the Aliments; and of all others, Water seems to be the fittest for this Use: for tho' some spirituous Liquors may as easily penetrate the Substances we feed upon, yet they have another Property, by

by which they hurt rather than help Digestion; and that is, their Particles have a strong attractive Force, by which, when imbibed into the Substance of our Victuals, they draw their Parts nearer to one another, contract and harden, instead of swelling and dissolving them. It is by this Property that they preserve animal and vegetable Substances from corrupting; not but that we find they sometimes help Digestion, as they irritate and excite the Coats of the Stomach to a stronger Contraction: and therefore when they are duly diluted, they may not only be useful, but requisite. When the Food is thus prepared, its Parts are soon separated from one another, and dissolved into a Fluid with the Liquors in the Stomach, by the continual Motions of its Sides, whose absolute Power is demonstrated to be equal to the Pressure of 117088 Pound Weight: To which, if be added the absolute Force of the Diaphragm, and Muscles of the *Abdomen*, which likewise conduce to Digestion, the Sum will amount to 250734 Pound Weight. See *Nutrition*.

Digestion Chymical, is that Solution of Bodies which is made by *Menstruums*, with the Assistance of Fire, and differs from Solution little else than in requiring such Assistance: And to understand this aright, it is necessary to shew how the Particles of Bodies can by this Process be diffused every way, and sustained in the *Menstruum*. And this the more deserves to be accounted for, because these solid Particles have not the same specifick Gravity as the Liquors in which they swim. Tho' the Nature of a perfectly fluid Body be such, as that the Particles which constitute it, do very readily give way upon the smallest Impulse,

and recede from one another, yet there is found in most Liquors some Degree of Tenacity; and from hence arises such a Cohesion of Parts, as cannot be broken without some Force. And tho' indeed this Force of Cohesion in Liquors seems to be but little or none at all, when compared with what we experience in Solids, yet we find it can make some Resistance. And as the Force in Liquors is either stronger or weaker, so it produces a Variety of Effects, differing more or less from the *Phænomena*, which would naturally flow from a perfect Fluid. So that tho' by the Laws of *Hydrostatics*, every Corpuscle, how subtle soever, if put into a Fluid which is specifically lighter, must necessarily sink to the Bottom; yet we find some heavy Bodies, such as Gold, &c. when reduced into thin Plates, will be sustained in Spirit of Wine. This Force therefore of Tenacity, which resists the Motions of Bodies in a Fluid, is proportional to the Number of Parts which are to be separated, or to the Surface of the Body which we would have move in the Fluid. Hence it is, that since the Surface of a Body may be enlarged, without altering any thing of its Gravity, the Resistance of a Fluid may be so augmented, as to equal the Force of Gravity, which carries the Body downwards. And a Body, tho' specifically heavier than a Fluid in which it is immersed, may be very well sustained in that Fluid, provided it be reduced into very small Particles; because the Gravity of a Body thus reduced into small Particles, decreases in a much greater Proportion than the Surface does; or, which is proportional to it, the Tenacity of the Fluid: so that at length the Resistance arising from its Tenacity, will be equal to the

the Gravity of Particles, and so hinder their Descent. And therefore, both in Solution and Digestion it is a general Rule, that if the Gravity of a Body is to the Tenacity of the Fluid, as P to 1, and if the Body be then subdivided, so that the Diameters of the Parts be to that of the Whole as 1 to P, the Resistance which the Particles will meet with in their Descent will be equal to their Gravity; for since their Weight is $\frac{1}{p^3}$, but their Surface $\frac{1}{p^2}$, the Gravity will be to the Resistance as $p^{\frac{1}{3}}$ to $\frac{1}{p^2}$, or as 1 to 1. So that by this we may understand how the Corpuscles of Metal swim in *Menstruums*, which are specifically lighter, as Gold in the Spirit of Nitre, which is drawn off from *Bezoar* Mineral, tho' the Gravity of Gold be 15 times greater. And in the same manner we may understand how Corpuscles, specifically heavier, are suspended in any other *Menstruum*. And it is for the same Reason that such as are lighter cannot rise up to the Surface: for the Pressure of Fluids being equal every way, the superior Parts act reciprocally on the inferior; so that the same Force which keeps the heavy Particles from sinking, will not permit those which are lighter to ascend. The Use of this in Pharmacy is to extract the Particles which are more volatile, by a certain *Menstruum*, and to mix them intimately with it. To this end, a gentle Fire is commonly used, that the Corpuscles which are most volatile may separate as it were of their own accord; for a fierce Fire forces out the *Fæces* as well as the finer Particles; and if it does not abate the Strength of the Liquor, it will not fail of spoiling its Clearness.

Digestives, are such Unguents,

Balsams, or other particular Preparations; as being applied to Wounds, tend to cleanse, heal them, and promote the Discharge of a laudable Matter. See *Ripener* and *Detergent*.

Digester, a strong Vessel or Engine, contrived by M. *Papin*, wherein to boil, with a very strong Heat, any bony Substances, so as to reduce them into a fluid State.

Digitus, a Finger. The Fingers and Thumb in each Hand consist of fifteen Bones, there being three to each Finger; they are a little convex and round towards the Back of the Hand, but hollow and plain towards the Palm, except the last, where the Nails are. The Order of their Dispositions is called first, second, and third *Phalanx*. The first is longer than the second, and the second longer than the third. The upper Extremity of the first Bone of each Finger has a little *Sinus* which receives the round Head of the Bones of the *Metacarpus*. The upper Extremity of the second and third Bones of each Finger hath two small *Sinus's* parted by a little Protuberance; and the lower Extremity of the first and second Bones of each Finger has two Protuberances divided by a small *Sinus*. The two Protuberances are received into the two *Sinus's* of the Upper Extremity of the second and third Bones; and the small *Sinus* receives the little Protuberance of the same End of the same Bones. The first Bone of the Thumb is like to the Bones of the *Metacarpus*, and it is joined to the Wrist, and second of the Thumb, as they are to the Wrist and first of the Fingers. The second Bone of the Thumb is like the first Bones of the Fingers, and it is joined to the first and third, as they are to the Bones of the *Metacarpus*,

carpus, and second of the Fingers. The Fingers are moved side-ways only upon their first Joint. Besides these Bones there are some small ones, called *Offa Sesamoidea*, because they resemble *Sesamum* Grains: they are reckoned about twelve in each Hand; they are placed at the Joints of the Fingers under the Tendons of the *Flexores Degitorum* to which they serve as so many Pullies.

Dilatation, is the laying open any Orifice, or the Lips of a Wound wider; or the Extension of any Vessel. And as

Dilatorium, is an Instrument with which Surgeons dilate any Part.

Dilute, is to thin a Fluid by the Addition of a thinner thereunto. And such things are called

Diluents, or *Dilutors*; such as common Whey, Ptisans, and Juleps, which in respect of the Blood in a State of Viscidity are thinner than it, and therefore said to thin it.

Dimension, is either Length, Breadth, or Thickness; all which when considered together, are called the Trine Dimension. As a Line has only Length; a Surface, Length and Breadth; and a Body, or Solid, has all three Dimensions.

Dilatores Nasi, are small thin Muscles, having a double Order of Fibres decussating each other, arising from the *Ox Maxillare*, and inserted into the Sides of the *Alæ*; they dilate the Nostrils.

Dinos, the same with *Vertigo*, an apparent turning round of the Objects of Sight, together with a Failure of the Limbs, proceeding from the same Causes as the Apoplexy, tho' in a less Degree.

Dioptricks, concern the different Refractions of Light passing thro' different Mediums, as the Air, Water, Glasses, &c.

Diploe, expresses the two Plates of the *Cranium*, which see; *Rolfinkius* also applies it to the *Uterus*, which he says consists of two Membranes in like Manner jointed, and divisible.

Diradiation, or *Irradiation*, strictly signifies to dart out Light; and is applied by some Anatomists to the sudden Invigoration of the Muscles by the animal Spirits.

Direction, is the Line of Motion that any Body observes according to the Force impressed upon it; and is often called the Line of Direction.

Discous, or *Discoidal*, is a Term used by Botanists to denote the middle, Plain, and flat Part of some Flowers, such as the *Flos Solis*, &c. because it is in Figure like the antient *Discus*, which was a round Quoit used by the Romans in their Exercises.

Discutient, applied to Medicines, signifies such as have a Power to repel or drive back the Matter of Tumours into the Blood, with permitting it to separate. It also sometimes means the same as *Carminative*, which see.

Disease, is an irregular Circulation of the animal Fluids. See *Morbus*.

Dislocation, is a Bone put out of Joint; the same as *Luxation*.

Dispensation, is the Weighing and Measuring out the proper Quantities of Ingredients for a compound Medicine; and

Dispensatory, is a Book of Rules, directing such Quantities.

Dissection, cutting asunder, the same as *Anatomy*.

Dissimilar, consisting of Parts unlike in Figure, or other Properties.

Dissolution, is a Term very laxly used in Pharmacy to signify the dissolving, or making thinner any Substances; but as it concerns the reducing

ducing of solid Bodies into a State of Fluidity by the Help of some Liquor, it will best be explained by the Solution of Salts, which is the most simple Operation that falls under this Head. And this Motion may very well be accounted for by that attractive Force which is so very extensive in natural Philosophy, that there is no kind of Matter, but what is under its Influence. It may be observed, that the Corpuscles of Salts, which are the most simple of any, are withal very minute, and for their Bulk very solid; and therefore exert a very strong attractive Force, which, *cæteris paribus*, is proportional to the Quantity of Matter. Hence it comes to pass, that the Particles of Water are more strongly attracted by the saline Particles, than they are by one another: The Particles of Water therefore cohering but loosely, and being easily moveable, approach the Corpuscles of Salts, and run as it were into their Embraces; and the Motion of them is quicker or slower, according to their less or greater Distances; the attractive Force in all Bodies being strongest at the Point of Contact. Therefore if Salt be thrown into the Middle of a Dish full of Water, we shall find the aqueous Particles, which are in the Middle of the Dish, sharp and pungent to the Taste; but the Water upon the Sides of the Vessel almost insipid. So that when such a Motion once arises, the aqueous Particles are carried with some Force towards the Salts; and the Moment of them is to be estimated from the *Ratio* of their Weight and Celerity conjunctly. By the Force of this Impulse they open to themselves a Passage into the Pores of the Salts, which are very numerous; and at Length they break and divide their

Texture, that all Cohesion of their Parts is destroy'd: hereupon being separated, and removed to a convenient Distance from one another, they are dispersed, and float here and there about the Water. See *Fusion*, *Solution*, and *Prop.* 14. under *Particles*.

Distension, is when Parts are stretched beyond their natural Size.

Distillation. See *Destillation*.

Distraction, from *de*, from, and *traho*, to draw, is pulling a Fibre or Membrane beyond its natural Extent; and what is capable of this Enlargement, is said to be Distractile. See *Fibre*.

Divinum, is used variously by physical Writers, and sometimes by the same Person; and *Hippocrates* himself does not always keep to it the same Sense; but the Chymists and Medicine-Makers have most deviated from the proper Meaning of the Word, by applying it very conceitedly to several things, of whose Virtues they had extravagant Opinions, as it is by *Fernelius* to a Water, by *Scultetus* to a Cerate, and by others to a Plaister, lately expunged the *London-Dispensatory*.

Diuresis, from *δια*, *per*, thro' and *ῥέω*, *fluo*, to flow; is used to express that Separation which is made of the Urine by the Kidneys: and what most promotes such a Separation, is called

Diuretick, such Medicines as work by Urine.

Diverge: Those Rays are said to do, which going from a Point of the visible Object, are dispersed, and continually depart from one another, according as they are removed from the Object. The Fibres or Threads also, which from a Point spread themselves upon any Muscle or Membrane, are frequently signify'd by the same Term.

Divisibility, is that Property of a Body, whereby it is conceived to have Parts, and into which it may actually or mentally be divided. All Quantity is infinitely divisible; yet this cannot be actually effected, because when any Quantity is divided into any Number of Parts, every one of those Parts is further divisible into as many more Parts, and so on; so that there can be no such thing as a determinate Number of Parts in any continued Quantity.

Dogmatica Medicina, is understood of that State of Medicine, which adds Reason to Experience; from *δοκέω*, *censeo*, to judge; and the divine *Hippocrates* was the first of this Distinction, called

Dogmatici, Physicians who reasoned upon Experience, in Opposition to those Sects who were called *Methodists* and *Empiricks*, and conducted their Practice only by Observation and Example, without examining into the Reasons for such particular Proceedings.

Dorsum, is the hinder Part of the *Thorax*, tho' as translated *Back*, it includes the Loins also; and *Dorsum Manús* and *Pedis*, is the outside of the Hand and Foot: hence

Dorsale is applied to Distempers, whose Seat is supposed in the Back, as the *Tapes Dorsalis*; and to external Remedies, as *Emplastrum Dorsale*, and the like.

Dose, is so much of any Medicine as is taken at one Time.

Drachm, in Medicine, is the eighth Part of an Ounce, and contains three Scruples or sixty Grains.

Draco, is known well enough in its common Signification; but the Chymists have grievously tortured it to a great many Purposes, tho' most of them very unintelligible, especially those of *Basil Valentine*,

in that most incomprehensible Book called his *Last Will and Testament*. *Quercetan* applies it both to some Preparations of Quicksilver and Antimony; and the *Draco Mitigatus* hath long obtained as a Name for the *Mercurius Dulcis*: But these Whimfies are now almost in Contempt.

Drastick, from *δραστικός*, *activus*, brisk; is a Medicine that works with Speed, as *Jalap*, *Scammony*, and the stronger Purges.

Drawers. See *Ripeners*.

Dropax, is an external stimulating Form of Medicine, applied in the Manner of a Plaister, to cause a Redness, Heat, and Tumour in the Part, that is grown senseless or benumbed. Pitch, Galbanum, Pelitory, Sal-armoniac, &c. are generally used for this Purpose.

Dropsy. See *Hydrops*.

Ductus, by Anatomists, expresses any Canal, Pipe, or Conveyance; hence

Ductus Adiposi, are a Net of small Vessels, which *Malpighi* supposes to bring the Fat into the Cells which preserve it; but their Rise cannot yet be discovered, and their Appearance is uncertain.

Ductus Biliarius. See *Jecur*.

Ductus Chyliferus. See *Ductus Thoracicus*.

Ductus Communis Choledocus. See *Jecur*.

Ductus Cysticus. See *Cysticus Ductus*.

Ductus Hippaticus. See *Jecur*.

Ductus Lachrymales, are the excretory Ducts of the *Glandulae Lachrymales*; which see.

Ductus Pancreaticus. See *Pancreas*.

Ductus Salivales, are the Pipes which spew out the *Saliva* from several Glands into the Mouth; which see under their respective Names.

Ductus

Ductus Thoracicus. See *Lacteal Veins*.

Ductus Urinarius, the same with *Urethra*; which see.

Duodenum. This is the first Division of the Intestines, and about twelve Fingers breadth long; it is continued to the *Pylorus*, from which turning downwards, it runs under the Stomach immediately above the *Vertebrae*, towards the left Side, and ends at the first of the Windings under the *Colon*. At its lower End there are two Canals, which open in its Cavity; one comes from the Liver and Gall-bladder, called the *Ductus Communis Choledochus*; and the other from the *Pancreas*, called *Pancreaticus*. Its Passage is straighter, and its Coats thicker than any of the three upper Divisions of the Intestines.

Duplicature, is the Doubling of any Membranes, when they go off to some distance and return again.

Dura Mater, is a strong and thick Membrane which covers all the Cavity of the *Cranium*; it contains the whole Brain somewhat loosely, that the Vessels which run between its Duplicature, and upon the Surface of the Brain, be not too much pressed by the Skull. It sticks very close to the Basis of the Skull, and to its Sutures, by the Fibres and Vessels it sends to the *Pericranium*; it is fastened to the *Pia Mater* and the Brain, by the Vessels which pass from one to the other. It gives a Coat or Covering to all the Nerves which rise from the Brain to the *Medulla Spinalis*, and to all the Nerves which rise from it. Its Surface is rough towards the Skull, and smooth towards the Brain. It is a double Membrane woven of strong Fibres, which may be plainly seen on its Inside, but very little on its

outside next the Skull. It has three Processes made by the doubling of its inner Membrane. The first rises from a narrow Beginning from the *Crista Galli*, to which it is fastened; and as it approaches the hind-part of the Head, it grows broader and broader, till it terminates where the longitudinal *Sinus* ends. It divides the *Cerebrum* into two Hemispheres, near as deep as the *Corpus Callosum*. It resembles a Sickle, and therefore is called *Falx*. The second separates the *Cerebrum* from the *Cerebellum*, down to the *Medulla Oblongata*, that the Weight of the *Cerebrum* may not offend the *Cerebellum* which lies under it. This Process is very strong and thick, and in ravenous Beasts it is for the most part bony, because of the violent Motion of their Brain. The third is the smallest; it separates the external Substance of the hinder-part of the *Cerebellum* into two Protuberances. In this Membrane there are several *Sinus's* or Channels, which run between its internal and external Membrane: of these there are four principal ones, which are commonly described; the first is the *Sinus longitudinalis*, which rises from the blind Hole in the upper-part of the *Crista Galli*; it runs along the upper part of the *Falx*, and ends with it, and lies exactly under the *Sutura Sagittalis*. Into this *Sinus* the Veins of the Brain, and some of the proper Veins of the *Dura Mater*, bring back the Blood which they receive from the Arteries. Of these Veins some running obliquely from the fore-part of the Brain backwards, and others contrary from the hind-part forwards, keep a little Space between the Duplicature of the Membrane, as the *Ureters* do upon the Bladder, and

so they open in the *Sinus*. In this there are several small Cells and round Ligaments, which go from one Side of the Cavity to the other. These by their Elasticity, further the Motion of the Blood. The second and third *Sinus*'s which this pours into, are the lateral; they arise from the end of the first, into which they open, and going down upon the sides of the *Occipital* Bone, in a crooked Way, they pass thro' the same Hole with the eighth Pair of Nerves, and discharge themselves into the internal *Jugulars*. Into these *Sinus*'s some Veins, and the other *Sinus*'s discharge themselves. The fourth *Sinus* runs by the broad Extremity of the *Falx*, and opens where the lateral *Sinus*'s join the *Longitudinal*. This meeting of the four *Sinus*'s is called *Torcular*. It receives the Blood at its other Extremity from the *Plexus Choroides*. Besides these, there are more of inferior Note mentioned by some curious Anatomists, as *Du Verney*, *Dr. Ridley*, &c. which see. Their Use is to receive the Blood of the adjacent Parts from the Veins to which they are as so many Trunks which discharge the Blood into the internal *Jugulars*. The Vessels of the *Dura Mater*, are first a Branch from the *Carotidal*, whilst it is in its long Canal, which is dispersed in the fore and lower Part of the *Dura Mater*; secondly, an Artery which enters the Hole of the Skull, called *Foramen Arteriæ Duræ Matris*: It is dispersed on the sides of this Membrane, and runs as high as the *Sinus longitudinalis*. The Vein which accompanies the Branches of this Artery, goes out of the Skull by the *Foramen Lacerum*. Thirdly, a Branch of the vertebral Artery and Vein, which last passes thro' the Hole behind the *occipital Apophysis*, where

they are dispersed in the hind-part of the *Dura Mater*. The Blood which is brought by the Arteries is carried back by the Veins, which go out at the same Holes by which the Arteries enter: But in case the Swelling of the Arteries by a preternatural Turgescence of the Blood should compress the Veins as they go out of the Skull, which might easily happen, seeing it has more Arteries than Veins; therefore there are several other Veins which inosculate with the Arteries, and which carry the Blood from them into two small Veins, which are on the sides of the longitudinal *Sinus*'s: 'tis these Veins which open into this *Sinus*, that the Blood which was stopt in the other Way, may have a free Circulation in this. It hath also Nerves from the Branches of the fifth Pair, which give it an exquisite Sense. It has a Motion of *Systole* and *Diastole*, which is caused by the Arteries which enter the Skull. No doubt the great Number of Arteries in the Brain contribute more to it, than those few proper to it self, which may assist a little, tho' not very sensibly, because of their Smallness and Paucity. The Use of the *Dura Mater* is to cover the Brain, the spinal Marrow, and all the Nerves, to divide the *Cerebrum* in two, and to hinder it from pressing the *Cerebellum*.

Dystocia, signifies a difficult Birth.

Dyota, is a circulatory Vessel, the lower Part whereof is fashioned like a Cucurbit, and whereto an Alembick is adapted.

Dyscrasy, from *δύς*, *malè*, bad, and *κράσις*, or *κρασία*, *Temperamentum*, a Constitution; is an ill Habit of Body, as a *Jaundice*, or the like.

Dyselchia, signifies Ulcers of difficult Cure, as they are particularly in dropical or moist Constitutions, where a constant Drain of Humours is hard to be prevented.

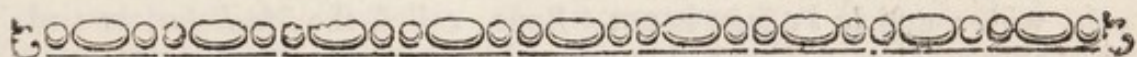
Dysentery, from *δύς*, *malè*, bad, *ἐντέρον*, *Intestinum*, a Bowel, and *ρέω*, *fluo*, to run; is a Looseness wherein very ill Humours flow off by Stool, and are also sometimes attended with Blood. The Cure is in Astringents, Balsamicks, and healing Broths.

Dyspepsy, from *δύς*, *malè*, bad, and *πέπω*, *coquo*, to concoct, is a bad Digestion, and is generally confined to the Office of the Stomach.

Bitters and Subastringents are its Remedy.

Dyspnœa, from *δύς*, *difficulter*, hardly, and *πνέω*, *spiro*, to breathe; is a Difficulty of breathing, as in an *Asthma*; which may proceed from various Causes, and therefore the Means of Cure are to be contrived accordingly.

Dysuria, from *δύς*, *malè*, and *ῥέον*, *Urina*, Urine, and *ρέω*, *fluo*, to flow; is a Difficulty in making Urine, from divers Causes, and therefore accordingly to be cured. The same Particle *δύς*, is also applied to many other things, only to express their being in an ill State.



E

EAR is divided into the external and internal. The external is also divided into two Parts, of which the upper is called *Pinna*, or the Wing, the lower *Fibra*, or Lobe. The Parts of the *Pinna*, are the *Helix*, which is the outer Circle or Border of the Ear; the *Antihelix*, which is the Semicircle within the other: The lower End of the Semicircle makes a little Prominence, which is called *Antitragus*; because there is another Prominence just opposite to it, which is called *Tragus*, by Reason of some Hair that is upon it. The Cavity made by the Extremity of the *Helix* is called *Concha*: The Hollow in the middle of the Ear is called *Alvearium*, and has a Hole which leads to the *Tympanum*, named *Meatus Auditorius*. This external Part is composed of the Skin, a Cartilage, and a little Fat. The Skin is thin and smooth; its Glands seem

to differ from the common *milliary* Glands of the Skin, in that both in young and old they frequently flow with an unctuous Humour, which dries to a Sort of Scurf in the *Concha*. These are called *Glandule Sebaceæ*. The Skin sticks close to the Cartilage by means of the *Membrana adiposa*, whose Cells contain no Fat but in the Lobe of the Ear, where the Cartilage does not reach. The Vessels of the external Ear are Arteries from the *Carotide* Veins, which go to the *Jugulares*, and Nerves from the *Portio Dura*, and second Pair of the Neck. It is tied to the Back of the *Os Petrosum* by a strong Ligament which comes from the Backside of the *Pinna*. Tho' it has but a very obscure Motion, yet it has two Muscles; the first arises from the Outside of the frontal Muscle, where it joins the *Crotaphite*, and is inserted into the upper Back-part of the *Pinna*. The second

cond arises from the upper and foremost Part of the *Processe Mammillaris*, and is inserted into the middle and back-part of the *Concha*. The first should draw the Ear upwards, and the second downwards and backwards, but the continual binding of the Ears when young, deprives us of their Use. The Use of the external Ear is like a Tunnel to gather the Sounds, which by its Ridges and Hollows are directed to the *Meatus Auditorius*, the first part of the internal Ear. This is a Conduit which goes from the middle of the *Concha* to the *Tympanum*; it is near an Inch long, about three or four Lines, or twelfth Parts of an Inch, wide; and its Passage is not straight but crooked, passing first upwards and then downwards, when it has a small Tendency upwards, again, and the lower part of its Extremity bends a little down to the obliquity of the *Membrana Tympani*. The beginning of this Passage is cartilaginous, being a Continuation of the *Concha* contracted; the End of it is bony, which makes the greatest part of the upper and back-part of the *Meatus*, as the Cartilage does of the lower and fore-part. The whole Cavity within is lined with a Membrane, which seems to be a Continuation of the Skin which covers the *Auricula*, and which grows thinner and thinner as it approaches the *Tympanum*. On the back-side of this Membrane there is a great number of little Glands, whose excretory Ducts bring into the *Meatus* a yellow Excrement, whose Bitterness and Viscidity hinders Insects from approaching the *Membrana Tympani*, which it likewise preserves against the Injuries of Air. The Cartilage is always slit, and frequently in more than one Place. The *Meatus* has the

same Vessels which the external Ear has, and both have a Vein which passes thro' the eleventh of the external Holes of the Skull, and discharges it self into the lateral *Sinus's*. The inner Extremity of the *Meatus* is closed with a thin transparent Membrane, of an oval Figure, stretched out like the Head of a Drum, making an obtuse Angle with the upper and back-part of the *Meatus*, and an acute with the lower and fore-part. This is the *Membrana Tympani*, which is set in a bony Circle of the temporal Bone, and which wants about half a Line of being a compleat Circle. The Handle of a small Bone, called the *Malleolus*, is tied to this Membrane, which it draws somewhat inwards, making it a little concave towards the *Meatus Auditorius*: and there runs a small Twig of a Nerve from the fifth Pair upon its inside, called *Chorda Tympani*. The upper Edge of this Membrane being sometimes not quite closed to the Bone, gives a Passage for the Air from the Mouth to the external Ear. Behind this Membrane there is a pretty large Cavity called the *Tympanum*, it is about three or four Lines deep, as much wide, and between two and three high: It is lined with a fine Membrane, on which there are several Veins and Arteries. It is always full of a purulent Matter in Children. In this Cavity there are four small Bones, of which the first is the *Malleolus*, or Hammer, so called because of its Shape. Its Head has on its lower side two Protuberances, and a Cavity whereby it is joined to the *Incus* by *Ginglymus*: Its Handle, which is pretty long and small, is fastened to the *Membrana Tympani*: Its whole Length is about three Lines, or a little

little more. Near its Head it has two small Processes, and it is moved by three Muscles; the first is called the *Externus*; it rises from the upper and external Side of the *Meatus Auditorius*, and is inserted into the upper and lower Process of the *Malleolus*, which it draws outwards. This is necessary when Sounds are too great, because they might break the *Membrana Tympani*. The second is the *Obliquus*; it lies in the external Part of the Conduit which goes to the Palate, and entering the Barrel, it is contained in a Sinuosity of the Bone by the upper Edge of the *Membrana Tympani*, and is inserted into the slender Process of the Hammer, assisting the former Muscle in its Action. The third is the *Internus*, which arises from the Extremity of the bony Part of the Conduit which leads to the *Fauces*, and lies in a *Sinus* of the *Os Petrosum*, till it passes over a little Rising of the Bone at the *Fenestra Ovalis*, to be inserted into the posterior Part of the Handle of the *Malleolus*. This Muscle, by pulling the Hammer inwards, distends the *Membrana Tympani*. The second small Bone is called the *Incus*, the Anvil; it has a Head and two Legs: Its Head, which is near two Lines long, above one broad, and but half a Line thick, has a Protuberance and two Cavities, whereby it is articulated with the Hammer; the shorter of its Legs is tied to that Side of the Conduit which goes to the *Processus Mammillaris*, and its longer Leg to the Head of the third Bone, called the *Stapes*, or Stirrup, because of its Resemblance: 'Tis of a triangular Figure, made of two Branches set upon a flat Basis, which stands upon the *Foramen Ovale*. The Space between the

two Branches is filled up by a fine transparent Membrane; the Union of the two Branches is called the Head of the Stirrup, in which there is a small Cavity, wherein lies the fourth Bone. The Height of the *Stapes* is a Line and a half, the Length of it above a Line, and the Breadth half a Line. There is a small Muscle which arises out of a small Canal in the Bottom of the *Tympanum*, and which is inserted into the Head of the Stirrup. The *Os Orbiculare*, which is a very small Bone, being convex on that Side which is received in the Cavity of the Head of the Stirrup, and hollow on the other Side, where it receives the long Leg of the Anvil, which is only joined to the Stirrup by means of this fourth Bone. Besides these Bones, there are several Holes in the *Tympanum*: the first is in its fore-part near the *Membrana Tympani*: It is the Entry to the *Sinus* in the *Mammillary Process*. The second is the Orifice of a Conduit which leads to the Palate of the Mouth; The Beginning of this Passage is very narrow and bony, the Middle is cartilaginous; and its Extremity, which opens near the *Uvula*, is above four Lines wide, membranous, and dilated by some muscular Fibres; and they open the Extremity of this Passage either when we open our Mouths to hear more distinctly; or when it is necessary there should be a free Communication between the external Air, and that in the Cavity of the *Tympanum*. The third and fourth are in the internal Process of the *Os Petrosum*; the one is called *Fenestra Ovalis*; the Basis of the Stirrup stands upon it, and it is in the Entry to the *Vestibulum*: The other is called *Fenestra Rotunda*, is covered by a fine Membrane,

ⁱnclosed in a Rift of this Hole; and it leads to the *Cochlea*. The *Vestibulum* is a Cavity in the *Os Petrosum*, behind the *Fenestra Ovalis*; it is above two Lines broad, as much long, and a Line and a half high. In it open the semicircular Pipes of the Labyrinth, the upper Turning of the *Cochlea*, and the auditory Nerve, at five small Holes. The Labyrinth is made of three semicircular Pipes, above half a Line wide, excavated in the *Os Petrosum*; they open by five Orifices into the *Vestibulum*. That which is called the superior Pipe, and is generally about five or six Lines long, joins one of its Extremities with one of the Extremities of that which is called the superior Pipe; and these two Extremities open by one Orifice, but the middle Pipe opens at each End by itself into the *Vestibulum*. The last Cavity of the Ear is the *Cochlea*, it resembles a Snail's Shell. Its Canal, which winds in a spiral Line, is divided into two, the upper and lower by a thin *Lamina Spiralis*, of which the Part next the Axis is bony, but extremely brittle; and that next the outer Shell is membranous, appearing to be only made of the auditory Nerve. The upper Canal opens into the *Tympanum*, and the lower into the *Vestibulum*: This is narrower than that, especially towards the Basis of the *Cochlea*, where each is about a Line wide, and the Basis itself is about four Lines Diameter. The Vessels of the internal Ear are Arteries and Veins, from the internal *Carotidales* and *Jugulars*. The *Nervus Auditorius* enters by the Hole in the internal Process of the *Os Petrosum*. It consists of two Bundles, of which one is hard, the other soft. Five Branches of the *Portio Mollis* enter the *Vestibulum*, and from a delicate

Web, which send Slips that run thro' the semicircular Canals; and the rest of the *Portio Mollis* enters the *Cochlea* at the Center of its Base, and turns with the spiral Line, of which it probably makes the membranous Part. The *Portio Dura* passes thro' its proper Passage, to be distributed among the external Parts about the Ear.

Earth, is one of the chymical Principles, and that Part of Bodies which most answers to what they call *Caput Mortuum*, that is last left in the Furnace, and is neither capable of being raised by Distillation, nor dissolved by Solution.

Ebullition, is strictly any boiling up, like that of Water over the Fire, but is generally used to signify that Stuggling or Effervescence which arises from the mingling together of any alkalizate and acid Liquor: and hence any intestine violent Motion of the Parts of a Fluid, occasioned by the struggling of Particles of different Properties, is called by this Name.

Ecchymosis, from ἐκχύω, *effundo*, to pour out, and αἷμα, *Sanguis*, Blood; signifies those livid Spots or Blotches in the Skin, which are made by extravasated Blood; the same as *Ecchymoma*.

Eccoprotics, are such Medicines as gently purge the Belly, so as to bring away no more than the natural Excrements lodged in the Intestines, as is signified by the Word.

Echinus, amongst Botanists is the prickly Head or Top of any Plant, so called from its Likeness to a Hedge-Hog.

Eclegma, from ἐκλείχω, *lingo*, to lick; is a Form of Medicine made by the Incorporation of Oils with Syrups, and which is to be taken upon a Liquorice Stick; the same also as *Lambative*, from *Lambo*, which

which signifies the same ; and *Linetus*.

Ecpbraetia, from ἐκπράωω, *de-obstruo*, to open ; are such Medicines as incide and render more thin tough Humours, so as to promote their Discharge.

Edulcoration, signifies the same as *Ablution*, which see ; as also to sweeten any thing with Sugar or Syrops.

Effervescence, expresses a greater Degree of Motion or Struggling of the small Parts of a Liquor than is commonly understood by Fermentation or Ebullition ; and such as occasions great Heat.

Efflorescence, signifying to flower out, expresses the breaking out of some Humours in the Skin, as in the Measles, and the like.

Effluvia, from *effluo*, to flow out, are those small Particles which are continually flying off from Bodies ; the Subtily and Fineness of which appears from their being able a long Time together, to produce very sensible Effects, without any sensible Diminution of the Body from whence they arise : And the considerable Effects they may have upon other Bodies within the Sphere of their Activity, may be learned from the Writings of Mr. Boyle, and others on that Subject.

Egg of Glass, a Vessel in Chymistry, whose hollow Body or Bottom part is Oval, or fashion'd like an Egg ; but rises up in a slender Stem.

Ejaculatory Vessels ; see Generation, Parts of, proper to Men.

Ejection, signifying to throw out ; is the Discharge of any thing by Vomit, Stool, or any other Emuncatory.

Elæosaccharum, from ἔλαιον, *Oleum*, and *Saccharum*, Sugar ; denotes the Mixture of Oil and Sugar together, which is frequently done

with the distill'd Oils, to make them mix with aqueous Fluids for present Use. 'Tis an admirable Form of Medicine, and highly deserves to be better esteemed, and more frequently used than we find it. All the Virtues of Vegetables are with great Advantage reducible into it. 'Tis very ready and commodious for taking, and capable of continuing for a long Time unalter'd, and of being transported to distant Regions, without any Diminution of its Virtue.

Elastick, signifies a Force in Bodies, by which they endeavour to restore themselves to the Posture from whence they were displaced by any external Force. To solve this Property, many have Recourse to the universal Law of Nature, Attraction, by which the Parts of solid and firm Bodies are caused to cohere together ; whereby when hard Bodies are struck or bent, so that the component Parts are a little moved from one another, but not quite disjoined or broken off, nor separated so far as to be out of the Power of that attracting Force, by which they cohere together ; they certainly must on the Cessation of the external Violence, spring back with a very great Velocity to their former natural State ; but in this circumstance the atmospherical Pressure will account for it as well, because such a Violence, if it be not great enough to separate the constituent Particles of a Body far enough to let in any foreign Matter, must occasion many *Vacuola* between the separated Surfaces, so that upon the Removal they will close again by the Pressure of the aerial Fluid upon the external Parts, *i. e.* the Body will come again into its natural Posture. The included Air likewise in most Bodies, gives that Power of Resilition upon their Percussion ; and

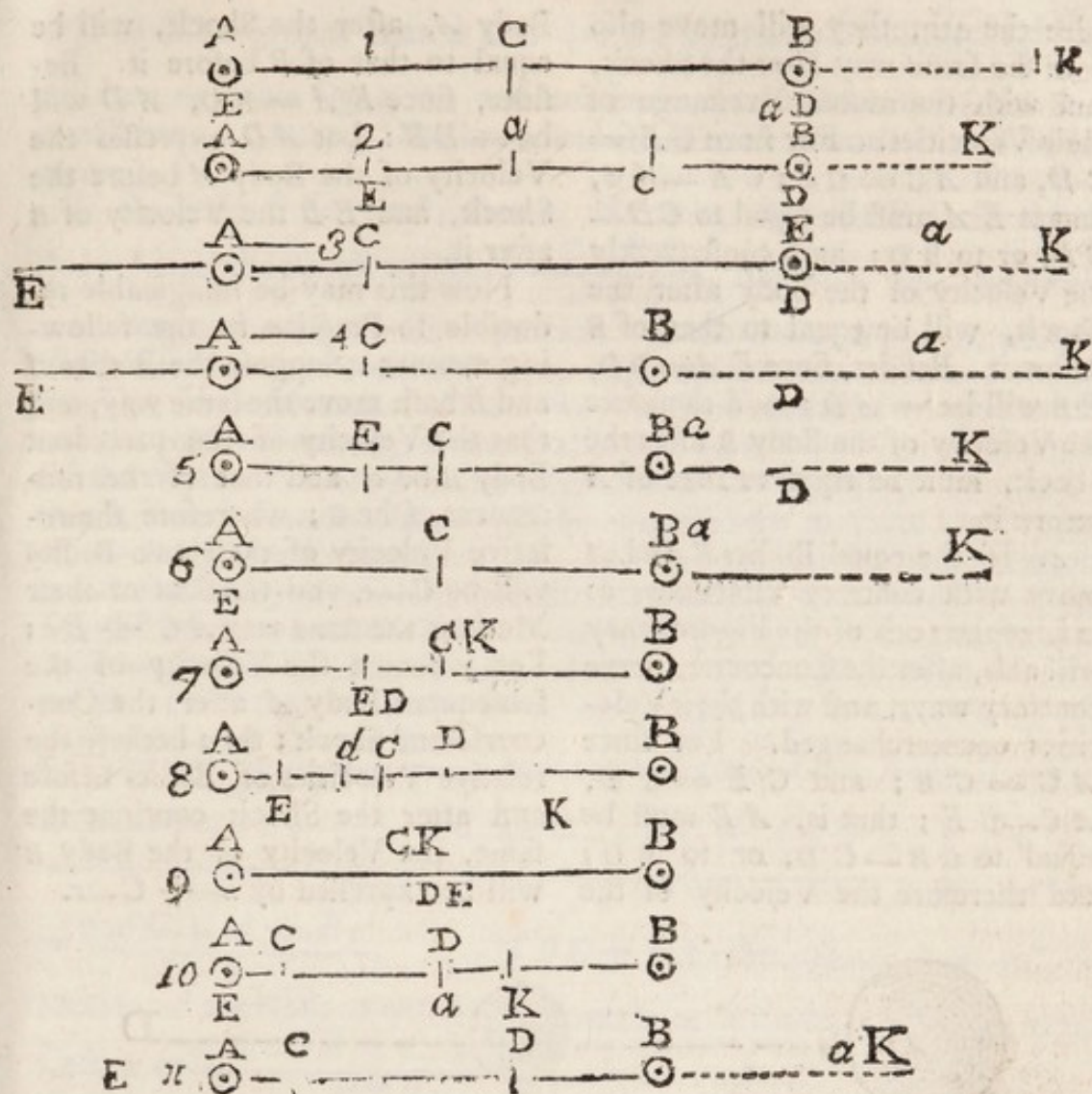
and because a tolerable Understanding of this Affair is of great Importance in physical Reasoning, and helpful to the Knowledge of many modern Writings, it may be worth giving an Abstract hereof from the best Authors upon the Subject.

If two Bodies perfectly Elastick strike one against another, there will be or remain in each the same relative Velocity as before, *i. e.* they will recede with the same Velocity as they meet together with. For the compressive Force, or the Magnitude of the Stroke in any given Bodies, arises from the relative Velocity of those Bodies, and is proportional to it: And Bodies perfectly Elastick, will restore themselves compleatly to the Figure they had before the Shock; or, in other Words, the restitutive Force is equal to the compressive, and therefore must be equal to the Force with which they came together, and consequently they must by Elasticity recede again from each other with the same Velocity. Hence, taking equal Times before and after the Shock, the Distances between the Bodies will be equal: And therefore the Distances of Times from the common Center of Gravity will, in the same Times, be equal. And hence the Laws of Percussion of Bodies perfectly Elastical are easily deduced.

Let there be two Bodies *A* and *B*, perfectly Elastical, whose common Center of Gravity let be *C*, and let *D* be the Point of Concourse where the Bodies meet; make *CE* always equal to *CD*. Then after the Concourse or Shock, the right Line *CE* will express the Velocity of the Body *A*, from *E* towards *A*; and the right Line *BE* will express the Velocity of the Body *B*, from *E* towards *B*.

Since the common Center of Gravity of any Bodies proceeds on with the same uniform Progression, and with the same Velocity both before and after the Shock and Impulse; and that in a Time equal to that in which the Body *A* moves the Length *AD*, or the Center of Gravity *C* moves the Length *CD*; and after the Concourse, the same Point *C* will move the Length *DK = DC*: This being so, let *Ka* be taken equal to *CA*; then taking equal Times both before and after the Impulse, the Distances of the Bodies from the common Center of Gravity will always be equal; then in what time the common Center of Gravity will be in *K*, the Body *A* will be found to be in *a*; and therefore after the Impulse, its Motion will be from *D* towards *a*, and its Velocity will be expressed by *Da*, which is the Length run over in that Time. But because *CE = CD*, or to *KC*, and *Ca = Ka*, the Difference between the right Lines *CE* and *CA*, will be equal to the Difference between the right Lines *KD* and *Ka*, that is *EA = Da*: But the right Line *Da* expresses the Velocity of the Body *A* after the Shock or Impulse, and consequently its Velocity will also be expressed by the right Line *EA*. Besides, since the relative Velocity of these Bodies remains the same both before and after the Shock, and that the right Line *EA* denotes the Velocity of the Body *A*, the Velocity of the Body *B* must necessarily, after the Impulse, be denoted by the Line *EB*, and the Direction of the Motion will be from *E* to *B*.

1. Hence, if the Body *B* be at rest, the Points *D* and *B* will be co-incident; and because *B : A :: AB : CB*, therefore by Composition $B \div A : AA :: AB : CB$; and



and doubting the consequent Terms of the Proposition, $B + A : 2 A :: AB : 2 CB$, that is in words, *As the Aggregate or Sum of the Bodies is to the double of the moving or striking Bodies :: So will the Velocity of the striking Body be before the Shock : to the Velocity of the quiescent Body after it.*

2. Wherefore if the Bodies *A* and *B* are equal, the Sum or Aggregate of them must be $2 A$: whence the Velocity of the Body *B*, after the Shock, shall be equal to AB , the Velocity of the Body *A* before it; and consequently the Points *E* and *A* being co-incident, AE , the Velocity of the moving Body after the

Shock, will be $= 0$; that is, none at all. Which also may be easily shewn thus; because the Bodies *A* and *B* are equal, $AC = CB = CD = CE$; wherefore the Point *E* will co-incide with *A*, and consequently the Body *A*, after the Shock, will be at rest, and the Body *B* will move with the same Velocity EB , or AB . If therefore a perfectly Elastick Body strike directly against another equal to it, and which is at rest: after the Shock the moving Body will lose all its Motion, and the Quiescent move on with the Velocity of the former.

3. If the Bodies *A* and *B* are equal, and both move the same way, as in Line

Line the 4th, they will move also both the same way after the Shock, and with the mutual Exchange of their Velocities. For since $CE = CD$, and $AC = CB$; $CE = AC$, that is EA must be equal to $CD - CB$, or to BD ; and consequently the Velocity of the Body after the Shock, will be equal to that of B before it. Besides, since $EA = BD$, EB will be $= AD$; and therefore the Velocity of the Body B after the Shock, must be equal to that of A before it.

4. If the equal Bodies B and A move with contrary Directions, as in Line the 10th of the Figure, they will also, after the Concourse, move contrary ways, and with their Velocities counterchanged. For since $AC = CB$; and $CE = CD$, $AC = CE$; that is, AE must be equal to $CB - CD$, or to BD ; and therefore the Velocity of the

Body A , after the Shock, will be equal to that of B before it. Besides, since $EA = BD$, AD will be $= EB$: but AD expresses the Velocity of the Body A before the Shock, and EB the Velocity of B after it.

Now this may be imaginable reducible to Practice in the following manner: Suppose the Bodies A and B both move the same way, and that the Velocity of the precedent Body B be c , and that of the subsequent A be C ; wherefore the relative Velocity of these two Bodies will be $C - c$, and the Sum of their Motions the same way $AC + Bc$; Let x denote the Velocity of the subsequent Body A after the Concourse and Shock; then because the relative Velocities of Bodies before and after the Shock continue the same, the Velocity of the Body B will be expressed by $x + C - c$.



For the relative Velocity of Bodies is equal to that by which the Velocity of the Swifter exceeds that of the Slower; and therefore that Excess must be expressed by $C - c$. Wherefore, since the Velocity of the subsequent Body $A = x$, its Motion towards D must be Ax . And since the Velocity of the preceeding Body $B = x + C - c$, its Motion also towards D must be expressed thus, $Bx + BC - Bc$; and the Sum of these two Motions will be equal to the Sum of the former Motions: That is, in Species, $Ax + Bx + BC - Bc = AC + Bc$; and by Transposition, $Ax + Bx = 2Bc - BC + AC$; and then by Division, $x = \frac{2Bc - BC + AC}{A + B}$ = to the Velocity of the Body A . And so also

$$\begin{aligned} \text{the Velocity of the Body } B &= x + C - c = \frac{AC - BC + 2Bc}{A + B} \\ + C - c &= \frac{AC - BC + 2Bc + AC + BC - Ac - Bc}{A + B} \\ &= \frac{2AC - Ac + Bc}{A + B} \end{aligned}$$

If BC be greater than $AC + 2Bc$ then x or $\frac{AC - BC + 2BC}{A+B}$ will be a negative Quantity; and consequently the Velocity of the Body A will have a contrary Direction, and its Motion towards D will be Negative.

If the Body B be at rest, that is, if $c = 0$, then the Velocity of the Body A after the Shock will be $+\frac{AC - BC}{A+B}$, forwards or backwards according as the Sign $+$ or $-$ prevails. If the Bodies A and B , with the Velocities C c move contrary ways, and consequently meet one another directly; their Motion the same way will be expressed by $AC - Bc$, and the relative Velocity of the Bodies will be $C + c$. Let then x stand for the required Velocity of the Body A after the Shock; its Motion that way it went before the Shock, will be expressed by Ax , and the Velocity of the Body B will be $x + C + c$ (for the relative Velocity of Bodies is not alter'd by the Shock) and then the Motion in the Body B towards D , will be $Bx + BC + Bc$; wherefore the Sum of the Motions the same way will be $Ax + Bx + BC + Bc$, which will be $= AC - Bc$; so that $Ax + Bx = AC - BC - 2Bc$, and $x = \frac{AC - BC - 2Bc}{A+B}$, and the Velocity of the Body B will be $\frac{AC - BC - 2Bc}{A+B} C + c = \frac{AC - BC - 2BC + AC + Ac + BC + B}{A+B} = \frac{2AC + Ac - Bc}{A+B}$. If $BC + 2Bc$ be greater than AC , the Motion of the Body A will be backwards or a contrary way; in which Case x or $\frac{AC - BC - 2Bc}{A+B}$,

The Elasticity of Fluids is accounted for from their Particles being all endowed with a centrifugal Force; whence Sir *Isaac Newton*, *Prop. 23. Book 2.* demonstrates, that Particles which mutually avoid, or fly off from one another by such Forces as are reciprocally proportional to the Distances of their Center, will compose an Elastick Fluid, whose Density shall be proportional to its Compression; and, *vice versa*, if any Fluid be composed of Particles that fly or avoid one another, and hath its Density proportional to its Compression, then the centrifugal Forces of those Particles will be reciprocally as the Distances of their Centers.

A good acquaintance with these Rules will lead a Person into juster Apprehensions of the intestine Motions of the animal Fluids, and the Consequences of the Occursions of their Parts, either as to the Alteration of their Textures, or their affecting the Secretions, that can be had without them, altho' such a Person may not be able to bring any thing to the Severity of a Calculation. Hence is discerned how satiating the Juices with heavy Particles gives them a greater Force against the Sides of the Vessels, and secretory Passages; and why Particles which are Elastick are more disposed to promote the intestine Motion of the Blood than any other,
by

by their repeated Occursions and Refilitions. And hence also are many Phenomena to be better accounted for in both the Pharmacies; as will further appear by the Explanations under their respective Names, particularly *Fermentation*.

Elaboration, strictly signifies the working any thing with the Hands; but is generally applied in the same Manner as Digestion, or Concoction of the animal Fluids. And from its Derivation *ἐλαύνω*, *agito*, or *commoveo*, it hath by many, and so long ago as *Hippocrates*, and *Galen*, been applied to any thing which purges violently; which is confirm'd also by *Foesius* and *Pechlini*.

Electrick, is a Property in some Bodies, whereby when rubb'd so as to grow warm, they draw little Bits of Paper, or such like Substances, to them, if placed in the Sphere of their Activity: and Amber having this Property in a more remarkable Degree, is frequently called

Electrum, the same as *Amber*, which see.

Electuary, is a Form of Medicine made of Conserves, Powders, Species, &c. into the Consistence of Honey, or the Pap of a roasted Apple, to be divided into Doses, when taken, like a Bole. The Form is attended with considerable Inconveniences; for Electuaries generally made up with Honey, or Syrup, when the Consistence is too thin, they are apt to ferment; and when too thick, to candy. By both which, tho' it is exceeding difficult to avoid the one or the other of them, the Ingredients will either be entirely altered in their Nature, or impaired in their Virtues. 'Tis therefore pity that this Form should be so much in use, whilst others infinitely superior

to it in all respects, lie neglected or unthought of.

Elements, signifies the same as *Principles*; see *Principia*.

Elephantiasis, is a Term which has been used by the Ancients to express different Distempers; but what the *Arabian* and *Greek* Physicians understood under this Term, is of little Advantage to us; for what we mean by it is commonly signified by the Name of *Lepra*, or *Leprosy*, which see.

Elevator, signifies a Raifer; or Lifter up; and therefore is applied to some Chirurgical Instruments put to such uses; and described by *Parey*, and *Scultetus*. Whence also

Elevator Labii Inferioris, is a Muscle that arises from the second Bone of the under Jaw below the *Incisvus*. It descends and passes under the *Zygomaticus*, and is inserted into the under Lip. This, assisted by a small but strong Pair of Muscles, arising from the Gums of the *Dentes incisivi*, and descending directly, is inserted into the lower Part of the Skin of the Chin, pulls the Skin of the Chin upwards, and consequently thrusts up the Lip. And,

Elevator Labii Superioris, is a Muscle that arises from the upper Part of the second Bone of the upper Jaw, and descending obliquely, is inserted into the upper Lip above the *Dentes Incisorii*. It draws up the Lip.

Elevator Oculorum, the same as *Superbus Musculus*. See *Eye*.

Elixation, is the drawing the Virtues out of Ingredients by stewing. And,

Elixir, is a Medicine made by strong Infusion, where the Ingredients are almost dissolved in the *Menstruum*, and give it a thicker Con-

Consistence than a Tincture. The Original and Etymology of this Term may be at large met with in *Rolfinkius's Chymistry, Lib. 4. Sect. 2. Cap. 1.*

Ellipsis, is an oval Figure, produced from the Section of a Cone, by a Plane cutting both Sides of the Cone, (but not parallel to the Base, for then it produces a Circle) near to which Figure is that of an Egg cut end-wise, and which may be described upon a Plane by a Line made with a loose Cord carried round upon two Centers, or Pins.

Elongation, signifying lengthening out, is an imperfect Luxation, when the Ligament of any Joint is so extended or relaxed as to lengthen the Limb, but yet not let the Bone go quite out of its Place.

Elythroides. See *Generation*, Parts of, proper to Women.

Emanation, is a flowing out, as *Effluvia* or Steams arise from any Body. See *Quality*.

Embrocation, from *ἐμβρέχω*, *intingo*, to soak in; is the rubbing into a Part distemper'd any medicinal Liquors or Spirits.

Embryo, from *ἐμβρύω*, *pullulo*, to sprout out; is the Rudiments of a Child in the Womb before perfect Formation; thus called from its first Growth resembling that of the first Shoots of a Plant, and having no other than a vegetative Life.

Embryotblastēs, from *ἐμβρύον*, *Fœtus*, and *θλάω*, *contundo*, to break: And,

Embryulcus, from the same, and *ἐλκω*, *traho*, to draw; are Instruments to crush the Bones of an *Embryo*, or a dead Child, so as to make it easier of Extraction, and to lay hold and draw it out of the Womb. And,

Embryotomy, from the same, and *τέμνω*, *seco*, to cut, is the Anatomical Dissection of *Embryos*.

Emerge, from *emergo*, to raise up or swim, is floating in any Fluid; and what does so, is often called the *Emergent Body*.

Emetick, from *ἐμέω*, *vomo*, to vomit; is any thing that works by Vomiting, which is after this Manner: The Particles of the Emetick Medicine by wedging themselves into the Orifices of the Emissaries of the Glands, which are placed adjacent to the Surface of the Stomach, do dilate the same (which by some extrinsical Cause had been contracted) and after the same Manner do dissolve (at least in some degree) the Cohesion of the stagnant morbid Matter, rendring it more fluid, and consequently making its Resistance less. Now the natural and constant Actions of the Glands being Secretion; and the Impediment (by the Dilatation of the Orifice, and the Attenuation of the Fluid) being taken away, or at least made less than the natural *Momentum* of the Glands; the Matter must naturally flow into the Cavity of the Stomach, till it be heaped up in such a Quantity, (which not being to be done in an Instant, must require some time) as is sufficient by its *Stimulus* to vellicate and force the Fibres of the Stomach, Abdomen, and Diaphragm, by the Communication of the first with the two last into a violent Contraction, and thereby throw all out by the *Oesophagus*: and this makes all quiet for a while, till a new and sufficient Quantity be excerned from these Glands to produce the aforesaid Contraction. And thus there happens a Fit of Vomiting and Quiet alternately, till either all the morbid

bilick Matter from the Glands. And the strong Contraction in so many Muscles, and muscular Canals as are at work in the Action of Vomiting, and the violent Concussion which is produced over the whole Body, by a Power, which by just Computation, is not inferior to that of 26000 lb. Weight, may, and often does take away the Obstructions in many other Canals, besides those which are adjacent to the Stomach and Gullet; as we may plainly see by those vast Sweats which plentiful Fits of Vomiting occasion. Emetick and purgative Medicines differ only in this, that the Particles of the latter do not immediately *vellicate* the Fibres of the Stomach, *dilate* the Orifices, and *attenuate* the Matter contained in the Glands of the Stomach; but act gently, and assist the natural Motion of Digestion, and so are carry'd down into the Guts: and to know how they operate there, see *Purgatives*.

Emmenagogues, from ἐν, in, μῶν, *Mensis*, a Month, and ἄγω, *duco*, to lead; are Medicines that promote the *Menses*, because their natural Periods of flowing are once a Month; and these do this, either by giving a greater Force to the Blood in its Circulation, whereby its *Momentum* against the Vessels is increased, or by making it thinner, whereby it will more easily pass thro' any Outlets. The former Intention is helped by Chalybeates, which give a greater Weight and *Momentum* to a languid heavy Blood, and all other Substances of the like Gravity and Elasticity. And this is the Case of a *Leucophlegmatic* Habit, or, as it is commonly called the Green-Sickness, and its Cure; but in the latter Case, where the Blood is florid and too high, attenuating Alte-

ratives and Detergents are the only Remedies, because they are fittest to render the Blood more thin, and give it such a Property as will better carry it thro' those little Apertures destined for its Discharge into the *Uterus*. For the whole that concerns this Subject, consult Dr. *Friend's Emmenologia*.

Emollients, signifying Softners, are such things as sheath and soften the Asperities of the Humours, and relax and supple the Solids at the same time. For it is very easy to conceive the Manner how these are both brought about by the same Medicine. By what Means soever, whether in the Stomach, or any other Parts, the Juices have obtained any Sharpness or Asperity, so as to vellicate and render very uneasy the Fibres and nervous Parts, which often happens; those things which are smooth, soft, and yielding, cannot but wrap up their Points, and render them imperceptible whereby they may gradually, by the proper Course of Circulation, be brought to some convenient Emunctory, without doing any Injury by the way. Such Parts likewise draw the Fibres into Spasms, keep them too tense, and frequently thereby occasion Obstructions of the worst kind. In all such Cases therefore Emollients lubricate and moisten the Fibres, so as to relax them into their proper Dimensions, whereupon such Disorders cease.

Empiric, from ἐμπειρία, *tento*, to try; is strictly a Tryer or Experimenter, and vulgarly signifies those Persons who have no true Education in, or Knowledge of the Grounds of Physical Practice, but venture upon Hear-say and Observation only. Medicine was almost altogether in the Hands of such, before *Hippocrates*; and many pretended

tended only to one Disease, which they had accustomed themselves to; but the Prince of Physick added Reason thereunto, and taught the Advantages of Theory. Notwithstanding which, latter Ages are again much degenerated into *Empiricism*; and to one regular knowing Physician, such is the Defect of our Laws at present in this Respect, there are fifty that practise who are mere *Empiricks*.

Empyrototonos, is a Convulsion of the Neck, bowing the Body forwards; from *ἐμπροσθεν*, *anterius*, forwards, and *τείνω*, *tendo*, to stretch.

Emplastic, and *Emplaster*, is a Form of Medicine too well known to want Description: The same as Plaister; which Term is now most commonly used.

Empyema, from *ἐν*, *intus*, within, and *πύον*, *Pus*, Matter; is a Collection of purulent Matter in any Part whatsoever, strictly taken; but it is generally used to signify that in the Cavity of the Breast only; and which sometimes happens upon the opening of Abscesses, or Ulcerations of the Lungs, or Membranes inclosing the Breast. Its Cure is difficult from the Difficulty of absorbing by any Vessels such extravasated Matter; and therefore often calls for the Help of a Surgeon to discharge it by Aperture externally.

Empyreuma, from *ἐμπυρεύω*, *accendo*, to burn; is the burning to of any Matter that is in boiling or Distillation, and which gives a particular offensive Smell that is expressed by this Name.

Emrods. See *Hæmorrhoides*.

Emulgent Vessels, are Arteries and Veins. See *Kidneys*.

Emulsion, signifying milking out, is a Form of Medicine made by bruising oily Seeds and Kernels,

and drawing out their Substance with some Liquor that becomes thereby milky. And these are generally of the emollient kind.

Emunctories, are those Parts of the Body where any thing excrementitious is separated and collected to be in Readiness for Ejection.

Enarthrosis: The same as *Arthrosis*; which see.

Endemick, from *ἐν*, *in*, and *δῆμος*, *Populus*, People; is any Disease that affects many People together in the same Country, proceeding from some Cause peculiar to the Country where it reigns: such as the Scurvy to the Northern Climes, Intermitting Fevers to marshy Places, &c.

Enaorema, from *ἐναερέω*, *in sublime attallo*, to lift up, or float, called also *Nubecula*, little Clouds; are those Contents of the Urine as float about in the Middle, resembling a Cloud.

Enema, from *ἐνίημι*, *immitto*, to send in; is used to express a Clyster.

Energumeni, *ἐνεργούμενοι*, expresses in some Authors a Possession by evil Spirits: and

Engastrimythos, is one who emits sounds like the Voice of one speaking out of the Stomach or Belly, without using the Organs of Speech; such as is reported of the *Pythian* Prophetess, and the like.

Energy, from *ἐνεργέω*, *operor*, to work, is used to express an uncommon Force in any Action that is done with Briskness and Vigour.

Enervation, is a Debility and Listlessness to Action.

Ens, properly signifies any Being or Existence; but by the Chymists it is introduced into Medicine to express some Things that are pretended to contain all the Qualities or Virtues of the Ingredients they

are drawn from in a little Room.

Enixum, from an Original signifying to bring forth, is by the Chymists applied to a kind of Salt, partaking both of an acid and alkaline Nature, as the *Tartar of Vitriol*, which some also call *Sal Neutrum*, *Sal Tertium*, and *Sal Salsum*.

Eniformis Cartilago. See *Cartilago Eniformis*.

Enterology from *έντερον*, *Intestinum*, a Gut, and *λόγος*, *Sermo*, a Discourse; is a Treatise of the Bowels: and is generally understood to include the Contents of the three Cavities, Head, Breast, and Belly.

Enterocoele, from *έντερον*, *Intestinum*, a Gut, and *κήλη*, *Tumor*, a Swelling; is a Rupture from the Bowels pressing thro' or dilating the *Peritonæum*, so as to fall down into the Groin. The Remedy in such Cases is chiefly by outward Application, as Trusses and Bolsters.

Epaemastica Febris: A Fever is thus termed by *Bellini*, and others long before him, while it is in its Encrease.

Ephemera, from *ἐπὶ*, *supra*, upon, and *ἡμέρα*, *Dies*, a Day; is a Fever that terminates in the Compass of one Day.

Epicarpium, from *ἐπὶ*, *supra*, upon, and *καρπός*, *Carpus*, the Wrist; are Medicines applied to the Wrists of any kind, but for Conveniency they are generally in the Forms of Cataplasms or Plaisters.

Epicerastick, from *ἐπὶ*, *supra*, above, and *κεράννυμι*, *tempero*, to correct, is a Medicine that assuages and corrects sharp Humours.

Epicolick Regions, from *ἐπὶ*, *supra*, upon, and *Colon*, the Gut so called, is that Space on both Sides, where the *Colon* runs under: and thus first called from *Dr. Glisson*.

Epicicloid, is the Line described by one Circle rolling upon the Periphery of another.

Epidemius, the same as *Endemius*; but this is often used in a somewhat more extensive Signification, to express an Infection, as that of the Plague, which reaches several Countries at the same Time.

Epidermis. See *Cuticula*.

Epididymis, from *ἐπὶ*, *supra*, upon, and *διδυμος*, *Testiculus*. See *Generation Parts* of, proper to Men.

Epigastrium, from *ἐπὶ*, *supra*, upon, and *γαστήρ*, *Venter*, the Belly, is the upper Part of the *Abdomen*, reaching from the *Cartilago Eniformis* till within two Fingers Breadth of the Navel. Its two Sides are the *Hypochondria*; the Right of which covers the greatest Part of the Liver; the left the Spleen, Part of the Stomach and *Colon*.

Epiglottis, from *ἐπὶ*, *supra*, above, and *γλῶσσα*, *Lingua*, the Tongue; thus called from its Position above the Root of the Tongue. It is one of the five Cartilages of the *Larynx*; which see.

Epilepsy, from *ἐπιλαμβάνω*, *invado*, to seize; because it suddenly comes upon a Person. It is also called *Morbus Caducus*, from Peoples suddenly falling down upon their Seizure with it: and many other Appellations it has by physical Authors, arising from some particular Circumstance, not worth our Notice, it being sufficient to know that It is a *Convulsion*, or *convulsive Motion* of the whole Body, or of some of its Parts, with a Loss of Sense. A Convulsive Motion happens when the Blood or nervous Fluid runs into any Parts with so great a Violence, that the Mind cannot restrain them from Contraction. The Causes of a Convulsion are

are all things that produce too much *Repletion*, or *Inanition*; so that if a greater Quantity of Blood or nervous Fluid enters into a Muscle than into its opposite, and that involuntarily, the Force impressed thereby will be greater; and so there will be a greater Inflation and Contraction, and that too without the Direction of the Will, which is a Convulsion: but if into such a Muscle a lesser Quantity is derived than into its Antagonist, there will be a Contraction of its opposite, and on that Side a Convulsion. But some late Writers have found Fault with this Opinion, only because they did not understand it: and they have substituted in its room an Irritation, or Vellication; but that also may be referred to Repletion, because by all those means which produce Pain, the Quantity of any derivable Fluid will be drawn into the Part affected, greater than what is natural, and thereby cause a Repletion of the vellicated Part. Hence it will be easy to understand that an Epilepsy differs from a Convulsion only in this, that in an Epilepsy, Sensation suddenly ceases, with an immediate Prostration of the Body; and the *Rationale* of all those Symptoms wherein an Epilepsy differs from a Convulsion, is the same as that of the Symptoms of an Apoplexy, or rather a *Vertigo*; both which see. The Cure in this Case requires a diligent Attention to which of these Extremes the Distemper proceeds from, and to use Evacuation or Restoratives as is thereby indicated.

Epileptick Medicines, are such as are used against the Epilepsy.

Epinyctis, is an angry Tumour affecting the Skin in the Arms, Hands and Thighs; the Ancients

rank with it the *Terminthus*, which is somewhat less. It is of the Bigness of a *Lupin*, of a dusky red, and sometimes of a livid and pale Colour, with great Inflammation and Pain. In a few Days it breaks and gleans, and separates away in a Slough.

Epiphora, from ἐπιφέρω, *infero*, to carry into; signifies an Inflammation of any Part, but is more especially used to signify a Defluxion of Humours upon the Eyes. The Causes and Cure the same as in a *Catarrh*; which see.

Epiphyfis, from ἐπιφύω, *acresco*, to grow to; is when one Bone grows to another by simple Contiguity, without any proper Articulation.

Epiplocele, from ἐπίπλοον, *Omentum*, the Caul, and κήλη, *Tumor*, a Swelling; is a Rupture of the Caul, which falls down into the Cod.

Epiplois Dextra, is a Branch of the Celiac Artery, which runs thro' the right Side of the inner or hinder Leaf of the Caul.

Epiplois Postica, is a Branch of the Celiac Artery, springing out of the lower End of the *Splenica*, and running to the hinder Leaf of the Caul.

Epiplois Sinistra, is a Branch of the Celiac Artery, that is bestow'd on the lower and left Side of the Caul.

Epiploon. The same with *Omentum*.

Epispastick, from ἐπισπᾶω, *at-traho*, to draw, signifies strictly any Drawer, but is generally used to signify Blistering-Plaisters.

Epistrophæus, from ἐπιστρέπω, *con-vertō*, to turn about; is applied to the first *Vetebra* of the Neck, because it turns about upon the second

as upon an Axis: and which therefore was so called by the Ancients. See *Cardo*.

Epithem, from ἐπιτίθημι, *impono*, to put upon; is any outward Application, but generally signifies those of a liquid Form, like a Fomentation.

Epulotick, from ἐπελῶ, *Cicatricem infero*. See *Cicatrix*.

Equable Motion, is such as continues with the same Degree of Velocity: and if there be an Acceleration or Retardation of two or more Bodies, that is uniformly and exactly the same in both, then they are said to be equably accelerated or retarded.

Equivocal Generation, is the Production of Plants without Seed, or of Insects or Animals without Parents, in the natural way of Coition between Male and Female: which is now believed never to happen, but that all Bodies are univocally produced.

Eradicative, is by *Fallopian de Purgat. Simpl.* used for such things as work powerfully; the Word importing to root out, in Opposition to *Minoratives*, which operate but gently.

Erectores Clitoridis, are two Muscles arising from the Protuberances of the *Ischium*, and are inserted into the spongy Bodies of the *Clitoris*, which they erect in Coition.

Erectores Penis, are two Muscles arising fleshy from the Protuberances of the *Ischium*, below the Beginning of the cavernous Bodies of the *Yard*, into whose thick Membranes they are inserted. Their Use is to pull the *Yard* towards the *Os Pubis*, whereby its greatest Vein is compress'd, and the reflux Blood denied its Passage under those Bones, which makes it swell.

Erode, and *Erosion*; the same as *Corrosion*; which see.

Erratick, is used by Physicians in various Senses, but chiefly for wandering Pains, and sometimes for Fevers of uncertain Periods.

Errhine, from ἐν, *in*, and ῥίς, *Nasus*, the Nose; are Medicines to snuff up the Nose, to occasion sneezing, enliven the Spirits, or purge the Head.

Eruetation, Belching. The same as *Ruetation*.

Eruption, is any breaking out, from *erumpo*, to break out.

Erysipelas, ἐρυσίπελας, is a cutaneous Inflammation, sometimes with a superficial Tumour, called also *Ignis Sacer*, and *St. Anthony's Fire*. The Ancients distinguish'd this into various kinds, which are not of sufficient Moment to be taken Notice of here.

Erythroides, from ἐρυθρόν, *rubrum*, red, and εἶδος, *Forma*, Appearance; is a red Membrane, called also *Tunica Vaginalis*, embracing loosely the whole Body of the Testicles, and adhering to one End of the *Epididymis*. See *Generation* Parts of, belonging to Men.

Eschar, is a hard Crust or Scab, made by

Escharoticks. See *Cauticks*.

Essay-Instrument, a little hollow Instrument made of Box, Ivory, or the like, which by being plunged into Liquors, will, by the Marks put upon it, discover their specific Gravities, according to which it sinks more or less therein.

Essence, is strictly that which constitutes the Nature of any thing, and makes it be what it is; but in Medicine it is used to signify the chief Properties or Virtues of any Simple, or Composition, collected together.

Essential Oils, are such as were really in a Plant, and drawn from it by Distillation, in distinction from those made by Insolation.

Essential Properties, are such as necessarily depend upon the Nature and Essence of any thing, and are inseparable from it, in Distinction from accidental.

Essential Salts, are such as will crystallize in the Juice, or an Infusion of Plants, in Distinction from those made by Incineration, and appear to be actually contained in the Plant.

Esfurine Salts, are such as are of a corroding Nature, and abound in Places near the Sea-side, and where a great Quantity of Coal is burnt; as appears from the speedy rusting of Iron in such Places. This Term is also applied to many things of a corrosive Quality; as by *Paracelsus* to things which excite Hunger by vellicating the Stomach, and by *Dr. Charlton* to that Juice which naturally separates into the Stomach, and is supposed a chief Instrument in Digestion.

Ethereal Oil. The Chymists thus call a high rectified Oil, that differs little from an inflammable Spirit, as the Oil of Turpentine, and the like.

Ethmoides, from ἠθμός, *Cribrum*, a Sieve, and εἶδος, *Forma*, Shape, the Sieve-like Bone. It is situated in the middle of the Basis of the *Os Frontis*. It is perforated by a Number of small Holes, thro' which the Fibres of the Olfactory Nerves pass; for which it has this Name. It is joined to the *Os Frontis* and *Sphenoides*, by the *Sutura Ethmoidalis*. In its middle it has a small Process called *Crista Galli*, to which the Fore-end of the *Falx* is tied. From its under Side there goes a thin Bone, which di-

vides the Cavity of the Nostrils in two; the lower End of which is grooved with the *Vomer*. On each Side of this Partition it has several small spongy *Laminae*, called *Ossa Spongiosa*, which are full of little Cells, at their Juncture with the *Ethmoides*. The two external *Laminae*, or the *Ossa Spongiosa*, make Part of the Orbit at the great *Canthus*; and they are called *Plana*, because they are smooth and even.

Evacuation, signifies any Diminution of the animal Fluids, whether it be by Catharticks, or Blood-letting, or any other Means.

Evaporation, is that Operation in Pharmacy, by which Liquids are spent or drove away in Steam, so as to leave some Part stronger, or of a higher Consistence than before.

Euchrasy, from εὖ, *bene*, good, and κράσις, *Temperamentum*, a Constitution; is an agreeable well-proportioned Mixture of Qualities, whereby a Body is said to be in good Order, that is a good State of Health.

Euodia, or εὐωδία, in Opposition to *Dysodes*, is used by *Hippocrates* in his *Epidemics*, to express an healthful or agreeable Disposition; as also a ready Method for obtaining any End: and by *Scribonius Largus* it is applied to a particular *Collyrium*. But we have not heard of this Term latterly, unless prefixed to a Book, the Contents of which are as whimsical and unintelligible as the Title.

Euphoria, is used by some to express that Ease with which some bear the Course of a Distemper, or the Operation of a Medicine; as also the Aptitude of some Things to particular Operations.

Eurythmus, εὐρυθμία, is an healthful or regular Tenour of the Pulse.

Eufarcos, εὐσάρκος, is used by *Galen*, and others since, for such a Proportion of Flesh as is not too lean or too corpulent, but gives due Symmetry and Strength to all the Parts. As,

Eusplanchnos, is applied by *Hippocrates* to those who are supposed to have sound *Viscera*. Thus the Adverb εὖ is put to several things to express the Goodness of their Condition: as *Eutaxia*, for an healthful State; *Euthanasia* for an easy or happy Death, &c.

Exacerbation, the same as *Paroxysm*; which see.

Exaltation, is the raising a Medicine to a higher degree of Virtue; or an Increase of the most remarkable Property of any Body.

Exanguis, ἔξαιμος, without Blood. So *Galen* and the Ancients called the Nerves, Cartilages, Bones, and other Parts which appeared white.

Exanimation, is used by *Scribonius Largus* for real Death; but is generally applied to Swoonings, or such sinking of the Spirits, as is attended with Loss of Sense for some time.

Exanthema, from ἔξανθεω, effervesco, to flower out; is such an Eruption of the Skin as the Measles, and is generally attended with a Fever, and terminates in a Rash.

Exarticulation, the same as *Luxation*; a Bone disjoined.

Excandescencia, is used by some physical Writers to express an Aptness to such Passions of the Mind, as bring on real Distempers.

Excoriation, is a tearing off the Skin.

Excortication, is pulling the Bark off any thing.

Excrescence, is a preter-natural Growth of any thing beyond its proper Dimensions, as Wens, Warts, and the like.

Excretion, is that Separation of an animal Substance, as ejects somewhat quite out of the Body, as of no further Use; which is called

Excrement.

Exhalation, the same as *Evaporation*; which see.

Exanition, the same as *Evacuation*.

Exoneriosis, is by *Linden* explained for a Species of a *Gonorrhæa*, commonly called *Pollutio Nocturna*, when the *Semen* involuntarily flows in Sleep.

Exophthalmia, is an uncommon Prominence of the Eye out of its Socket, of which *Bonetus* gives a very remarkable Case, *Med. Sept. Lib. I. Cap. 64*.

Exorcism, hath been introduced into the Practice of Physick by Enthusiasts, who pretended by some religious Ceremonies, to expel an evil Spirit out of a Body, which was supposed the Cause of Diseases.

Exostosis, from *ex*, and ὀστέον, *Os*, a Bone; is any Protuberance of a Bone that is not natural, as often happens in Venereal Cases.

Exotick, is applied to those things which are the natural Produce of other Countries, and not of our own.

Expansion, spreading out, in a physical Sense is the stretching out, opening, or spreading of any Body, but generally signifies such an Alteration as is made by *Rarefaction*; which see.

Expectoration, is promoting those Discharges which are made by coughing; as bringing up Phlegm, or any thing that obstructs the Vessels of the Lungs, and strengthens the Breath.

Expiration, from *expiro*, to breathe out; is that Part of Respiration as thrusts the Air out of the Lungs,

Lungs, and contracts the Cavity of the Breast. See *Respiration*.

Explosion, is properly the going off of Gun-powder, and the Report made thereby ; but is used frequently to express such sudden Actions of Bodies as have some Resemblance thereunto: as those which ferment with Violence immediately upon their Mixture, and occasion a crackling Sound. Some Writers have likewise applied it to the Excursions of animal Spirits, and instantaneous Motions of the Fibres, on the Minds Direction ; but the Term then becomes too figurative to express any determinate Signification, so as really to inform the Understanding.

Expressed Oils, are such as are procured from any Bodies only by pressing, as the Oils of Olives, Almonds, and the like. And the doing this is called

Expression.

Expulsion, the same as *Excretion* ; and the Power of expelling any thing, is by some Writers called *Facultas expultrix*.

Exspuition, signifies a Discharge of *saliva* by spitting. See *Salivation*, and *Masticatories*.

Exsudation, sweating out ; as Gums or Balsams out of Trees.

Extention, stretching out ; the same as *Expansion*.

Extensores : Many Muscles are so called, which serve to extend any Part ; as,

Extensor Carpi, which is also called *Bicornis*, is two distinct Muscles. The first arises from above the external Protuberance of the *Humerus*, and the second from the lowermost Part of the external Protuberance. They both lie along the external Part of the *Radius* ; and passing under the annular Ligament, one is inserted into the Bone of the *Meta-*

carpus that sustains the Fore-finger, and the other to that which sustains the Middle-Finger. These two extend the Wrist.

Extensor Digitorum Communis, arises from the external Protuberance of the *Humerus* ; and at the Wrist it divides into three flat Tendons, which pass under the annular Ligament, to be inserted into all the Bones of the Fore, Middle, and Ring-Finger.

Extensor Primi Internodii Pollicis, arises from the upper and external Part of the *Ulna*, and passes obliquely over the Tendon of the *Radius externus*, and is inserted near the second Joint of the Thumb.

Extensor Secundi internodii Pollicis, arises from the upper and internal Part of the *Radius*, and is inserted into the upper Part of the second Bone of the Thumb.

Extensor Tertii Internodii Pollicis, arises from the *Ulna*, a little below the first *Extensor*, and is inserted into the third Bone of the Thumb.

Extensor Indicis, comes from the middle and external Part of the *Ulna*, and passing under the annular Ligament, is inserted into the third Bone of the Fore finger, where it joins the *extensor Communis*.

Extensor Minimi Digiti, arises from the external Protuberance of the *Humerus*, and from the upper part of the *Ulna*, and passing under the annular Ligament, is inserted into the third Bone of the Little-Finger.

Extensor Pollicis, arises from near the upper half of the *Perone* forwards, and passing under the annular Ligament, is inserted into the last Bone of the great Toe.

Extenuation, signifies a Loss of *plumpness*, or a general Decay in the muscular flesh of the whole Body.

Externus Auris, and *Malleolus*.
See *Ear*.

Extinction, is the putting out any thing that was burning.

Extirpation, is the cutting off any Part, or the eating it away; as Warts, and such like Substances, by corrosive Medicines.

Extraction, in the largest Sense, signifies any Solution made by *Menstruums*, unless there be allow'd this difference between them; that in Solution the *Menstruums* absorb the whole Substance of the Body, but in this they carry off only certain Particles of it. And in this Sense Camphire is dissolved in Spirit of Wine, but Jallap is more properly said to be extracted; for the Resin only is taken out by the *Mensstruum*, the other Particles being left untouched. But Extraction most commonly signifies such an Inspissation, or thickning of a Solution, as, when there is drawn off a certain Quantity of the *Mensstruum*, reduces the remaining Mixture to the Consistence of Honey; as in the Extracts of Saffron, Gentian, and the like. Extracts are chiefly made out of Vegetables, and require different *Menstruums* according to the different Nature of the Plants, especially in Gums; for such as are mucilaginous, as Gum Arabick, and Tragacanth, &c. are not easily to be dissolved but in aqueous Liquors; whereas on the other hand, resinous Gums, as Galbanum, Scammony, &c. must have burning Spirits to dissolve them. There are others again of a middle Nature, which may be dissolved in either Sort of *Menstruums*, tho' not so easily in one as in the other. Thus Aloes and Rhubarb, which are something resinous, are better made into Extracts with Spirit of Wine than Water. But Plants,

which abound less with Resin, such as Hellebore, &c. are more commodiously extracted with Water. To perform therefore Extraction aright, a proper *Mensstruum* is necessary, and one which is as near a-kin as possible to the Body to be extracted. Thus Extraction is usually performed; but its Use does not seem to be of so great Service in Physick, as is generally imagined; For almost all the more subtile Parts fly away, either when the *Mensstruum* is drawn off by Distillation, or when it evaporates in the open Air. So that if those Particles are any ways useful in Medicine, 'tis to no purpose to seek for them in Extracts; but if we would have only a Collection of the more gross and unactive Parts, there is no other kind of Operation which will so happily supply us with them. It is also of Service to clear some Gums and Resins from Dross: for as the taking up the genuine Substance by a proper *Mensstruum*, leaves all that is not so behind; so by evaporating the *Mensstruum* again, the Resin, or whatsoever of that Nature it is, will be recovered in its utmost Purity.

Extraneous, any thing foreign. It is also used to express the same as external, and frequently signifies the same as Excrescence, something that is not natural to the Substance it grows out of, or properly belongs to a Part to which it adheres.

Extravasated, is any thing that is got out of its proper Vessel; from *extra*, out of, and *Vas*, a Vessel.

Exulceration, the same as Ulcer; but generally used to express those beginning Erosions, which wear away the Substance, and form an Ulcer.

Exungulate,

Exungulate, is cutting off the white Part from the Leaves of Roses, or the like.

Exustion, is a burning with Fire, as it is used in some Operations by Surgeons.

Eye. The Orbit in which the Eye is placed, is composed from some of the Bones of the Skull and upper Jaw together. The upper Part of it is made of the *Os Frontis*: the *Os Unguis*, and *Os Planum* make the inner and lower Part of the great Angle; and the *Os Sphenoides*, the inner and lower of the little Angle. The *Os Maxillare* makes the inner and lower Part of the Circumference, and the *Os Mali* the outer and lower Part. The Organs of Sight are divided into two Parts; the internal Part, which is the Globe or Body of the Eye; and the external Part, which is those Parts about the Globe subservient to it. The first of the last are the Eye-brows, which are nothing but some Hairs bunching out about the Eye, by some Fat which is under the Skin in this Place. They break the Rays of Light, that they may not be directly darted into the Eyes, which would greatly offend the Sight, as they do when we look directly against the Sun. The next are the Eye Lids, two to each Eye: The upper Lid moves very quickly, the under very undiscernably. The upper Eye Lid is lifted up by the *Musculus rectus*, which rises from the Bottom of the Orbit of the Eye, where the Optick Nerve pierces the *Cranium*, and passing above the *Superbus*, is inserted by a large Tendon to the Border of the Eye Lid. Both Lids are brought together to shut upon the Eye by another Muscle, called *Orbicularis*. It rises from the great Angle of the Eye, and its Fibres are spread two Fingers Breadth, covering the under Lid;

it reaches to the little *Canthus*, from which continuing its circular Fibres which cover the upper Lid, it is inserted into the same Place from which it arose. Some divide this Muscle into two, the superior and inferior, which they make to rise from the great *Canthus*, and to be inserted into the little *Canthus*. The Eye Lids are covered within by a smooth Membrane called *Conjunctiva*, because it is continued upon the fore part of the Globe, constituting that which we call the White of the Eye; it joins the Globe to the Edges of the *Orbit*. The Edges of the Eye Lids have two small and soft Cartilages, like the Segments of a Circle, called *Cilia*; they keep the Eye Lids extended, that every Part may be equally raised. Upon them there is a Rank of small Glands, whose excretory Channels open upon the Edges of the Lids. They yield a Wax, which fasteneth the Eye Lids together whilst we sleep. They are covered with the Skin externally, and with the *Conjunctiva* internally. Upon the Edges of the Lids there are also some Hairs in Form of a Pallisado, to preserve the Eyes, as the Eye Brows do, and to hinder any Filth or Flies from falling into the Eyes.

On the backside of the *Conjunctiva*, upon the upper Part of the Globe, is the *Glandula Lachrymalis*, pretty large, divided into several Lobes, each of which sends out an excretory Channel, which opens in the fore-side of this Membrane, where it covers the upper Lid. This Gland separates the Matter of the Tears, which by the continual Motion of this Lid, moisten the *Cornea*, which otherwise would dry and wrinkle by the continual Action of the external Air. The Edges of the

the Eye Lids being of an equal Convexity with the Ball of the Eye, which they touch, as the Tears fall from off the *Cornea*, they are stop't by the Edge of the under Lid, along which they run, till they fall into two small Holes in the great *Canthus* of the Eye, one in each Eye Lid. These Holes are called *Puncta Lachrymalia*. They lead to a small membranous Bag, which is situated in this Corner upon the *Os Lachrymale*; from the Bottom of which there goes a small Pipe, which pierces this Bone into the Nose, and opens under the upper *Lamina* of the *Os Spongiosum*. It moistens the inner Membrane of the Nostrils, by the Humour of the lachrymal Gland, which runs from off the Globe into them. Sometimes the Acrimony of this Humour causeth Sneezing, which we hinder, by pressing the Angle of the Eye, and so stop its running. Between these two *Puncta* there is a Caruncle which serves to keep them open when the Eyes are shut; which was thought to be the *Glandula Lachrymalis*.

The Globe of the Eye is moved by four straight Muscles, and two oblique; and betwixt them there is a great deal of Fat, which facilitates the Motion of the Globe. The first of the four straight Muscles is called *Attollens* or *Superbus*; it lies upon the upper Part of the Globe, and pulls up the Eye when we look up. The second is called *Depri-mens*, or *Humilis*, because it pulleth down the Eye. The third is called *Adductor*; it draweth the Eye towards the Nose. The fourth *Abductor*; it draweth the Eye towards the little *Canthus*. They rise all four from the Circumference of the Hole in the Orbit, thro' which the Optick Nerves pass; and they terminate about the *Cornea* by four

thin and broad Tendons. When they all act together, they draw the Eye towards the bottom of the Orbit. When the *Superbus* and the *Adductor* and *Abductor* act together, or the *Humilis* and the other two act together, they perform the oblique Motions, which have been attributed to the oblique Muscles. The first of the oblique Muscles, which is the fifth of the Eye, is the *Obliquus minor*; it rises from the lower side of the Orbit near its external Circumference, where the first and second Bones of the upper Jaw join together; and ascending oblique by the outer Corner of the Eye, 'tis inserted into the upper and external side of the Globe behind the Tendon of the *Abductor*. The second of the oblique Muscles, and the fifth of the Eye, is the *Obliquus major*: it rises from the Bottom of the Orbit, and marches obliquely towards the great *Canthus*, in the upper Part of which, near the Brink, there is a cartilaginous Ring, thro' which it passes its round Tendon; from whence reverting backwards, it is inserted into the upper Part of the Globe, behind the Tendon of the *Attollens*. The Use of the first of these Muscles is to draw the Globe of the Eye forwards, and to turn its Pupil upwards, and of the second, to draw it forwards, and to turn its Pupil downwards, for the better receiving of the Rays of Light, which could not be perform'd by any of the other four Muscles: And both of them are an Axis for suspending the Globe, by which, in its almost continual Motion, 'tis moved the more easily.

Now the Globe of the Eye is of a spherical Figure; in it are contained the principal Instruments of Vision; it is composed of Coats and Humours. The first is the *Conjunctiva*;

it

it makes the White of the Eye, as has been already described. It is full of small Veins and Arteries, which appear big in an *Ophthalmia* or Inflammation of the Eyes. The second is called *Sclerotica*; 'tis thick, hard, and smooth, opaque behind, but transparent before, where it makes the third Coat called *Cornea*, because it is transparent like the Horn of a Lanthorn, in the Fore-part of the Eye, which is surrounded by the White of the Eye; it has a greater Convexity than the rest of the Globe of the Eye, and is composed of several parallel *Lamina*, which are nourished by many Blood-Vessels, so fine as not to hinder even the smallest Rays of Light from entering the Eye: and it has a most exquisite Sense, that upon the least Pain, the Tears might be squeezed out of the lachrymal Gland, to wash off any Filth which by sticking to the *Cornea*, might render it opaque. The fourth is the *Choroides*, it lies under the *Sclerotica*, and is much thinner than it. It hath a great Number of Blood-vessels which come from the second, and which are spread upon it; as also several Glands, which separate from the Blood-vessels a black Liquor, and tinctures all this Membrane internally, which is otherwise of a whitish Colour. This Coat is open, or has a Hole before, for the Passage of the Rays of Light, called *Pupilla*. The Part of this Coat, which makes the Circumference of this Hole, and which lies upon the Side of the Crystalline Humour, is the fifth Coat called the *Uvea*, made of circular and straight Fibres; it contracts and dilates, according to the different Impressions of Light, and of Objects. The *Iris* is the Outside of the *Uvea*, where the different Colours appear. On

the Inside of the *Uvea*, from its Circumference, which joins the *Choroides*, raises the *Ligamentum Ciliare*. It is made of short Fibres which run upon the Fore-part of the glassy Humour to the Edges of the Crystalline, like Lines drawn from the Circumference to the Center. By the Contraction of these Fibres, the fore-part of the Eye is made more prominent, and the *Retina* pressed further back from the crystalline Humour, as the Axis of Vision is lengthened when Objects are placed too near the Eye. The sixth is the *Retina*, so called because it resembles a Net which covereth the Bottom of the Cavity of the Eye. It is a fine Expansion of the medullary Fibres of the Optick Nerves upon the Surface of the glassy Humour, as far as the *Ligamentum Ciliare*. It is on this Coat the Impressions of Objects are made.

The Humours of the Eye are three: The first is called the *Aqueous*; it lies in the Fore-part of the Globe, immediately under the *Cornea*; this Humour is thin and liquid, of a spirituous Nature, for it will not freeze in the greatest Frost: This evinces the Necessity of a continual Supply of this Humour; which is manifest it hath, because if the *Cornea* be pricked, and this Humour squeezed out, it will be restored again in ten or twelve Hours. The second Humour is the *Crystalline*; it lies immediately next to the *Aqueous*, behind the *Uvea*, opposite to the *Pupilla*, nearer to the Fore-part than the Back-part of the Globe; it is the least of the Humours, but much more solid than any of them: Its Figure, which is convex on both Sides, resembles two unequal Segments of Spheres, of which the most convex is on its Back-side, which makes a small Cavity in the *Glassy* Humour in which

which it lies ; it is covered with a small Coat called *Araña*. The third is the *Glassy* Humour ; it hath a great Resemblance to the White of an Egg ; it filleth all the hind Part of the Cavity of the Globe : It is in greater Abundance than the other two ; it is thicker than the *Aqueous*, but thinner than the *crystalline* Humour. It is contained in a very fine Coat of the same Name ; and it gives the spherical Figure to the Eye. Upon its back-part the *Retina* is spread, which it holdeth from the *crystalline* Humour at a Distance requisite to receive the Impression of Objects distinctly.

The Optick Nerves pierce the Globe of the Eye a little on the Inside of the Optick Axes. Their external Coat, which is a Production of the *Dura Mater*, is continued to the *Sclerotis*, as their Internal from the *Pia Mater* is to the *Choroides* ; and their medullary Fibres passing thro' all, are expanded into the *Retina*, upon which the Images of Objects are painted. The Center of this Expansion is insensible, and all Rays which fall upon it are lost ; and consequently that Point of the Object from which these Rays come, is invisible to the Eye ; the Reason of which proceeds probably from the Blood-Vessels, which enter with the Optick Nerve, and cover this Part of the *Retina*. But whatsoever its Cause is, there is a manifest Advantage in the Optick Nerves being inserted on the Inside of the Optick Axes : for if they had pierced the Eye in the Axes, then the middle Point of every Object had been invisible ; and where all things conduce to make us see best, there we had not seen at all. We must likewise have lost some Part of an Object, if the Optick Nerves had been placed on the out-side of the Optick Axes ; because an Object may be so placed,

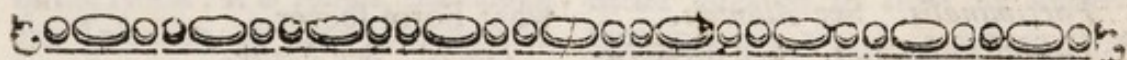
as that all the Rays which come from one Point, may fall upon the Outside of both Eyes : but it is impossible they should fall upon the Inside of both Eyes ; and therefore that Point which is lost in one Eye, is visible by the other.

The Vessels of the Eyes are Branches of the external *Carotides* and *Jugulars*, which are distributed upon the external Parts of the Eyes, and a Vein which opens into the superior *Sinus* of the *Dura Mater*, in the Basis of the Skull, and an Artery from the internal *Carotide*. They accompany the Optick Nerves, and are distributed on the Muscles and Globe of the Eye. There are also some Lymphaticks which accompany the Blood-Vessels. The Optick Nerves are pretty big and round. The third Pair of the Brain, called *Motorii* ; the fourth Pair, called *Pathetici* ; the first Branch of the fifth Pair, called *Ophthalmicus* ; and the sixth Pair, are all bestowed on the Muscles of the Eye.

All the Rays which come from one Point of an Object, are by the *Cornea* and Humours of the Eye united in a Point of the *Retina*, which is in a straight Line, drawn from the same Point of the Object, thro' the Center of the Eye ; and consequently all the Rays which come from all the Points of an Object, are united on the *Retina*, in the same Order and Proportion as the Points of the Object are from whence those Rays come. Therefore the Interposition which these Rays make upon the *Retina*, must be the Image of the Object. And thus Vision in general is perform'd ; but to know what the several Parts of the Globe contribute hereunto, it is needful to observe, that the *Cornea* is more convex than any other Part of it ; by which means all the Rays are gathered to pass thro'

thro' the *Pupilla*, and none of them are lost upon the *Uvea*. The *Aqueous* Humour being thinnest, and most liquid, easily changes its Figure, when either the *Ligamentum Ciliare* contracts, or both the oblique Muscles squeeze the Middle of the Bulb of the Eye, to render it oblong, when Objects are too near us. The straight Fibres of the *Uvea* dilate the *Pupilla*, when there are but few Rays of Light; and the circular Fibres contract it, when there are too many. When the *Pupilla* is contracted, we see most distinctly; when it is dilated, we see most clearly. The *Glassy* Humour keeps the *Chrystalline* at such a Distance from the *Retina*, as is necessary for uniting the Rays which come from one Point of the Object, exactly in one Point of the *Retina*. The Impression of the Object is made upon the *Retina*. The *Choroides* is tintured black, that the Rays of Light which pass thro' the *Retina*, may not be reflected back again, to confuse the Image of the Object. Being distinct, Vision consists in the Union

of all the Rays which come from one Point of an Object, exactly in one Point of the *Retina*: and that the Rays which come from Objects at different Distances are united at different Distances, behind the *crystalline* Humour: They cannot both be exactly united upon the *Retina*, therefore the Eye cannot see equally distinctly, at the same time, Objects at different Distances. It is for this Reason that the Globe of the Eye moves so quickly, and almost continually, and that the Muscles of the Eyes have such a great Quantity of Nerves to perform their Motions. When the Globe of the Eye is flat, as happens sometimes in old Age, that the Rays pass the *Retina* before they unite, in such a Case there is no distinct Vision; and such as have this Defect, are call'd *Presbytae*: And if on the contrary the Globe of the Eye be so convex as to unite the Rays before they come to the *Retina*, neither is there then any distinct Vision; and such as have this Defect, are called *Myopes*.



F

F AT the End of a Prescription, signifies *fiat*, make it up; as *f. Bolus*, make it up into a Bole.

Facies Hippocratica, is when the Nostrils are sharp, the Eyes hollow, the Temples low, the Tips of the Ears contracted, the Fore-head dry and wrinkled, and the Complexion pale or livid.

Factitious, signifies any thing made by Art, in Opposition to what is the Produce of Nature.

Faculty, is a Power or Ability to perform any Action. Institution-Writers mention three, *viz.* Natural, Vital, and Animal. By the first

they understand that by which the Body is nourished and augmented, or another like it generated: which some further divide into three, Nutrition, Growth, and Generation; and the first of these has also by some been divided into Attractive, Retentive, Concoctive, and Expulsive: but these are Terms that puzzle rather than instruct, as they convey no distinct Signification. The vital Faculty is that by which Life is preserved, and the ordinary Functions of the Body performed. And the Animal Faculty is what conducts the Operations of the Mind; as the Imagination, Memory, &c.

Fa-

Fæces, are Excrements ; but often made use of to express the Ingredients and Settlings after Distillation and Infusion.

Fæculæ, are the Dregs which subside in vegetable Juices, as in that of the Roots of *Bryony* ; but these are not so much used in Medicine as formerly.

Falling-Sickness. See *Epilepsy*.

Fallopian Tube. See *Generation Parts of*, belonging to Women.

Falx. See *Dura Mater*.

Fames. See *Hunger*.

Fames Canina, Dog-appetite ; is such an insatiable Hunger, as is not to be satisfied with Eating, but continues even when the Stomach is full. This is a Case much talked of by the Ancients, but rarely met with amongst us. It seems to arise from fretting sharp Juices in the Stomach, which by their continual Vellications excite a Sense like that of Hunger ; and is to be conquered by Medicines, and not ordinary Food, such things as the *Testacea*, all *Alkalies*, and *Chalybeates*.

Farcinialis. See *Alantois*.

Fascialis Musculus. See *Membranosus Musculus*.

Fat, is an Oily and Sulphureous Part of the Blood, deposited in the Cells of the *Membrana Adiposa*, from the innumerable little Vessels which are spread amongst them. The Fat is to be found immediately under the Skin, in all the Parts of the Body, except in the Forehead, Eye-lids, Lips, upper Part of the Ear, Yard, and *Scrotum*. In some the Vesicles of the *Membrana Adiposa* are so full, that the Fat is an Inch or more thick ; and in others they are almost flat, containing little or no Fat. There are two Sorts of Fat, one white, or rather yellow, soft, and lax, which is easily melted, called *Pinguedo* ; another white,

firm, brittle, and which is not so easily melted, called *Sebum*, Suet or Tallow. Some reckon the Marrow of the Bones for a third sort of Fat. Dr. *Grew* takes the Fat of Animals to be a curdling or coagulating of the oily Parts of the Blood, either by some of its own saline Parts, or by the nitrous Parts of the Air mingled therewith : whence it is that some Animals, as Conies and Field-Hares grow fat in frosty Weather, the oily Parts of the Blood being then ordinarily coagulated with a greater abundance of nitrous Salts received from the Air into their Bodies : and for the same Reason it is, that the Fat of Animals is hard ; whereas that of Fishes is soft, and runs all to Oil, because the Water in which they live, hath but few nitrous Parts in it, in comparison of Air. And this Opinion that learned Person supported by many Experiments, too long to be inserted here.

Febrifuge, from *Febris*, a Fever, and *fugo*, to drive away ; is any Medicine serviceable in a Fever, of what Form soever.

Febris. See *Fever*.

Fecula, the same as *Facula* ; which see.

Femur, the Thigh, includes all between the Buttocks and the Knee ; it is thus called from *ferendo*, bearing, because it sustains the whole Animal ; more strictly therefore it signifies the Thigh-Bone. This is the longest of all the Bones in the Body : Its Fibres are close and hard ; it has a Cavity in its middle ; 'tis a little convex and round on its Fore-side, but a little hollow, with a long and small Ridge called *Linea Aspera*, on its Back-side. At its upper End it has three *Epyphyses*, which separate easily in Children : The first is its Extremity, which is a large and round Head covered with a Cartilage,

tilage, which is received into the *Acetabulum Coxendicis*, wherein it is tied by two Ligaments; the first is pretty large, and comes from the Edge of the *Acetabulum*; the second is round and short, it comes from the Bottom of the *Acetabulum*, and is inserted into the Middle of the round Head. The Part immediately below this round Head, which is small, long, and a little oblique, is call'd its Neck. It makes an Angle with the Body of the Bone, by which Means the Thighs and Feet are kept at a Distance from one another, and we stand firmer: the *Linea Propensionis* easily falling perpendicular upon any Part of the Quadrangular Space between the Feet. Besides this Obliquity of the Neck of the Bone, it conduces much to the Strength of the Muscles of the Thigh, which must have otherwise pass'd very near to the Center of Motion. The second is called *Trochanter major*; it is a pretty big Protuberance on the external Side of the Thigh Bone, just at the Root of the Neck: it is rough, because of the Insertion of some Muscles into it. It has a small Dent at its Root, into which the *Musculi Quadragemini*, and the *Obturatores* are inserted. The third is called *Trochanter minor*; it is on the hinder Side of the Thigh Bone, a little lower, and less than the other. These Protuberances mightily increase the Force of the Muscles, by removing not only their Insertions, but likewise the Directions from the Center of Motion. The lower Extremity of the Thigh Bone, which is articulated with the *Tibia* by *Ginglymus*, is divided in the middle by a *Sinus* into two Heads or Protuberances, the external and the internal, which are received into the upper *Sinus*'s of the *Tibia*. Thro' the Space that is between the hind Parts of these two

Heads pass the great Vessels and Nerves, which go to the Leg, because the upper End of the Thigh Bone was articulated by *Artbrodia*, that we might not only move our Legs backwards or forwards, but likewise nearer to, and further from one another; therefore its lower Extremity was joined to the *Tibia* by *Ginglymus*, which is the strongest Articulation.

Fenestra. See *Ear*.

Fermentation. It is not easy to fix Boundaries to this Term, for under it some are for reducing almost all that belongs to Physick, chiefly as it is a Term that accounts for, in the Lump, many *Phænomena*, and saves a great deal of Trouble, by saying such an Effect is occasioned by *Fermentation*. However, it so far concerns every one to have some just Apprehension of what this Term ought to express, that we cannot be at too much Pains to explain it. Inasmuch as it regards Medicine, and exalting or destroying any Properties therein, we cannot have a better Idea of it, than by understanding all which concerns the procuring a spirituous Liquor from Corn. In the Grain itself must lie the Materials of what makes the spirituous Part, because nothing else is concerned in it but Water; to this Purpose therefore it is soaked just so long in a Cistern of Water, as is sufficient to loosen or open its natural Texture; after which it is thrown in a Heap, where it is suffer'd to lie, till by the Motion of its more fine and volatile Parts, it begins to heat and shoot out, as in Vegetation. But to confine these Parts from flying off, by too long a Continuance of such intestine Motion, it is thrown abroad thinner, and exposed more and more to the Air, till it contracts almost a Dryness, which is finished by the Kiln, and all

all its Parts maintained together, but yet in such a lax Condition, as to open and unite with the utmost Ease with warm or hot Water: for by the Sweetness and Consistence of the Wort, and the Lightness of the Grains, it is plain that the whole Substance of the Kernel is mixed with the Liquor. After this *Apparatus*, to finish the Process, and raise from it a strong Spirit, the rest is done by Fermentation: How such intestine Motion is mechanically effected, and how it brings forth such a Spirit, may be conceived in this Manner, if the Reader be acquainted with these Propositions, which are demonstrated in Hydrostaticks.

Prop. 1. *If a Body be emersed in any Fluid specifically lighter than itself, it will sink, but otherwise it will emerge and get to the Top.*

Prop. 2. *If two equal Bodies, of different specifick Gravities, be immersed in a Fluid lighter than either of them, the Celerities of their Descents will be as their Gravities.*

Prop. 3. *If two unequal Bodies, of unequal specifick Gravities, be immersed in a Fluid lighter than either, the Celerities of their Descents will be compounded of their Gravities and Dimensions together.*

The same Laws by which these Bodies descend, hold good in the Ascent of such as are specifically lighter than the Fluid; in all heterogeneous Fluids therefore, the constituent Parts of which are not fitted to associate and cohere, so as to form what is called an uniform homogeneous Fluid, the heavier may be accounted as solid Bodies immersed in a Fluid specifically lighter, and the lighter Parts, as such Bodies in a Fluid specifically heavier; as it is to be demonstrated, *That the com-*

ponent Parts of all Fluids, separately considered, are solid. This Liquor therefore called *Wort*, or a *Decoctation of Malt*, may be considered as such a heterogeneous Fluid whose Parts cannot be interchanged in their Positions, until each has obtained such an Elevation as corresponds to its proper Gravity: but lest this alone should fail of the Intention, by not being sufficient to break those *Molecularæ* and Viscidities which entangle the spirituous Parts, and likewise to prevent their flying off at the Surface, some Portion of an already fermented Substance is mixed with it. This Substance, termed Barm or Yeast, consists of a great Quantity of subtile spirituous Particles, wrapped up in such as are viscid; now when this is mixed with such a Liquor, it cannot but much contribute to that intestine Motion which is occasioned by the Intercourse and Occursions of Particles of different Gravities, as the spirituous Particles will be continually striving to get up to the Surface, and the viscid ones continually retarding such Ascent, and preventing their Escape. So that by these two concurring Causes, the Particles extracted from the Grain will by such frequent Occursions be so comminuted, as continually to increase the more subtile and spirituous Parts, until all that can be made so by Attrition are set loose from their former viscid Confinements; and this appears by the Warmth of the Liquor, and the Froth drove to the Top: just at which Time, if it be thrown into the Still, it affords some Quantity of a high inflammable Spirit. Moderate Warmth much hastens this Process, as it assists in opening the Viscidities in which some spirituous Parts may be

be entangled, and unbends the Spring of the included Air, which cannot but much contribute to the Rarefaction and Communion of the whole. The viscid Parts which are raised to the Top, not only on Account of their own Lightness, but by the continual Efforts and Occursions of the Spirit to get uppermost, both shew when the Fermentation is at the highest, and prevent the finer Spirits making their Escape; for if this intestine *Lectus* be permitted to continue too long, a great deal will get away, and the remaining grow flat, and vapid, and raise little besides Phlegm in the Still.

This may give sufficient light into all that concerns fermenting Vegetables, or any other proper Substances, in order to draw out their medicinal Efficacies; and hence likewise from the natural Textures and Cohesions of Bodies under this Management, it may be known how to order the whole, as those of a looser Texture will require the least Opening by such Means. But the greatest Use of this Theory will be in teaching what Parts of the *Materia Medica* are most properly brought under this Procedure; and also how such intestine Motion does in some things destroy their Virtues: for as by some Medicines an Intention is aimed at which is not to be procured but by their being spirituous, whereas in others the very contrary Property is required; in such Cases therefore, when by any adventitious Cause those Medicines get into a Ferment, they are destroyed, and should not be administered.

There are other Species of Fermentation which occur often in Chymistry, not to be accounted for but from the Elasticity and attractive

Powers of the Bodies concerned therein: For Particles which are intirely Elastick, recede from one another after they have met, with the same Celerity they had before they met. In Particles therefore of this kind, a new Degree of Motion will be acquired after every Congress, and the Conflict will be more violent; so that at length their *Impetus* and Moment will be so great, as to break and destroy the hardest Bodies. And since this Force of Elasticity is attended with that of Attraction too, the Motion will increase yet to a greater Degree; for the *Impetus* of a Particle which is reflected against another endu'd with an attractive Force, is continually augmented by the Repercussion. Particles thus agitated, endeavour to drive out and exclude all the Air which is contained in their Pores; and the Air being rarefy'd by this Collision, so as that it cannot, upon the Account of its Levity, keep its former Place, carries up with it those Globules of Water, which inclosed it, to the Surface, and there forms Bubbles. If this Motion increases to a very high Degree, it raises an Effervescency and Heat, which is nothing else but a more rapid Motion of Parts, produced by their mutual Attrition. And that we may the better conceive this, let us examine how an Effervescence is produced by mixing of different Liquors, as Water for Instance, and Oil of Vitriol. In this Oil there is such an Abundance of Salts, that they seem to be placed close to one another; and upon this Account, because the Attraction is diffused equally every Way, they continue as it were in an *Equilibrium*; but when the Water is poured upon it, the Contact of the Salts is taken away, and the Attraction becomes unequal. These

Salts, according to their natural Propensity, strive to unite again ; and since by Reason of the Quantity of Matter they contain, they attract one another more than they do the Water, they displace the Water, and force it out of their Intervals, until such Time as the Oil is diluted every where alike, and then the Fermentation ceases. But if the Salts are elastick, which is very probable, they will not only rush upon one another with Violence, but after the Stroke recoil, and move in a contrary Direction : from hence proceeds the reciprocal Fluctuation of Parts, which is observable every Way, and at length an Effervescence. And thus that Kind of Fermentation, usually ascribed to an imaginary Antipathy, is to be mechanically accounted for.

In all this, both an attractive and an elastick Force are necessary Assistants, and all the Varieties of Fermentation are owing to the different Degrees of them. Hence it is, that often new Bodies arise during Fermentation, for the former Texture is intirely destroyed by the continual Collision of Parts : And hence those great Changes which are seen in Bodies under a State of Corruption, which is accounted only a Species of Fermentation. But with all these Requisites to this intestine Motion of Bodies, very little thereof can take Place in circulating Liquors. How much soever therefore this Term is made Use of to account for several Appearances in Animals, it must be from mere Ignorance, or on purpose to deceive : For thus far only can their Juices be capable of Fermentation, as they are remitted in their circulatory Motions enough to make the natural Attractions of their Particles greater than the Force by which

they are impelled, which cannot be but where they are almost entirely stopp'd. In the larger Glands then the separated Juices may undergo some Motions of this Kind, so as sometimes to be changed thereby from their natural Properties ; but the Blood, while in its due Circulation, cannot be under such Influence, because the Velocity of its Parts, from the impelling Force, is too great to let them obey their Attractions of one another. How remote then must those Reasonings be from the Truth, that are built upon such a Foundation ? And how hazardous must a Practice be, that flows from such a fallacious Theory ?

Fever, is an augmented Velocity of Blood. The almost infinite Variety of Causes of this Distemper, does so diversify its Appearances, and indicate so many Ways of Cure, that our Room here will not allow of any more than to refer to *Bellini* and *Cheyne* for the Theory, and *Riverius*, *Willis*, and *Morton*, for the Practice, in all its Shapes.

Fibra Auris. See *Ear*.

Fibre, is an animal Thread, of which there are different Kinds ; some are soft, flexible, and a little Elastick ; and these are either hollow like small Pipes, or spongy, and full of little Cells, as the nervous and fleshy Fibres ; others are more solid, flexible, and with a strong Elasticity or Spring, as the membranous and cartilaginous Fibres ; and a third sort are hard and flexible, as the Fibres of the Bones. Now of all these, some are very sensible, and others destitute of all Sense ; some so very small as not to be easily perceived ; and others, on the contrary, so big as to be plainly seen ; and most of them, when

when examin'd with a Microscope, appear to be compos'd of still smaller Fibres. These Fibres first constitute the Substance of the Bones, Cartilages, Ligaments, Membranes, Nerves, Veins, Arteries, and Muscles. And again by the various Texture, and different Combination of some or all of these Parts, the more compound Organs are framed; such as the Lungs, Stomach, Liver, Legs, and Arms, the Sum of all which make up the Body. As for that particular Property of Elasticity, or a Power of Contraction after the distractile Force is removed, upon which the Knowledge of the Animal Mechanism so much depends, too much Pains cannot be taken for rightly understanding it. It is well known that any Membrane or Vessel may be divided into very small Fibres or Threads, and that these Threads may be drawn out into a very considerable Length without breaking; and that when such external Force is removed, they will again restore themselves to their proper Dimensions. It is further also manifest, that this Property is preserved to them by a convenient Moisture, because if one of those Threads be dried, it immediately looses it, so that upon the Application of any Force to stretch it, it will break; as also will its lying soaked in Liquor too much render it flaccid, and destroy all its Power of Restitution when distended. Now some Hints of that Configuration of Parts upon which this Property depends, may be had from the Contrivance and Properties of a Syringe, with the Reasons why it is so difficult to draw back the *Embolus*, when the Pipe is stopped; and the Necessity of any Liquors following it, wherein the Pipe is immersed. All that

is necessary to this Contrivance, is, that the *Embolus* be so exactly adapted to the inner Surface of the Barrel, as to prevent any Air passing between them when it is drawn up; that it matters not what Figure the Barrel is of, so that the *Embolus* is well fitted to it. It easily therefore might be contrived to make a Case of Syringes, wherein every Barrel may also serve as an *Emblus* to its Exterior, which immediately includes it. And in this manner it is not at all difficult to imagine a continued Series of Particles so put together, that the inner may be moved and drawn upon one another, without suffering the Air immediately to enter into the Interstices made by their Distraction; whereupon, as soon as that Force which drew them is removed, they will for the very same Reason as the *Embolus* of a Syringe rush up again into their former Contacts: As suppose *A* and *B*, Fig. 1. two Particles touching one another in *ef*, and *C D* two others, covering on the opposite Sides their Contacts. It is also to be supposed that on the other Sides they are covered with other Particles in the same manner as by *C D*, so that the Places of their Contacts are on all sides cover'd from the Air, or the Insinuation of any fluid Body. Wherefore if *AB* by an external Force, greater than that of their Cohesion, be drawn from each other as far as *G I* and *H K*, in Fig. 2. as soon as that Force is removed, they will again run into their former Contacts in *ef*, Fig. 1. that is, if they are not so far as to bring their transverse Surfaces to coincide with *C* and *D*: for then the Air, or circumambient Fluid, will interpose, and prevent their reunion: so that by this Contrivance, so much of *A* and *B* as is inclosed by



Fig. 1.

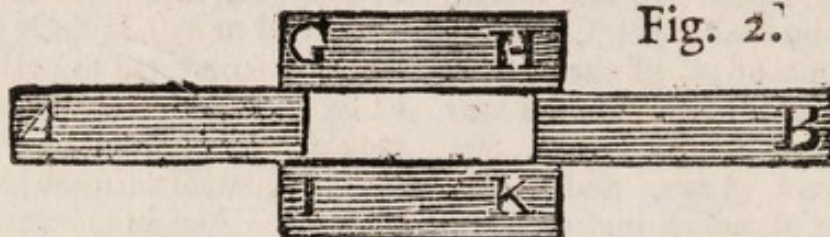


Fig. 2.

other surrounding Particles, is as the *Embolus* of a Syringe, and the Particles surrounding them as its Barrel: and therefore when *A* and *B* are distracted from their Contacts in *ef*, it will be with some Difficulty; and when the distracting Force is taken away, they will again run up into their former Contacts, just as the *Embolus* of a Syringe, and for the same Reason. It is not rigidly contended, that this must exactly be the Contexture of a Fibre, but only something like this, whereby the Interstices of the interior Orders are covered by the exterior in such a manner, that when the Thread is distended, that is, when its constituent Parts are drawn from their transverse Contacts, neither the Air, nor any other external Fluid, can get between them, so as to hinder their re-union, as soon as such Force is withdrawn; that is, if their distraction, as was before said be not so far to bring their transverse Surfaces to a coincidence with one another; for then the circumambient Fluid will interpose, that is, the Thread will be broke.

But besides this peculiar Arraignment of a determinate Set of Parti-

cles to the compose main Substance of an animal Fibre, endowed with the Properties above-mentioned, it seems not at all unreasonable to conjecture, that into their Composition also enters a common *Capsula* or Covering, which assists in the wrapping up and holding together those *Fasciculi*, or Series of Particles already described, not much unlike the *Periosteum* of the Bones; the Contexture of which Covering, resembling that of a Net, cannot any ways hinder either the transverse or longitudinal Distractions of the other Parts.

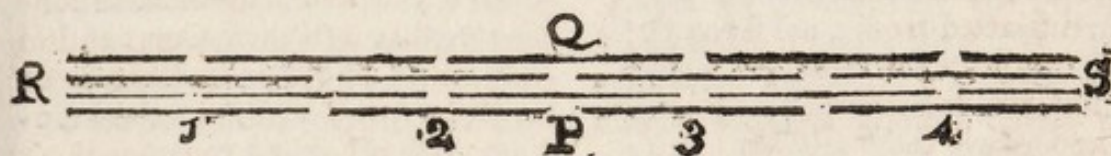
Supposing this then to be the Contexture of a Fibre, it will be necessary to consider what further Requisites are needful to put them into that State which they are in, in a living Body, to shew how they are maintained in continual Motion, and what are the Consequences of it. I. And first, it is necessary to take Notice, that all the Fibres in a living Body are in a State of Distension, that is, they are drawn out into a greater Length than they would be in, if separated from any Part, and taken out of the Body; which is demonstrable upon any

Solu-

Solutio Continui, as in the transverse Division of a Nerve or Artery; for immediately the divided Parts run up, and leave a great Distance between them, and the Fluids contained between them upon such Contraction, to be squeezed out. And this also makes it appear that their natural Distractions are owing to some Fluids being propelled into the Vessels which they compose, with a Force greater than their Endeavours of Restitution, so far as to obtain a close Contact of all their transverse Surfaces, but yet

lesser than that which is necessary to distract them, so as to bring them into a coincidence, for then the Vessels would break. II. Next then this State of Distraction must necessarily leave *Vacuola* between all the transverse Surfaces, as between *G I* and *H K*, in *Fig. 2.* and may be represented by the several Series of Particles in *Fig. 3.* which *Vacuola* will continue as long as the longitudinal Surfaces of its component Parts continue so close to one another, as to prevent the Insinuation of any foreign Matter,

Figure 3.



how subtle soever, between them. For the same reason therefore as when the *Embolus* of a Syringe is drawn, and the Pipe is stopped, there must be continually a *Nisus Restituendi*, or an Endeavour of Contraction; there is also this further necessity of their being continued in a State of Distraction, because if they were closely to touch one another in all Parts, they could not be put into and continue in those undulatory Motions which they are always in, in a living Body, without being alter'd in their Figures and Contextures. III. But it being manifest that all the animal Fibres are continued by the perpetual successive Impulse of the Fluids, in such undulatory Motions, besides this Necessity of their Distraction, they also must be continually moistened with some convenient Fluid, because otherwise their continual Attritions against one another would wear them out, as well as render it

difficult to move them. The Fluid also for this purpose must be very soft and subtle, because otherwise it cannot be insinuated into all the Interstices of the Fibres, without so far separating their Parts, as is inconsistent with that Contexture and Mechanism here laid down.

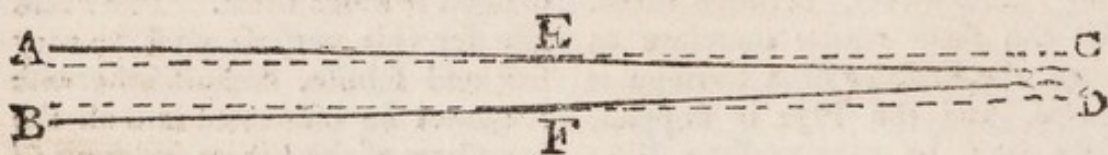
Upon this View there arises a very natural Explication of several Terms much used by mechanical Writers; such as Distraction, Contraction, Vibration, Undulation, Tonick Motion, Concussion, Relaxation, Corrugation, and Elasticity of the Solids; all which are but different ways of expressing the various Modifications and Dispositions of those *Machinule* with which all the Fibres are composed.

Thus far then being granted about the Contexture of a Fibre, and the Requisites for its Office, it is then to be consider'd how it comes first to be set in Motion, and by what Mechanism it is afterwards carried

on. Suppose then the Fibre, *Fig. 3.* in such a State of Distraction as before-mention'd; it is certain, by *Req. II.* that in all Parts there is a *Nisus Restituendi*: Where then any external Impulse is made against it from *R* to *S* successively thrusting it from *P* towards *Q*; it is certain that against *1*, for Instance, the Thread will be more distracted there than in any other Part, and thereby will there be a greater Endeavour of Restitution. And therefore the Impulse passing on towards *S*, all the constituent *Machinulae 1, 2, 3, 4*, will successively move after one another. But to make this Matter still more plain, let a Portion of an Artery be represented by *Fig. 4.* thro' which the Blood is continually propelled in a Direction parallel to its Axis, nothing is more certain

than that if it were not for the Resistance of the Sides of the Artery at *E F*, the Blood setting out at *A B* would go on by the pricked Lines *C D*, and therefore it cannot but strike against the Sides of the Artery at *E F*, and distract them there more than any where else, whereby their Endeavours of Restitution will be there the greatest: and therefore when the Impulse of the Blood has raised them to a certain measure, wherein their Endeavours of Restitution will exceed the Impulse that raised or distracted them, their contractile Powers will draw them again into the same Dimensions, and consequently the Blood will be thrust forward into the next Section of the Artery, and so on successively from one to another thro' the whole Course of its Cir-

Figure 4.



ulation: the Contraction of one Section of an Artery being the true Cause of the Blood's Impulse against and raising the next. The most natural Consequence of this Motion will be breaking still smaller the Parts of that Fluid, which by *Req. III.* is dispensed to lubricate and facilitate their Motions; which Comminution will continue till it is render'd so fine, as to fly off at the Surface, whenever it happens to get there: and that which thus insensibly flies off is the true *Materia Perspirabilis* of *Sanctorius*; and before it is so broke, and serves for the Purposes aforementioned, it is that which is to be understood by the common Terms of Animal Spi-

rits, or Oil, *Liquidum Nervosum*, *Succus Nervosus*, the nervous Fluid or Juice, and the like. Any thing else denominated a Spirit in a human Body, that is not subject to mechanical Laws, belongs to another Order of Men to explain; and lies quite out of the reach of that Reason, which a Physician is compelled to take up with for his Guide.

Fibula, the outer and lesser Bone of the Leg; it is also called *Fossile minus*; it is much smaller than the *Tibia*, yet not shorter. It lies on the outside of the Leg; and its upper-end, which is not so high as the Knee, receives the lateral Knob of the upper-end of the *Tibia*, into

a small *Sinus* which it has in its inner Side. Its lower end is received into the small *Sinus* of the *Tibia*, and then it extends into a large Process, which forms the outer Ankle, embracing the external Side of the *Astragalus*. The *Tibia* and *Fibula* touch not one another, but at their Ends. The Space which they leave in their Middle is filled up by a strong Membranous Ligament, and some Muscles which extend the Feet and Toes.

Fici, there are several Excrescencies, such as those about the Fundament, in Persons subject to the Piles, or infected with the Venereal Disease, which are thus called by Surgeons.

Fidicinales, is a Term applied by Mr. Cowper, and some other Anatomists to those Muscles of the Fingers called also *Lumbricales*, from the use they are put to by Musicians in playing upon some Instruments.

Filaments, are little Threads, Strings or Fibres of any Thing.

Filtration. This is a Method by which Liquors are procured fine and clear, and is chiefly concerned in Tinctures, when some Portion is drawn from the Ingredients, or suspended in the Tincture, which is not necessary thereunto, but disturbs and renders the rest unpleasant both to the Palate and Sight. The Filtration in Use is straining a Liquor thro' Paper, which by the Smallness of its Pores admits only the finer Parts thro', and keeps the rest behind. There is another Filtration, which as much tortured the Philosophy of some Ages to account for; and is performed by the Ascent of the finer Parts of a Liquor up a Cord, or Skain of Cotton, or such like Matter, which is contrived to drop over into another Vessel, and leave the grosser behind. Some

say that the Cause of this Ascent, is because the Liquor swells those Parts of the Filtre that touch it, by entering into the Pores of the Threads which compose it, whereby they rise up, touch and wet those next above them; and these again the next Threads, and so on to the Brims of the Vessel, when the Liquor runs over, and descends in the other Part of the Filtre, which hangs down by its own natural Gravity. But this is liable to many Objections, especially that of Liquors rising in Glass Tubes, much above the Surface of that into which they are immersed, where the Glass cannot be imagined thus to swell. Others think this Ascent more probably to be, because every Filtre being composed of a great Number of long, small, solid Bodies, which lie very close together, the Air getting in between them, loses much of its Pressure, and cannot gravitate there so strongly as it doth on the Fluid without them; wherefore the Parts of the Water between the Threads of the Filtre must be pressed upwards, and ascend till they come so high, as by their Weight to counterballance the general Pressure on the other Parts of the Surface of the Water. See *Dispensatory*.

Fimbriæ. The Extremities or Borders of the *Tubæ Fallopiæ* were formerly thus called, signifying a fringed Border, which that resembles.

Fingers. See *Digitus*.

Fire. See *Heat*.

Fire, Circulatory or Reverberatory; is a Chymical Furnace, where the Heat goes not out by a direct Funnel, but is returned upon the Vessel, or Matter to be managed by it.

Fire, Potential, the same as *Causlick*; which see.

Firmness. This Property in all Bodies must be as the Surfaces and Contacts of their component Parts: And thus that Body whose Parts are most firm in themselves, and are by their peculiar Shapes capable of the greatest Contacts, is the most firm, and that which has Parts very small, and capable of the least Contact, will be most soft. In the former the greatest Requisite is to be as near the Cubes as possible, and in the latter to Spheres. And in the same manner are to be accounted for, not only all the intermediate Degrees between the most firm and the most soft Bodies, but those different Consistences which are distinguish'd by other Names, as friable, tenacious, glutinous, and the like; for the greater are the Solidities or Firmness of the component Parts of any Body, in Proportion to their Surfaces, tho' that Body by the Aptitude of their Contacts may be what we call very hard, yet it will be the most friable or brittle. And where the Surfaces of the compounding Particles are much extended upon a small Quantity of Matter, the Bodies they compose, tho' they may be light and soft, yet they will be tenacious or glutinous; for altho' the Flexibility of their compounding Parts admits of their easy Change of Figure by any external Force; yet by their touching one another in so many Points, they are very difficultly separated. The former is the Case of crystallized Salts, Resins, and the like; the latter of Turpentine, Gums, and all of that Tribe. For further Understanding herein, see *Cohesion* and *Solidity*.

Fissure, from *fundo*, to cleave, is any Crack or Slit. In natural Phi-

losophy this Term is frequently used for those Divisions between Layers of different kinds of Earth or Stone. And in Anatomy, Surgeons use it for the longitudinal Fractures of Bones.

Fistula, is any kind of Pipe; and therefore some Anatomists call many Parts that have any Resemblance thereto in their Figure, *Fistulae*; as the *Aspera Arteria*, *Fistula Pulmonis*, the *Urethra*, *Fistula Urinaria*, &c. But its most common Use is for Ulcers that lie deep, and ouze out their Matter thro' long, narrow, winding Passages; in which Cases the Bones are frequently foul, and the extreme Parts callous.

Fixation, is a Term used by Chymists to express the reducing a fluid Body into a fixed one; as Quick-silver, by a Mixture of Lead, &c.

Flammula Vitalis. Some have entertained very fine spun Notions under this Term: but we can make no more plain Sense out of all the Conceits upon this Head, than that natural Warmth, which is the Effect of a circulating Blood, and which therefore is always as its Velocity.

Flatulent Tumours, are such as easily yield to the Pressure of the Finger, but readily return, by their Elasticity, to a tumid State again. These are so light as scarce to be felt by the Patient, and are no otherwise incommodious than by their Unsightliness or Bulk.

Flatus, is Wind gathered in the Bowels, or any Cavities of the Body, caused by Indigestion, and a gross internal Perspiration, which therefore is dissolved by warm Aromaticks, and rarefy'd enough to break away, wherever Vent can be found.

Flexor Brevis, the same as *Perforatus*; which see.

Flexor

Flexor Carpi Radialis. See *Cubitus Internus*.

Flexor Carpi Ulnaris. See *Radius Internus*.

Flexores Pollicis. There are two of these Muscles; the first arises from the internal Exuberance of the *Humerus*, and from the Middle and inner Part of the *Radius*, by two different Orders of fleshy Fibres; and passing under the *Ligamentum Annulare*, its Tendon is inserted into the third Bone of the Thumb. The second arises from the Bones of the *Carpus* from the annular Ligament, and is inserted into the second Internode of the Thumb.

Flexor Pollicis Pedis longus, arises from the upper and back Part of the *Fibula*, and passing behind the inner Ankle, is inserted into the last Bone of the great Toe.

Flexor Pollicis Pedis brevis, arises from the *Os Cuneiforme Medium*, and is inserted into the *Offa Sesamoidæa* upon the second Joint of the great Toe.

Flesh. See *Caro*.

Flowers, in Chymistry, are the most subtle Parts of dry Bodies, which rise by Fire to the Top of Vessels made on purpose to receive them; as the Flowers of Sulphur, Benjamin, &c.

In Botany, such are reckoned perfect Flowers, which have *Petala*, a *Stamen*, *Apex*, and *Stylus*; and whatever Flower wants either of these, is reckon'd imperfect. Perfect Flowers are divided into simple ones, which are not composed of other smaller ones, and which usually have but one single Style; and compounded, which consist of many *Flosculi*, all making but one Flower. Simple Flowers are *monopetalous*, which have the Body of the Flower all of one entire Leaf, tho' sometimes cut or divided a little

way into many seeming *Petala*, or Leaves; as in Borage, Bugloss, &c. Or, *Polypetalous*, which have distinct *Petala*, and those falling off singly, and not all together, as the seeming *Petala* of the *Monopetalous* Flowers always do. Both those are further divided into uniform and difform Flowers: The former have their right and left-hand Parts, and the forward and backward Parts all alike; but the Difform have no such Regularity, as in the Flowers of Sage, Dead-nettle, &c. A *monopetalous* difform Flower is likewise further divided into, 1. *Semifistular*, whose upper-part resembles a Pipe cut off obliquely as in the *Acilostochia*. 2. *Labiate*; and this either with one Lip only, as in the *Acanthum* and *Scordium*; or with two Lips, as in the far greater Part of the *Labiate* Flowers. And here the upper Lip is sometimes turned upwards, and so turns the convex Part downwards, as in the *Chamæcisus*, &c. but most usually the upper Lip is convex above, and turns the hollow Part down to its Fellow below, and so represents a kind of Helmet, or Monk's Hood. And from thence these are frequently called *Galeate*, *Cucullate*, and *Galericulate* Flowers; and in this Form are the Flowers of the *Lamium*, and most *Verticillate* Plants. Sometimes also the *Lamium* is entire, and sometimes jagged or divided. 3. *Corniculate*, i.e. such hollow Flowers as have on their upper-part a kind of Spur or little Horn; as in the *Linaria Delphinum*, &c. And the *Carniculum*, or *Calcar*, is always impervious at the Tip or Point. Compounded Flowers are either, 1. *Discous* or *Discoidal*, that is, whose *Flosculi* are set together so close, thick, and even, as to make the Surface of the Flower plain and flat;

flat, which therefore because of its round Form will be like a *Discus*: which *Disk* is sometimes radiated, when there is a Row of *Petala* standing round in the *Disk* like the Points of a Star, as in the *Matricaria*, *Chamæmelum*, &c. and sometimes naked, having no such radiating Leaves round the Limb of its *Disk*; as in the *Tanacetum*. 2. *Planifolious*, which is composed of plain Flowers set together in circular Rows round the Centre, and whose Face is usually indented, notched, uneven and jagged; as the *Hieracia*, *Sonchi*, &c. 3. *Fistular*, which is compounded of many long, hollow, little Flowers, like Pipes, all divided into large Jags at the Ends. Imperfect Flowers, because they want the *Petala*, are called *Stamineous*, *Apetalous*, and *Capillacious*. And those which hang pendulous by fine Threads like the *Juli*, are by *Tournefort* called *Amentacious*; we call them *Cats-tails*. The Term *Campaniformis* is used for such as are in the Shape of a Bell, and *Infundibuliformis* for such as are in the Form of a Funnel.

Fluidity. This is a Property arising from the Smallness of the constituent Particles of Bodies, and their Disposition to Motion from the Sphericity of their Figures, whereby they can easily slide over one another's Surfaces all Manner of Ways, and can touch but in few Points. Mr. Boyle, in his History of Fluidity, enumerates several Requisites thereunto, and gives many curious Experiments in confirmation of his Conjectures; As does also Dr. Hook in his *Micrographia*. But the corpuscular Philosophy seems defective in explicating this great *Phænomenon*, without recourse to the true Cause of the various Agitations and Motions of the Particles of Flu-

ids, assigned by Sir *Isaac Newton*: who, as he lays it down for a primary Law of Nature, that all Particles of Matter do attract one another when they come within a certain Distance; so he also conjectures, that at all greater Distances they do fly away from, and avoid one another. For then, tho' their common Gravity may keep them together in a Mass, together with the Pressure of other Bodies upon them; yet their continual Endeavour to avoid one another singly, and the adventitious Impulses of Light, Heat, or other external Causes, may make the Particles of Fluids continually move round about one another, and so produce this Quality. There is a Difficulty indeed in accounting why the Particles of Fluids always keep at such a Distance from one another, as not to come within the Sphere of one another's Attraction. The Fabric and Constitution of that fluid Body of Water is wonderfully amazing; that a Body so very rare, and which has such a vast Overproportion of Pores, or interspersed Vacuity, to solid Matter, should yet be perfectly incompressible by the greatest Force. And yet this Fluid is easily reducible into that firm, transparent, friable Body, which we call Ice, by being only exposed to a certain Degree of Cold. One would here think that tho' the Particles of Water cannot come near enough to attract each other; yet the intervening frigorifick Matter doth, by being mingled *per minima*, strongly attract them, and is itself likewise strongly attracted by them, and so wedges or fixes all the Mass into a firm solid Body; which solid Body loses its Solidity again, when by Heat the *Vinculum* is solved, and the frigorifick Particles are disjoined from

from those of the Water, and are forced to fly out of it. And just thus may the Fumes of Lead perhaps fix Quicksilver. When a firm solid Body, such as a Metal, is by Heat reduced into a Fluid, the Particles of Fire disjoin and separate its constituent Parts, which mutual Attraction caused before to cohere, and keep them at such a Distance from one another, as that they are out of the Sphere of each other's Attraction as long as that violent Motion lasts; and when by their Lightness and Activity they are flown off, unless they be renewed by a continual Supply, the component Particles of the Metal come near enough again to feel one another's Attractions. As therefore the Cause of Cohesion of the Parts of solid Bodies appears plainly to be their mutual Attraction; so the chief Cause of Fluidity seems to be a contrary Motion impressed on the Particles of Fluids, by which they avoid and fly one another, as soon as they come at, and as long as they keep such a Distance from each other. It is observed also in all Fluids, that the Direction of their Pressure against the Vessels that contain them, is in Lines perpendicular to the Sides of such Vessels; which Property being the necessary Result of the Particles of any Fluids being Spherical, it shews that the Parts of all Fluids are so, or of a Figure very nearly approaching thereunto. As this is a very necessary *Præcognitum*, see further under *Hydrostatics*, and *Glands* in general.

Fluor, is a philosophical Term used to signify the actual State of Fluidity of Bodies, whilst their Parts are kept in Motion by Fire, or any other Agent.

Fluor Albus, is a Distemper common to the Female Sex, called by

them the *Whites*. It arises from a Laxness of the Glands of the *Uterus*, and a cold pituitous Blood, that, instead of the menstrual Discharges, issues out a slimy yellowish Matter, not much unlike the running of a *Gonorrhæa*, and which it is so near a-kin to, as hardly to be distinguished; and sometimes is attended too with such a Sharpness, as to make it dangerous to Men to have any venereal Intercourse with them at those times. The Cure is much the same as in a *Gonorrhæa*, and requires deterging and strengthening; to both which Purposes most of the Turpentine are conducive, especially after due Evacuation. This is also by some Writers called *Fluor Muliebris*, and *Uterinus*.

Fluxion, is used by the Chymists in the same Sense as *Fusion*; and signifies running any Metals or other Bodies into a Fluid, by Fire or otherwise. It also signifies the same as *Defluxion*, or *Cattarrh*, from *fluo*, to flow. For which Reason likewise *Fluxus Alvinus* is a *Diarrhæa*; *Fluxus Hepaticus*, a *Dysentery*, from the Contents of the Stools, and the like.

Fluxion of Humours. See *Collection of Humours*.

Focile Majus. See *Ulna*, and *Tibia*.

Focile Minus. See *Radius* and *Fibula*.

Focus, from its signifying a Hearth, or Fire-Place, some have made use of it to express the Seat of a Fever, or some other Distempers. In Opticks it is the Point of Convergence or Concourse, where the Rays meet and cross the Axis after their Refraction or Reflection.

Fodina: The Labyrinth in the Bone of the Ear is thus called.

Fætus, the Child in the Womb is thus called after it is perfectly formed;

formed ; before that it being called *Embryo*. The *Fœtus* when formed is almost of an oval Figure, whilst it lies in the Womb, for its Head hangs down with its Chin upon the Breast ; its Back is round ; with its Arms it embraces its Knees, which are drawn up to its Belly ; and its Heels are close to its Buttocks, its Head upwards, and its Face is towards its Mother's Belly ; But about the ninth Month, its Head, which was always specifically lighter than any other Part, becomes specifically heavier, its Bulk bearing a much smaller Proportion to its Substance than it did, and consequently it must tumble in the Liquor which contains it ; so its Head falls down, its Feet get up, and its Face turns towards its Mother's Back : But because then it is in an irksome, tho' favourable Posture for its Exit, the Motion it makes for its Relief, gives frequent Pains to its Mother, which causes a Contraction of the Womb, for the Expulsion of the *Fœtus*. When the Child presents in any other Posture, it should be carefully put back again, and, if possible, turn'd the right way : If that can't be done, it should be brought away by the Feet. See *Conception*.

Foliation, is one of the Parts of the Flower of a Plant, being the Collection of those fugacious colour'd Leaves (called *Petala*) which constitute the Compass of the Flower ; and also sometimes to secure and guard the Fruit which succeeds the Foliation, as in Apples, Pears, &c. and sometimes stands within it, as in Cherries, Apricocks, &c. for these being of a very tender and pulpy Body, and coming forth in the colder Parts of the Spring, would be often injur'd by the Extremities of Weather, if they were not thus protected, and lodged up within their Flowers.

Follicule, a Term in Botany, signifying the Seed-Vessel, *Capsula Seminalis*, or Case which some Fruits and Seeds have over them ; as that of the *Alkekengi*, *Pedicularis*, &c.

Folliculus Fellis. See *Vesica Biliaris*.

Fomentation, is a Sort of partial Bathing, called also Stuping, which is applying hot Flannels to any Part, dipped in medicated Decoctions, whereby the Steams breathe into the Parts, and disperse obstructed Humours.

Fontinella, or *Fonticulus*, signifies strictly a little Spring ; and is used to express Issues, Seatons, or any such like artificial Discharges.

Foramen Arteriæ Duræ Matris. See *Dura Mater*.

Foramen Lacerum. See *Dura Mater*.

Foramen Ovale. See Circulation of the Blood in a *Fœtus*, and *Heart*.

Forceps, properly signifies a Pair of Tongs ; but is used for an Instrument in Chirurgery, to extract any thing out of Wounds, and the like Occasions.

Fore-Skin. See *Præputium*.

Forfex, an Instrument to draw Teeth with.

Form, is the essential, specific, or distinguishing Modification of the Matter of which any thing is composed, so as thereby to give it such a peculiar Manner of Existence : And this is an Aggregate or Convention of as many particular Qualities, as serve to denominate a Body of such a Nature, and to give it such a Name, and which distinguishes it from other Bodies : So that it is not any kind of substantial Soul or Substance distinct from Matter, but only such a proper and agreeable Convention of Accidents, as by common Consent are reputed sufficient.

sufficient to make a Portion of universal Matter belong to this or that determinate Genus or Species of natural Bodies.

Formica, is an Ant, and is used to express little Tumours which appear like the Bitings of those Creatures.

Formicans Pulsus, is an exceeding small and unequal Pulse, being no more than a less Degree of the Vermicular.

Formula, a little Form or Prescription, such as Physicians direct in extemporaneous Practice, in Distinction from the great Forms, which are for the Official Medicines.

Fornix. See *Brain*.

Fossa Magna, is the interior Cavity of the *Pudendum muliebre*.

Fossile, this signifies any thing that is dug out of the Earth; from *fodio*, to dig. For the several Divisions of which, see the Writings of natural Historians.

Fotus, the same as Fomentation.

Fovea Cordis, the Hollow of the Heart. See *Anticardium*.

Fracture, from *frango*, to break, is the accidental breaking of any Bone.

Franum, signifies a Bridle, and is used for the membranous Ligament under the Tongue, which generally wants cutting in Infants, to give sufficient Room for the Tongue's Motion. There is also a Bridle of the *Penis* which ties the *Prepuce* to the *Glans*; and which being contracted in a *Gonorrhœa*, is called a *Chordé*; which see.

Freckle. See *Lentigo*.

Freezing. Altho' this Term is out of the Province of Medicine, yet it is concerned in such a Change of Bodies as bears a Resemblance to, and therefore may explicate the Alteration made in several Substances

under the Physician's Directions; and for that Reason is of Use to be understood. That Ice is specifically lighter than the Water out of which it is by freezing made, is certain by its swimming in it; and that this Levity of Ice proceeds from those numerous Bubbles which are produced in it by its Congelation, is equally certain: But how those Bubbles comes to be generated in freezing, and what Substance they contain in them, if it be any, is an Enquiry of great Importance, and perhaps if discover'd, might help us much to understand the Nature of Cold. The true Cause of the Congelation of Water into Ice, seems plainly to be the Introduction of the frigorifick Particles into the Pores or Interstices between the Particles of Water; and by that Means getting so near them, as to be just within the Spheres of one another's Attractions, and then they must cohere into one solid or firm Body. But Heat afterwards separating them, and putting them into various Motions, breaks this Union, and separates the Particles so far from one another, that they get out of the Distance of the attracting Force, and into the Verge of the repelling Force, and then the Water re-assumes its fluid Form. Now that Cold and Freezing do arise from some Substance of a saline Nature, floating in the Air, it seems probable from hence, That all Salts, and more eminently some particular ones, when mixed with Snow or Ice, do prodigiously increase the Force and Effects of Cold. We see also that all saline Bodies do produce a Stiffness and Frigidity in the Parts of those Bodies into which they enter. Microscopical Observations upon Salts manifest, that the Figures of some Salts, before they shoot

shoot into Masses, are thin double wedged-like Particles, which have abundance of Surface in respect to their Solidity, (which is the reason why they swim in Water when once raised in it, tho' specifically heavier.) These small Points of the Salt getting into the Pores of the Water, whereby also they are in some measure suspended in the Winter-time, (when the Heat of the Sun is not ordinarily strong enough to dissolve the Salts into a Fluid, to break their Points, and to keep them in perpetual Motion) being less disturbed, are more at liberty to approach one another, and by shooting into Crystals of the Form above-mentioned, do, by their Extremities, insinuate themselves into the Pores of Water, and by that means freeze it into a solid Form. And we see the Dimensions of Water are increased by freezing, its Particles being kept at some distance one from another by the Intervention of the frigorifick Matter. But besides this, there are many little Volumes or Particles of Air, included at several distances both in the Pores of the watry Particles, and in the Interstices made by the spherical Figures. Now by the insinuation of these Crystals, the Volumes of the Air are driven out of the watry Particles: and many of them uniting, form larger Volumes, which thereby have a greater Force to expand themselves than when dispersed, and so both enlarge the Dimensions, and lessen the specifick Gravity of Water thus congealed into Ice. And hence we may guess at the manner, how Water impregnated with Salts, Sulphurs, or Earths, which are not easily dissolvable, may form it self into Metals, Minerals, Gums and other Fossils; the Parts of these Mixtures becoming a Cement to the

Particles of Water, or getting into their Pores, and changing them into these different Substances. See *Prop.* 18. under *Particles*.

Friction, is often used by mechanical Writers to express that Resistance and Wearing which arises from the rubbing hard Bodies one against another; as also by Physicians, for rubbing any Part in order to dislodge any obstructed Humours, or promote a due Motion of the included Juices. This is of great service in Medicine, and may contribute to the Cure of several Distempers, and especially such as proceed from a Stoppage of insensible Perspiration, or an Obstruction of the cuticular Pores.

Frigidarium, was a Term by the Antients given to a Vessel, used in their Bathing, holding cold Water, but is now of no other Use than sometimes to express the same as a Refrigeratory, in the common way of Distillation.

Frigorifick, *Atoms*, or Particles, mean those nitrous Salts which float in the Air in cold Weather, and occasion freezing.

Frontales, are two Muscles that lie immediately under the Skin of the Head, or *Pericranium*, whose fleshy Fibres are inserted into the Eye-Brows; from thence they go straight up the *Os Frontis*, and are continued by a long and large *Aponeurosis* to that of the *Occipitales*; they adhere closely to the Skin of the Forehead, and pull it upwards when they act.

Frontale, is any external Form of Medicine to be applied to the Forehead, generally composed, amongst the Antients, of Coolers and Hypnoticks.

Frontated, in Botany, expresses the Leaf of a Flower growing broader and broader, and at last perhaps

perhaps terminating in a right Line, and is used in Opposition to *Cusped*, which is, when the Leaves of a Flower end in a Point.

Frontis Os, is a Bone of the *Cranium* in form almost round; it joins the Bones of the *Sinciput* and Temples, by the *Coronæ Sutura*, and the Bones of the upper Jaw by the *Sutura transversalis*, and the *Os Sphenoides* by the *Sutura Sphenoidalis*. It forms the upper Part of the Orbit, and has four *Apophyses*, which are at the four Angles of the two Orbits. It has two Holes above the Orbits, thro' which pass the Vein, Artery, and some Twigs of the first Branch of the fifth Pair. It has also one in each Orbit, a little above the *Planum*, thro' which a Twig of the *Optalmick* Branch of the fifth Pair of Nerves passes to the Nose. It has two *Sinus's* above the Eye-brows, between its two Tables; they are lined with a thin Membrane, in which there are several Blood Vessels and Glands, which separate a mucous Serosity that falls into the Nostrils. The Inside of this Bone has several Inequalities, made by the Vessels of the *Dura Mater*. It has two large Dimples made by the *anterior* Lobes of the Brain. Above the *Crista Galli* it has a small blind Hole, into which the End of the *Sinus longitudinalis* is inserted.

Fructiferous, signifies any thing that bears Fruit; from *fructus*, Fruit, and *fero*, to bear.

Frutex, is a Vegetable between a Tree and an Herb, but of a woody Substance.

Fucus, hath been used for a Colour or Paint to beautify the Face with, and belongs to the Class of Cosmetics.

Fuga Vacui, is an imaginary Abhorrence in Nature of a Vacuity:

but a more reasonable Philosophy has expunged such Phantasms.

Fuliginous Vapours, are any Exhalations of the Nature of Smoak, as *Fuligo* signifies Smoak. Tho' some make a needless Distinction between *Fuligo* and *Fumus*.

Fulmigation, is making one Body receive the Steam of another, and is done various Ways, and to different Purposes. And the Chymists use it for a Species of Calcination, when that Process is performed upon any Substance by the Steams of another; as Lead is reducible into a Calx by the Steam of Acids.

Fulmination. See *Detonation*.

Function, is the Office of any particular Part, to which it is by Nature fitted. The *Functions* or *Faculties*, are divided into Natural, Vital, and Animal; which see.

Fundalia, so *Libavius* says some Writers call the *Fæculæ*, or Sediments of any turbid Fluids.

Fundus Plantæ, the Bottom of a Plant. Botanists call that Part so where the stalk just meets and joins the root.

Fungus, is strictly a Mushroom, and used to express such Excrescences of Flesh as grow out upon the Lips of Wounds, with a Resemblance thereunto, or any other Excrescence from Trees or Plants not naturally belonging to them, as the Agarick from the Larch Tree, and *Auriculæ Judæ* from Elder.

Funiculus, is strictly a little Rope, but by Anatomists applied to some Parts having Resemblance thereunto in Texture, as the umbilical Vessels, twisted into the Navel-string.

Funicular, is also applied to a particular Opinion in Philosophy, by *Franciscus Linus*, where the Cohesion of Bodies is accounted for from a Property holdning them together, as in the Make of a Rope; but this hath been opposed and refuted by

by Mr. Boyle, in a Treatise wrote on Purpose.

Furcula. The same with *Clavicula*; which see.

Furfur, signifies properly Husk or Chaff, and therefore is used for Scurff or Dandriff that grows upon the Skin with some Likeness thereunto. *Hippocrates* frequently uses *πιλιδας*, *Furfurea*, to express a peculiar Sediment in the Urine like Bran; and *Galen*, with many since termed *πιλιδας*, *Furfuratio*, such dry scaly Eruptions of the Skin as are seen in Leprosies and saline scorbutick Habits.

Furnace, in Chymistry, is an Instrument contrived to receive the Fewel or Fire made Use of in its Operations, and to direct it to the Vessel including the Matter to be changed thereby: Of these there are various kinds, which are best learned by Inspection.

Furor, the same with *Mania*.

Furor Uterinus, is a particular Kind of Distraction that proceeds from Heat and Titillation in the Womb, which makes Females at certain times outrageous for coition.

Fusion, is the running of Metals into Fluids, and signifies melting of any thing. To understand this well, it is necessary to consider the Causes of Solidity and Fluidity. The Solidity, Hardness, or Force, by which the Parts of any Body resist Separation, arises from the mutual Cohesion of its component Parts; which Cohesion is but a necessary Consequence of the attractive Power residing in Matter. Now the attractive Force, as it is strongest at the Point of Contact, it is the Cause why the Cohesion of all Bodies is in Proportion to the Number of Points they touch one another in; so that those Particles which have least Solidity with relation to their Surfaces,

altho' they attract the least at Distance, yet when they touch, they cohere most intimately; but where the Cohesion is small, for the contrary Reason as in spherical Bodies, whose Superficies can only touch in a Point, their Particles easily give way to every Impulse; and whenever they are set in Motion, whether by Nature or Art, Fluidity takes place: and how this may be effected by Fire, 'tis not in the least difficult to conceive. Whilst the Particles of Fire by their Activity and Force, insinuate themselves into the Substance to be melted, they so divide and break it, that there is a much less Contact of Parts, and of Course a weaker Cohesion; and this Cohesion may still, by a Continuance of the same Cause, and further diminishing the Degree of Contact, be so far weakened, that it is not sufficient to keep the component Parts from rolling over one another, that is, from running into a Fluid.

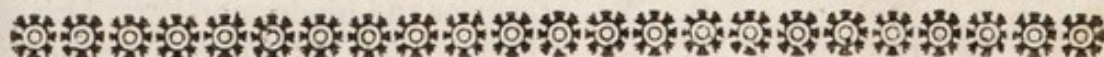
From the Rarefaction which is usual in the Fusion of these Substances, it is evident these Parts may be, and actually are divided and separated from one another by Fire: for unless the Fire gained Admission between their component Parts, so far as to force them into greater Distances from one another, and thereby lessen their Contacts, there could be no Reason assigned for the expanding themselves into a larger Space. For Experience teaches, that a Plate of Iron by being made red-hot, increases in all its Dimensions. The same is observable in calcining Copper.

From this Difference of Cohesion proceeds all that Variety we observe in the Fusion of Bodies: for such as have least Contact of Parts, soonest give way to the Fire; and some will melt away by the Warmth of a Vapour.

Vapour only, when others which have a stronger Contact, are not to be separated but with Difficulty. Upon this Account Vegetables very easily disunite, Minerals slower, and Metals slowest of all: And of the last, those wherein the Contact of Parts is least, as in Lead and Tin, most readily melt; but those which are most compact, as Gold and Silver, are not to be managed but by a violent Heat. Now if the Force of Cohesion was proportional to the Quantity of Matter, or to the Weight of Bodies, we might from Staticks account for all the Variety which occurs in Fusion; for by knowing the specifick Gravity of a Body, we should then know what Force is required to melt it. But because the same Quantity of Matter may be so variously disposed, that in one Body there shall be a much greater Contact than in another, tho' the Gravity be equal, or even less at the same time; therefore the Force of Cohesion cannot be estimated by Gravity: for Lead, altho' more ponderous than all other Metals except Gold, yet in the Fire is more easily melted than any other: So that it necessarily follows, that in this Metal there must be a less Cohesion or Contact of Parts, how much soever it may exceed others in the Quantity of its Matter.

Bodies, after Fusion, return again into a solid Mass, upon their removal

from the Fire, and the Cessation of the Motion which the Fire produced; because their Particles are brought nearer to one another by their attractive Force, and so compelled to unite. Such as consist of homogeneous and unalterable Parts, as Wax, Gums, and the purer Metals, recover their ancient Form: for when the same Texture of Parts remains in the whole Body, it must of Course re-assume the same Appearance when the separating Power ceases to act: but other Bodies, whose Parts with respect to Density and Surface are extremely different from one another, while some are carry'd off by the Force of Heat, and others are changed as to Figure and Position, must be forced to appear in another Form: for they cannot recover their original Phases, unless every Particle could reinstate itself in that very Situation it had before: which may be hinder'd infinite Ways, as may be easily experienced in heterogeneous Bodies. Therefore the Difference which is observed even in homogeneous Bodies, after Liquefaction, is no ways to be accounted for, but from the Changeableness of Surface in its Parts; for those Bodies whose Parts constantly retain the same Surfaces, never lose their Form; but others, by having the Surfaces of their Parts altered, have a different Texture, and put on another Appearance.



G

G *Alactophorous Ducts*, from *γάλα*, *Lac*, Milk, and *φέρω*, *duco*, to lead; are any Vessels that convey Milk. See *Lacteals*: whence also *Galactodes*, *γαλακτώδης*, by

the ancient Writers was applied to many things, as the Urine, &c. of a whitish or milkish Hue.

Galbanetum, is a Composition or Preparation of *Galbanum* for-

N

merly

merly prescribed, but now out of Use.

Galeated, is by Botanists given to such Plants as bear a Flower resembling an Helmet, as the Monks Hood, from *Galea*, an Helmet. Some also express the same thing by *Galericulate*, and *Cucullate*. See *Flower*.

Galenick Medicine, is that Practice of Medicine which conforms to the Rules of *Galen*, and runs much upon multiplying Herbs and Roots in the same Composition; tho' seldom torturing them any otherwise than by Decoction, in Opposition to Chymical Medicine, which by the Force of Fire and a great deal of Art, fetches out the Virtues of Bodies, chiefly Mineral, into a small Compass.

Gall. See *Bile*.

Gall-Bladder. See *Vesica Biliaris*.

Gallicus Morbus. See *Lues*.

Gallinaginis Caput. See *Caput Gallinaginis*.

Gamboidea, is a Name applied to Gamboge, with many other Distinctions, as the *Succus Indicus Purgans*, *Gummi Gammandrae*, &c. of which *Rolfinkius* gives the History; as also hath *Rudenius*, a German Physician, wrote a whole Book about it.

Ganglio, a Knot of Nerves, or where they seem to be tied together; it is the same as *Plexus*. See *Nerve*.

Garglion, is an Exsudation of nervous Juice, from a Bruise or the like, which indurates into a hard immovable Tumour.

Gangrene. See *Mortification*.

Gangareon, and *Gargulio*. See *Uvula*.

Gargarism, from *γαργαρίζω*, *colluo*, to wash; is a liquid Form of Medicine to wash the Mouth with.

Gas, is a Term used by *Van Helmont*, but in a very loose Manner, as when he calls the vital Principle in Man *Gas vitale*; applied also to mineral Sulphurs which occasion Damps; to Air, and to Water, which last he calls *Gas Salium*. If it has any determinate Signification, it is the same as Spirit, and means the most subtile and volatile Parts of any thing; as,

Gas Cerevisiae, is the spirituous Steam that flies off from Ale while it is in the Tun, or in the working as it is commonly called. And,

Gas Sulphuris, is the more spirituous Parts of Brimstone received by burning, into Water.

Gaster, *Γαστήρ*, *Venter*, the Belly. It is sometimes taken for the whole *Abdomen*, at others only for the Stomach, and sometimes for any other Cavity. Hence,

Gastrick Juice is the Juice of the Stomach. And,

Gastrick Vessels, those distributed to the same Part.

Gasterotomy, the Dissection of the Bowels, from *γαστήρ*, and *τέμνω*, *feco*, to cut.

Gasterocnemium, from the former, and *κνήμην*, *Tibia*, the Leg; signifies the whole Calf of the Leg; and hence its Muscles are called

Gasterocnemii, which are two, external and internal; the former is also called *Gemellus*, from its being as it were double. It has two distinct fleshy Originations, from the superior and hindermost Part of each Tubercle of the lower Appendage of the Thigh Bone, which in their Descent are each dilated into two small fleshy Bellies, the innermost of which is thickest and largest, having each a different Series of fleshy Fibres, and join to each other near where they make a broad strong Tendon, with narrowing itself, joins

joins with the great Tendon of the *Soleus*, four Fingers breadth above its Insertion to the *Os Calcis*. When this Muscle acts, the Foot is said to be extended or pulled backwards; which Motion of it is very necessary to walking, running, leaping, and standing on tiptoe, &c. Whence it is that those who walk much, that carry heavy Burdens, and who wear low-heel'd Shoes, have these Muscles larger than others. The Internal, called also *Soleus*, from its Figure resembling a Sole-fish, is placed under the external. Its external fleshy Part is cover'd with a transparent tendinous Expansion, which makes it appear of a livid Colour. It begins partly tendinous, chiefly from the hindermost Part of the upper Appendix of the *Fibula*, and back-part of the *Tibia*, that is below the Insertion of the *Subpopliteus*; and increasing to a large fleshy Belly composed of various Orders of fleshy Fibres, some of them underneath aptly expressing the Figure of the Top of a Feather, whose *Stamina* here being tendinous, join with the great Tendon, which is about a Finger's breadth long, and inserted to the superior and hindermost Part of the *Os Calcis*. The Foot, together with the Toes, being as it were a Leaver to the whole Body, ought therefore to be attended with Muscles of great Strength to extend it; and which is the Reason that these Muscles so much exceed their Antagonists.

Gelatinous, any thing approaching to the Consistence of a Jelly. Thus a Decoction of Bread in Water may be reduc'd into a Jelly, for the Use of the Sick.

Gemellus. See *Biceps*.

Gemini, are two Muscles of the Thigh which arise from the Protuberance of the *Ischium*, and are

inserted with the *Pyriformis* into the Dent at the Root of the great *Trochanter*.

Gemma, amongst Botanists, signifies the turgid Bud of any Tree, when it is beginning to bear.

Generation. See *Fætus*.

Generation, Parts of, proper to Men. These may be fitly divided into those which prepare and separate the Seed from the Blood, and those which convey it into the Womb. The first is done by three Sorts of Glands, which are the *Testes*, the *Vesiculæ Seminales*, and the *Prostata*. The second is the Office of the *Penis* or Yard. The *Testes* which prepare the principal Part of the Seed, receive their Blood from two long slender Arteries, which at their rise from the Sides of the *Aorta*, a little below the Emulgents, are extremely small, but immediately become bigger; the reason of which Mechanism, see under *Secretion*. As these Arteries run between the Duplication of the *Peritonæum*, to which they give some small Twigs, they pass out of the *Abdomen* at the Holes in the transverse and oblique Muscles, and march over the *Os Pubis*, within the Productions of the *Peritonæum* to the Testicles; but before they arrive, they divide each into two Branches, the largest of which are spent upon the Testicles themselves, and the two small ones upon the *Epididymes*. When the Blood has discharged itself of the Seed into the Testicles, it returns by the Veins, which rising in several Branches from the *Testes*, tend towards the *Abdomen*, in the Productions of the *Peritonæum*, the same way the Arteries came down. In their Progress their Branches frequently inosculate, and divide again till they come near the *Abdomen*, when they all unite in one

Trunk ; and therefore because of their Shape, are called *Corpora Pyramidalia*. In the *Abdomen* they receive some small Twigs from the *Peritonæum*. The right spermatick Vein opens into the *Vena Cava*, a little below the Emulgent ; but the left is always inserted into the Emulgent of the same Side, that it may not be obliged to cross the *Aorta*, whose Pulse would be apt to stop the Blood which returns from the Testicles very slowly, by reason of the narrow Orifice of the spermatick Arteries, and the largeness of the Veins. These Blood-Vessels have been called the *Vasa Præparantia*.

The *Testicles* have three Integuments, one common and two proper. The common is the *Scrotum*, which besides the Skin, (which is very thin and full of Blood-Vessels) Scarf-Skin, and *Membrana Adiposa*, (in this place likewise very thin, its Vesicles being empty of Fat) is composed likewise of many fleshy or muscular Fibres, by means of which the *Scrotum* is contracted, and is reckoned a Sign of Health. This muscular Lining of the *Scrotum* is by the *Greeks* called *Dartos*. The *Scrotum* is divided in the middle by a thin Membrane, which separates the two Testicles. The first of the proper Integuments is called *Tunica Vaginalis*, or *Elythroides*, being formed by the Dilatation of the Productions of the external Membranes of the *Peritonæum* : its internal Superficies is smooth, its external rough ; it contains the *Vasa Præparantia* and *Deferentia* ; it embraces loosely the whole Body of the Testicle, adhering to one end of the *Epididymis*. Upon the outside of this Tunicle runs a Muscle called *Cremaster*, from its Office of suspending the Testicles *κρημαίνω* so signifying : it rises from the Os

Pubis, and spreading its Fibres upon the *Elythroides*, it draws up the Testicles in the Act of Generation. The second is that which covers immediately the Testicles. It is called *Albuginea*, because of its white Colour. It is strong and thick, very smooth and equal. The Branches of the *Vasa Præparantia* are finely weaved upon it.

The Substance of the Testicles, which formerly was thought to be a Sort of Marrow, is nothing but the folding of several small and soft Tubes, disposed in such a manner, that if they could be separated from one another without breaking them, they might be drawn out to a great length. They run in short Traces from the *Tunica albuginea* to the Axes of the Testicles, being divided from one another by thin membranous Productions from the inner Side of the *Albuginea*. These Productions unite at the Axes of the Testicle, and form a Cover to some small Tubes which at one end of the Testicle pierce the *Tunica Albuginea*, and unite into one Canal, which by several turnings and windings upon the upper Part of the Testicles forms that Body which we call *Epididymis*, cover'd with a thin Production of the *Albuginea*. The same Canal continuing, and ascending, forms the Extremities of the *Epididymis*, from the *Vasa deferentia*, one from each *Epididymis*, about the Bigness of a Goose-Quill ; as they ascend within the *Tunica Vaginalis*, they make several short turnings and windings ; then they enter by the Holes of the transverse and oblique Muscles into the *Abdomen*, and marching over the *Ureters* between the backside of the Bladder and the *Rectum*, they grow larger as they approach the *Vesiculæ Seminales*, (which open into them) where

where they come close to one another; and growing again smaller and smaller, they pass thro' the *Prostatae*, and open into the *Urethra*, a little below the Neck of the Bladder, where each Orifice has a spongy Border, called *Caput Gallinaginis*, which hinders the involuntary running of the Seed. The Cavity of the *Vasa Deferentia*, before they enter the *Abdomen*, will hardly admit of a Hog's Bristle; as they increase, so likewise do their Cavities, which are tortuous, and obliquely contracted by their inner Coat, which is nervous, whiter and thinner than the external, which is composed of muscular Fibres. The Testicles have many *Lymphaducts*, which discharge themselves into the inguinal Glands. Their Nerves come from the *Intercostal*, and out of the Spine.

The spermatick Arteries carry the Blood from the *Aorta* to the Testicles, which separate that Part of it which is fit for Seed. The Veins carry back to the *Cava* what Blood remains after the Secretion of the Seed. The Seed is further purified in the *Epididymes*, and in Coition is carried by the *Vasa Deferentia* into the *Urethra*. As the narrow Orifices, and great Length of the spermatick Arteries, (which give time to the slow moving Particles of the viscous Seed to unite) are a clear Proof of what we have said concerning the Formation of the Humours to be discerned; so the Length of the Tubes which compose the Body of the Testicles, does not less evidently evince the Structure given of a Gland, under that Title: For the Particles which compose the Seed, being gross, all the smaller Particles of the Blood must enter the Tubes with them; and therefore that none but the Particles of

the Seed might arrive at the *Vas Deferens*, it was necessary that the Tube of the Gland should be long, having many smaller Branches, to convey off the lesser Particles, which were not to enter into the Composition of the Seed. Many of these Particles must be *Lymphatick*, because of the great proportion they bear in the Blood: and therefore we find that the Testicles, as well as the Liver, have a multitude of *Lymphatick Vessels*. The reason of the Length of the *Vasa Deferentia*, is, that the *Impetus* of the Seed at the *Caput Gallinaginis* might not be sufficient to dilate the Orifices of the *Vasa Deferentia*, but when assisted with the Compression of the surrounding Parts in Copulation.

The *Vesiculæ Seminales* are two in number, one on each side, situated between the Bladder and the straight Gut, tied to the one and the other by a Membrane of fleshy Fibres, which, in time of Coition, contracts and presses the *Vesiculæ*. They are covered with a pretty thin Membrane, upon which do creep many Branches of Veins, Arteries, Nerves, and Lymphaticks. Their external Surface resembles rather that of the Brains, than that of the Guts of a little Bird: They are about two Fingers breadth long, their broadest Part is not an Inch, from which they grow narrower by little and little to their End, which is next the *Prostatae*. They have two considerable Cavities divided into membranous Cells, which open distinctly by two Orifices which are in their small Extremities, into the two *Vasa Deferentia*, from which they receive the Seed which is separated in the Testicles, to be kept till Coition. The *Prostatae*, or *Corpus Glandulosum*, is a conglomerate Gland situated at the Neck of the Bladder, covered

with a Membrane made of muscular Fibres, as that of the *Vesiculæ*, and for the same Use. It is about the Bigness of a Walnut. The *Vasa Deferentia* pass thro' its Substance, which is vesicular and glandulous. The Glands (which like little Grains lie upon the Sides of the Vesicles) separate a clear and mucilaginous Humour, which lies in the Vesicles till Coition; then it is carried into the Beginning of the *Urethra*, by eleven or twelve excretory Ducts which open about the Orifices or the *Vasa Deferentia*. The Border of their Mouth is all spongy, to hinder a continual running of this Humour, which happens in a *Gonorrhœa*, when their Orifices are corroded by the morbid Matter which is thrust by the Elasticity of Air into the empty Ducts upon Coition.

The other principal Member of the Parts of Generation, is the *Penis*, or Yard, whose Shape and Dimensions are pretty well known. Its Skin, which is thin and without Fat, has a Reduplication, which makes a Hood to the *Glans*, or End of the Yard, called *Præputium*, or the Fore-skin. The small Ligament by which it is tied to the other Side of the *Glans*, is called *Frænum*. The use of the *Præputium* is to keep the *Glans* soft and moist, that it may have an exquisite Sense. The Substance of the Yard is composed of two spongy Bodies, called *Corpora Cavernosa*: They arise distinctly from the lower Part of the *Os Pubis*. A little from their Root they come close together, being only divided by a Membrane, which at its Beginning is pretty thick; but as it approaches the End of the Yard, it grows thinner and thinner, where the *Corpora Cavernosa* terminate in the middle of the *Glans*. The external Substance of these

spongy Bodies is hard, thick, and white. The internal is composed of small Fibres and Membranes which form a sort of loose Net-work, upon which the Branches of the Blood-Vessels are curiously spread. When the Blood is stopped in the great Veins of the *Penis*, it runs thro' several small Holes in the Sides of their Capillary Branches into the Cavities of the Net-work, by which Means the *Corpora Cavernosa* become distended, or the *Penis* erected. Along the under Side of the *Corpora Cavernosa*, there runs a Pipe called the *Urethra*, which is about twelve or thirteen Inches long; beginning at the Neck of the Bladder (from which it receives the Urine) it bends to the lower Part of the *Os Pubis*, and turning up to the Roots of the *Corpora Cavernosa*, is continued to the End of the Yard. The Sides of this Pipe are composed of two Membranes, and a middle spongy Substance like that of the *Corpora Cavernosa*, except at the End, which joins the Neck of the Bladder, where the Distance between the Membranes is small, and filled up with a thin and red glandulous Substance, whose excretory Ducts piercing the internal Membrane, pour into the Pipe a mucilaginous Liquor. The external Membrane is hard, close, and white: The internal, which lines the Cavity of the *Urethra*, is thin, soft, and of an exquisite Sense. The spongy Substance, which lies between the two Membranes, is about half a Line thick next to the *Corpora Cavernosa*, and one Line and a half round the rest of the Pipe. The Extremities of this spongy Substance are much thicker than in the Middle. That End next the *Prostatæ*, because of its Bigness, is called the Bulb of the *Urethra*, being about half an Inch thick.

thick, and divided in the middle by a thin Partition, as the *Corpora Cavernosa* are. The other End forms the *Glans* or *Balanus*, upon the Extremities of the *Corpora Cavernosa*. The Veins in the *Urethra* have Holes in their Sides, thro' which the Blood passes into the Cavity of the Net-work, in an Erection, as in the *Corpora Cavernosa*. On each Side of the Bulb of the *Urethra* there lies a small Gland, whose excretory Duct sloping forwards, pours into the *Urethra* a viscous and transparent Liquor, which defends it against the Acrimony of the Salts of the Urine. And on the opposite Side of the *Urethra*, upon its internal Membrane, a little nearer the *Glans*, there is another small Gland which has the same Office. At the other End of the *Urethra*, around the Crown of the *Glans*, where it joins the *Præputium*, is a Row of small Glands, like unto those of the *Cilia*, called *Glandulæ Odoriferæ*. They separate a Liquor which lubricates the *Glans*, that the *Præputium* may slip easily upon it. The Yard has a small Ligament, which arises from its Back a little Distance from its Root, which ties it to the upper Part of the *Os Pubis*, that it may not hang too low. It receives two Branches of Veins and Arteries from the *Hypogastrick Vessels*; besides others from the *Pudenda*. The two Veins unite near its Roots, and form one Trunk which runs along the upper Side of the Yard. It has two Nerves from the *Os Sacrum*, and several Lymphatics, which empty themselves into the inguinal Glands. The Yard has three Pair of Muscles: The first is the *Erectores*; they rise from the *Ischium*, a little below the Roots of the *Corpora Cavernosa*, they lie upon them, and are inserted into them.

The second are the *Acceleratores*; these rise from the Root of the *Urethra*; they have several Fibres, which join the Fibres of the *Sphincter Ani*. They lie upon the *Urethra*, betwixt the two former, and are inserted into the *Corpora Cavernosa*. The third Pair are the *Transversales*; they arise from the *Ischium* just by the *Erectores*, and run obliquely to the upper Part of the Bulb of the *Urethra*. When these Muscles act, they press the Veins upon the Back of the *Penis*, against the *Os Pubis*, which is the Cause of the Erection.

Generation is the Production of any thing in a natural way, which was not before in being: For when in any Parcel of Matter there is produced such a Concurrence of all those Accidents which are necessary and sufficient to constitute a determinate Species of things corporeal; it is then said a Body belonging to that Species is generated. So that no new Substance, but only a new essential Denomination, Modification, or Manner of Existence, is produced or generated. And when that Union of Accidents which denominates a Body generated, is destroy'd and dissolved, that Body losing its essential Modification, is said to be corrupted.

Generation Parts of, proper to Women. First appears the *Vulva*, or great Chink, situated below the *Os Pubis*, and covered with Hair. Above this there is a little Swelling made by some Fat under the Skin, which is called *Mons Veneris*. The *Labia*, or Lips of the great Chink, are only the Skin swelled by some Fat underneath. These being a little separated, the *Nymphæ* appear, one on each Side the Chink: They are two small Pieces of Flesh resembling the Membranes that hang un-

der the Throats of Pullets. In the Angle of the great Chink, next the *Os Pubis*, is the Extremity of the *Clitoris*, covered with a little Hood of the Skin, called *Præputium*. A little deeper, in the same Side of the *Vulva*, there is a little Hole, which is the Orifice of the Neck of the Bladder. On the opposite Side, next the *Anus*, are the *Glandulæ Myrtiformes*, situated in the *Fossa magna*, or *Navicularis*; and in this Angle of the Chink there is a Ligament called the Fork, which is torn in the first Birth.

The *Clitoris*, which is in the Fore-part of the *Vulva*, is a long and round Body, naturally about the Bigness of the *Uvula*. It lies within the Skin; nor does any Part of it appear outwardly, except its Extremity, which is covered with a Folding of the Skin made by the Union of the *Nymphæ*, called its *Præputium*. The Substance of the *Clitoris* is composed of two spongy Bodies, such as those of the *Yard*; they arise distinctly from the lower Part of the *Os Pubis*, and approaching one another, they unite and form the Body of the *Clitoris*, whose Extremity, which is of an exquisite Sense, is called *Glans*. The two spongy Bodies, before they unite, are called *Crura Clitoridis*; they are twice as long as the Body of the *Clitoris*. It has two Muscles, which arise from the Protuberance of the *Ischium*, and are inserted into its spongy Bodies. They erect the *Clitoris* in Coition, after the same manner that the Muscles of the *Yard* do erect the *Yard*. The *Clitoris* receives Veins and Arteries from the *Hæmorrhoidal* Vessels and the *Pudenda*; and Nerves from the *Incercostrals*, which are likewise distributed thro' all the Parts of the *Vulva*. Remark, that the Veins on the one Side of the *Vul-*

va communicate with those of the other Side, and so do the Arteries with one another.

The *Nymphæ* are spongy in their internal Substance, and full of Blood Vessels, and therefore they swell in Coition. They receive Vessels and Nerves as the *Clitoris*. Their Use is to defend the internal Parts from external Injuries, to increase Pleasure in Coition, to direct the Course of the Urine: and they are bigger in married Women than in Maids.

The *Hymen* is a circular Folding of the inner Membrane of the *Vagina*; which being broke in the first Copulation, its Fibres contract in three or four Places, and form what they call *Glandulæ Myrtiformes*.

A little beyond the *Clitoris*, in the Fore-part of the *Vulva*, above the Neck of the Womb, there is a little Hole, which is the Orifice of the *Urethra*. It is naturally so large as to receive a Probe as big as a Goose-Quill. The Length of the Neck of the Bladder is near about two Fingers Breadth. It has a little Muscle called its *Sphincter*, which embraces the *Urethra*, to hinder the involuntary running of the Urine: it joins the fleshy Fibres which are at the Orifice of the *Vagina*. Between this Muscle and the inner Membrane of the *Vagina*, there are several little Glands, whose excretory Ducts are called *Lacunæ*: They pour a viscous Liquor into the lower Part of the *Vulva*. These Glands are the Seat of a *Gonorrhœa* in Women, as the *Prostata* are in Men; and have the same Use as they have. They have been found all ulcerated in Women, who have had a *Gonorrhœa*.

The *Vagina*, or Neck of the Womb, is a long and round Canal, which reaches from the *Pudendum*

to

to the internal Mouth of the Womb. In Maids it is about five Fingers Breadth long, and one and a half wide; but in Women who have born Children, its Length and Bigness cannot be determined, because it lengthens in the time a Woman is with Child, and it dilates in the time of Birth. It lies betwixt the Bladder and the *Rectum*, with which last it is wrapt up in the same common Membrane from the *Peritonæum*: For this reason the Excrements come out sometimes by the *Vulva*, when this Intestine is wounded. The Substance of the *Vagina* is composed of two Membranes, of which the inner, which lines its Cavity, is nervous and full of Wrinkles and *Sulci*, especially in its Fore-part. It has three or four small Glands on that Side next the *Rectum*, which pour into it a viscous Humour in the time of Coition; of which we have spoken before. The Wrinkles of this Membrane are for the Friction of the *Balanus*, to increase the Pleasure in Copulation, to detain the Seed, that it run not out again, and that it may extend in the Time of Gestation. The external Membrane of the *Vagina* is made of muscular Fibres, which, as Occasion requires, dilate and contract, become long and short, for adjusting its Cavity to the Length and Bigness of the Yard. At its lower Part there is a Muscle of circular Fibres like a *Sphincter*; and under it on each Side the *Vagina* a net-like *Plexus* of Blood-Vessels, which with the Muscle, helps to straighten the Mouth of the *Vagina*, that it may grasp the Yard closely. The Neck of the Womb receives Veins and Arteries from the *Hypogastrick* and *Hæmorrhoidal* Vessels. Those from the *Hypogastrick* are dispersed in its upper Parts; and those from the *Hæ-*

morrhoidal in its lower Parts. These Vessels communicate with one another. It has Nerves from the *Os Sacrum*. Among other Uses, the Neck of the *Matrix* serves for a Conduit to the *Menstrua*, and for a Passage to the *Fœtus*.

The *Matrix*, or Womb, is situated in the lower Part of the *Hypogastrium*, betwixt the Bladder and the straight Gut. The *Os Pubis* is a Fence to it before; the *Sacrum* behind; and the *Ilium* on each Side. They form as it were a Basin for it; but because it must swell whilst Women are with Child, therefore they leave a greater Space in them than in Men: and for this Reason it is, that Women are bigger in the Haunches than Men. The Figure of the Womb is like a Pear, from its internal Orifice to its Bottom: 'Tis three Fingers long, two broad, and almost as much thick. In Maids its Cavity will contain a big Almond; but it changes both Figure and Dimensions in Women that are with Child: It presses the Bowels, and reaches to the Navel towards their Delivery, whilst at other times it does not pass the *Os Sacrum*. The Womb is covered with the *Peritonæum*. Its Substance is composed of fleshy Fibres, which are woven together like a Net, and they draw together and make several Bundles, which have several Directions for the better contracting of the Womb in the Expulsion of the *Fœtus*. The Spaces between those Fibres are filled up with thin and soft Membranes, which form an infinite Number of Cells, upon which the Blood-Vessels run, turning and winding frequently. Upon these Membranes, especially towards the Cavity of the Womb, there are several Glands which separate a Humour to lubricate

cate the Cavity of the Womb. The Bottom of the Womb grows thick, as it dilates ; so that in the last Months of Gestation, 'tis at least an Inch thick, where the *Placenta* adheres, because its Roots run into the Substance of the Womb. The Entry into the Cavity, or the Mouth of the Womb, joins the upper End of the *Vagina*, and makes a little Protuberance in the room of Lips, which resembles the Muzzle of a little Dog ; by some called *Os Tincae*. The Cavity of the Womb next its internal Orifice, being more contracted than it is near its Bottom, is called *Collum minus Uteri*. Its Surface is unequal, and among the *Rugæ* open several small Ducts, which discharge a glutinous Liquor to seal up the Mouth of the Womb in Gestation. These Ducts are affected in a *Fluor Albus*. The Veins and Arteries of the Womb are Branches of the *Hypogastrick* and *Spermatick* Vessels, whose larger Ramifications inosculate with one another. When the Term of Accretion draws to a Period, and the Blood which was wont to be spent in the Increase of the Body, being accumulated, distends the Vessels, it breaks forth once a Month at those of the Womb ; because of all the Veins of the Body, which stand perpendicular to the Horizon, these only are without Valves. This Evacuation is called the *Menstrua*, to which Men for the same Reason are subject ; but in them the redundant Humour passes off by Urine, and rarely by the *Hæmorrhoidal* Veins. Its Nerves come from the Intercostals, and from those which come from the *Os Sacrum*. There are also several Lymphaticks upon its Outside, which unite by little and little into great Branches, and discharge themselves into the Reserva-

tory of the Chyle. All the Vessels of the Womb creep upon it by many Turnings and Windings, that they may not break when distended. It is tied by two Sorts of Ligaments ; by two broad, called *Ligamenta lata* ; and by two round, called *Ligamenta rotunda*. The two broad Ligaments are only a Production or Continuation of the *Peritonæum*, from the Sides of the Womb. For their Largeness and Fissure, they are commonly compared to the Wings of a Bat, and therefore called *Vespertilionis Alæ*. The *Ovarie* are fastened to one End of them, and the *Tubæ Fallopianæ* run along the other. The two round Ligaments arise from the fore and lateral Part of the Bottom of the Womb, and pass, in the Production of the *Peritonæum*, thro' the Rings of the oblique and transverse Muscles of the *Abdomen* to the *Os Pubis*, where they expand like a Goose-Foot, and are partly inserted into the *Os Pubis*, and partly continued or joined to the *Musculus Membranosus*, or *Fascita lata*, on the upper Part of the Inside of the Thigh ; and from thence comes the Pain that Women big with Child feel in this Place. The Substance of these Ligaments is hard, but covered with a great Number of Blood-vessels ; they are pretty big at the Bottom of the Womb, but they grow smaller and flatter as they approach the *Os Pubis*.

The *Spermatick* Vessels in Women are four, as in Men ; they differ only in this, that they are shorter, that the Artery makes several Turnings and Windings as it goes down ; that it divides into two Branches, of which the smallest goes to the *Ovarium* ; the biggest divides into three more, of which one is bestowed upon the Womb, another upon

upon the *Vagina*, and the third upon the Ligaments of the Womb, and *Tubæ Fallopianæ*. 'Tis the same as to the Veins. The *Ovaria* are tied about two Fingers distance from the Bottom of the Womb by the *Ligamenta lata*. They are fixed to the *Peritonæum* at the *Iliæ*, by the spermatick Vessels. They are of an oval Figure, a little flat upon their upper Part, where the spermatick Vessels enter. The *Ovaria*, or Testicles are half as big as Mens are: Their Surface is unequal and wrinkled in old Women, but smooth and equal in Maids. They are covered with a proper Membrane, which sticks close to their Substance; and with another, common from the *Peritonæum*, which covers all the spermatick Vessels. Their Substance is composed of Fibres and Membranes which leave little Spaces, in which there are several small Vesicles, round and full of Water; and which being boiled, hardens like the White of an Egg. They have each of them two proper Membranes, upon which there are several small Twigs of Veins, Arteries, and Nerves. These Vesicles are called Eggs, and they are of a different Size and Number in Women of different Ages. It has been observed in Cows, that such of them as are impregnated after Copulation, are contained or covered all over with a yellow Substance, which has a small Hole in its Side thro' which they are thrust when they fall into the *Tubæ Fallopianæ*. Besides the spermatick Vessels, the *Ovaria* have Nerves from the *Intercostals* and *Lymphaticks*, which discharge themselves into the common Receptacle.

The *Tubæ Fallopianæ* are situated on the right and left Side of the Womb. They rise from its Bottom

by a narrow Beginning, and they dilate in Form of a Trumpet to the Extremities, where they are contracted again into a smaller Orifice, from whose Circumference they dilate into a pretty broad Membrane, which looks as if it were torn at the Edges, and therefore is call'd *Morsus Diaboli*. Their Cavity, where they open into the Womb, will scarcely admit of a Hog's Bristle; but at its widest Part it will take in the End of one's little Finger. Their Substance is composed of two Membranes, which come from the external and internal Membranes of the Womb. The *Tubes* are about four or five Fingers Breadth long, they have the same Veins, Arteries, Nerves, and Lymphaticks, as the *Ovaria*.

In the Act of Generation, the Pleasure is so great, as to alter the Course of the Blood, and animal Spirits, which then move all these Parts that before lay still. The *Clitoris* is erected, which by its exquisite Sense affords a great deal of Delight. The Glands about the Neck of the Womb being pressed by the swelling of the neighbouring Parts, pour forth a Liquor to facilitate the Passage of the *Penis*, and to increase the Pleasure. The Neck of the Womb contracts and embraces closely the Yard; the Fibres of the Womb contract and open its Mouth, which at other times is extremely close, for the Reception of the spirituous Part of the Seed; and the Branches of the spermatick Artery which runs upon the *Ligamenta lata*, between the *Ovaria* and *Tubæ Fallopianæ*, being distended with Blood, contract and pull the Extremities of the *Tubes* to the *Ovaria*, for carrying the Seed to them. The Seed impregnates the Egg, which from being transparent, becomes

comes opake some time after; 'tis covered with a thick and yellow Substance, which presses it on all Sides, and thrusts it out thro' a little Hole in its Middle; so it falls into the Orifices of the *Tubes*, which dilate sufficiently for its Passage into the Womb. Some, partly considering the Closeness of the Mouth of the Womb, and partly the Thickness of the Membranes of the *Ovaria* and *Ova*, do judge it impossible for the Seed to pass this way; therefore they think it is taken up by the Veins which open in the Cavity of the *Vagina* and *Matrix*, where circulating, it ferments with the Mass of Blood; from whence come all the Symptoms which appear in Conception. It enters and impregnates the Egg by the small Twigs of Arteries which are upon its Membranes. This Fermentation swells the Membranes of the *Tubes*, opens the Cavity of the Womb, and makes every thing ready for the Reception of the Egg. See *Fœtus* and *Conception*.

Geniculi, are the Knots which appear in Herbs; and therefore Botanists call those so marked *Geniculate Plants*.

Genioglossi, is a Pair of Muscles proceeding inwardly from the Forepart of the lower Jaw under another Pair called *Geniohyoides*, and enlarging themselves, are fastened into the Basis of the Tongue. These serve to pull the Tongue forward, and to thrust it out of the Mouth; thus called from *γένυς*, *Mentum*, the Chin, and *γλῶσσα*, *Lingua*, the Tongue.

Geniohyoidæus, is a Muscle of the *Os Hyoides*, which with its Partner is short, thick, and fleshy, arising from the internal Parts of the lower Jaw-bone, called the Chin; and dilating themselves are soon lessened

again, and inserted into the superior Part of the Fore Bone of the *Os Hyoides*. These pull upwards and forwards the *Os Hyoides*, and assist the *Genioglossi* in thrusting the Tongue out of the Mouth; from *γένυς*, *Mentum*, the Chin, the Greek *ὑψαλον*, and *εἶδος*, *Forma*, Shape.

Genital, is applied to any thing that concerns Generation, and particularly to the distinct Parts of Males and Females.

Genius, is variously used; but in Physick and Medicine, chiefly to express the particular Nature of any Body or Distemper.

Gentilitious, is by some used in the same Sense as Hereditary, for Diseases which are propagated from Parents to Children.

Genus, is a Term more used in Logick than Physick: however, in natural Philosophy some make three *Genera Generalissima*, which are Minerals, Vegetables, and Animals; and Botanists range Plants under certain *Genus's* or *Genera*, wherein all agree in some common Properties.

Germen, is the Bud of any Plant. Whence

Germination, is the growing or sprouting out of any Vegetables.

Gestation, is the Time of a Woman's going with Child; from *gesto*, to bear.

Ghittagemen, a Name given by some Writers to Gamboge.

Gialappa and *Gialapium*, are by some Authors used for Jallap.

Gibbous, from *gibbus*, humpback'd; is any Protuberance or Convexity having Resemblance thereunto.

Gilla, is an Arabick Word for Salt; but now used particularly for the emetick Salt of Vitriol.

Gingivæ, the Gums, are a hard sort of Flesh formed by the Union of

of two Membranes, one of which is a Production of the *Periosteum*, and the other of the internal Membrane of the Mouth. They are set about the Teeth, to keep them firm in their Sockets.

Ginglymus, is a Sort of Articulation when a Bone both receives and is received; and the Property of this Sort of Articulation is to admit only of the Motions of Flexion and Extension. It is called by Mechanics, *Charnel*, and it is commonly used in Hinges. Of this Articulation there are three Sorts. The first is when the End of a Bone has two Protuberances, and one Cavity; and the End of a Bone which is articulated with it has two Cavities and one Protuberance; as the *Humerus* and the *Ulna*. The second is when a Bone at one Extremity receives another Bone, and at its other Extremity is received by the same Bone, as the *Radius* and *Ulna*. The third Sort is when a Bone at one End receives another Bone, and at the other End is received by a third Bone, as the *Vertebrae* do.

Given. See *Data*.

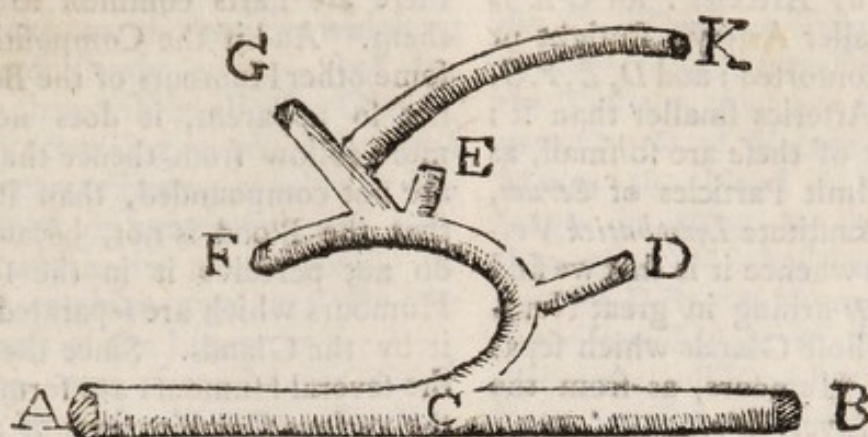
Gland. All the Glands of a human Body are by Anatomists reduc'd to two Sorts, *viz.* Conglobate and Conglomerate. A conglobate Gland is a little smooth Body, wrapped up in a fine Skin, by which it is separated from all the other Parts, only admitting an Artery and Nerve to pass in, and giving way to a Vein and excretory Canal to come out. Of this Sort are the Glands in the Brain, the *Labial* Glands, and *Testes*. A conglomerate Gland is composed of many little conglobate Glands, all tied together, and wrapped up in one common Tunicle or Membrane. Sometimes all their excretory Ducts unite and make one common Pipe, thro' which the Liquor of all of

them runs, as the *Pancreas*, and *Carotides* do. Sometimes the Ducts uniting, form several Pipes, which only communicate with one another by cross Canals, and such are the Breasts. Others again have several Pipes, without any Communication with one another; of which sort are the *Glandulae Lachrymales*, and *Prostatae*. And a fourth Sort is, when each little Gland has its own excretory Duct, thro' which it transmits its Liquor to a common Bason, as the Kidneys.

The Antients thought that the Glands were Cisterns which contained certain Liquors, by which the Blood being fermented, threw off the Humours refin'd in the excretory Ducts. But as these Ferments must mix with the Blood, so they must be exhausted and carried off by the Blood into Veins. And because all the Liquors in the Body are separated from the Blood, there must be another Ferment to separate more: But this second Ferment is liable to the same Fate as the first; and therefore there must be an infinite Series of Ferments in the Body, which is absurd. If it should be said, that the Ferments are not carried off with the Blood, they must be stopped by the Structure of the Glands: But then there will be a Secretion without a Ferment, which is now the common Opinion. Some think the Glands are Tubes, whose Orifices differing in Figure, admit only Bodies of similar Figures to pass thro' them. But this Opinion is demonstrably false: for besides that Liquors are susceptible of all Figures, and that Bodies, of any Figure, and a lesser Diameter than that of the Gland, will pass thro'; and that even a Body of a similar Figure, and equal Diameter with that of the Orifice of the Glands, may

may be presented innumerable ways, and not be able to pass thro' whilst there is only one way it can pass: all the Vessels in the Body are Conical or Cylindrical, and consequently there is no difference in the Figure of their Orifices. For the Pressure of a Fluid being always perpendicular upon the sides of the Vessel that contains it, and equal at equal Heights of the Fluid, if the Sides are soft and yielding, they must be equally distended; that is to say, a Section perpendicular to the Axis of the Vessel must be a Circle, and consequently the Vessel be either Cylindrical or Conical. This is agreeable to the Accounts of the nicest Anatomists, who tell us that a Gland is nothing else but a Convolution of small Arteries, whose last Branches are Cylindrical, or, which is the same thing, Part of an infinitely long Cone. A Gland therefore being nothing but a Branch of an Artery, whose farthest Extremity becomes the excretory Duct of the Gland, it is next to be known how such a Structure can separate from the Blood only some parts of it; and how different Glands may separate different parts of the Blood. If such a Fluid is to be drawn off as consists of the smallest Particles of the Blood, let that Orifice of the Gland, which is inserted into the Artery of which it is a Branch, be so small as to admit only the smallest Particles of the Blood; then these, and these only will enter this Gland, and the Fluid which passes out at the other Extremity of the Tube, or the excretory Duct, must be such as is required. If the Particles of the Blood, which are of the next Size or Magnitude, are required to be separated, let the Orifice of the Gland be so big as to receive those second Particles,

but small enough to exclude all bigger Particles; then these second Particles, together with the first or smallest, will enter the Gland: but because the Liquor to be secreted is to consist only of the second Sort of Particles, that is, the second Sort of Particles only are to flow out at the Extremity of the Tube, which is the excretory Duct, therefore we are to suppose, that this Gland, (which is only a Branch of an Artery, and differs in nothing from a common Artery, but in the Narrowness of its Channel) has Branches which are big enough to receive the smallest Particles only, and carry them off into the Veins: so that as both sorts of Particles move together along the Gland, the smallest Particles will pass off thro' its Branches, and a Fluid consisting chiefly of the second sort of Particles, will arrive at the excretory Duct. Thus the Number of Branches may be so great as to draw off most of the smallest Particles, before the second Sort of Particles arrive at the excretory Duct; so the Liquor to be secreted, may consist of both these Sorts of Particles mix'd together in any Proportion, according to the Number of Branches. If a Fluid consisting of a third Sort of Particles, larger than either of the former, is to be secreted, the Orifice of the Gland must be just big enough to admit such Particles, and none bigger; and the Branches of the Gland must be small enough to exclude the biggest Particles, and big enough to receive the lesser: and according as the Number of Branches is either greater or smaller, the Fluid which runs out at the excretory Ducts, will consist either of the largest Particles, or of all together mix'd in any Proportion. And thus we may understand how



a Liquor thicker than the Blood, may be strained off from the Blood, if the Orifice of the Gland be so big, as to admit Particles of any Sizes, and the Branches so numerous as to draw off the thinner Parts before the thicker arrive at the excretory Duct.

But this may be better illustrated by the following Diagram: Suppose *AB* to be a small evanescent Artery, and that the Particles of the least Size were to be separated from the rest. From the Side of the Artery let the Tube *CK* arise, whose Orifice at *C* is such as is capable of admitting Particles of the least Size, together with the aqueous Fluid; these therefore will be separated from all the other Particles of the Blood, and the Tube *CK* being a Cylinder, they will pass to its further End *K*, which is supposed to be the excretory Duct of the Gland. If the Quantity of the aqueous Fluid, separated with the least Particles, must be diminished; that such a Fluid as is requisite may pass through the excretory Duct *K*, from the Tube *CK*; you must imagine that several other smaller Canals go out, as *D*, *E*, *F*, and *G*, whose Orifices are so small, that they admit no other Particles, besides those of

the aqueous Fluid, to pass thro' them: and therefore as the least Particles, together with the aqueous Fluid, pass along the Tube *CK*, the aqueous Fluid must constantly be diminished; and the Quantity of the least Particles still remaining, can pass no where but at the excretory Duct *K*. And this Diminution of the aqueous Fluid will always be according to the Number of Canals *D*, *E*, *F*, *G*, that is, in Proportion to the Length of the Tube *CK*. And therefore as the Gland is longer or shorter, so the more or less aqueous Fluid will pass thro' the Orifice of the excretory Duct *K*; and consequently the secreted Fluid upon this Account be thicker or thinner. If Particles of a middle Size are to be drawn off, let the Orifice at *C* be just big enough to admit those Particles, and not any bigger. These Particles with the aqueous Fluid, will pass the Orifice *C*; but if the Canals *D*, *E*, *F*, *G*, are big enough to receive all the other Particles, and too little to admit those to be separated, they must arrive at the excretory Duct *K*, with what Proportion of lesser Particles is required. And thus any Particles may be drawn off either by themselves, or mixed with any

any other in any Proportion ; and this only by Arteries : for *C K* is only a smaller Artery, straight or spiral, or contorted ; and *D, E, F, G,* are again Arteries smaller than it ; and if any of these are so small, as only to admit Particles of *Serum*, they will constitute *Lymphatick* Vessels ; from whence it is that we find *Lymphaducts* arising in great Numbers from those Glands which separate thick Humours, as from the Testicles, Liver, &c.

After this Manner the several Humours in the Body may be separated by Glands from the Blood, which must either be composed of so many Humours as are separated from it : or else it must contain a few Principles, which mixed all together, form the Blood, and which variously combined form the different Humours which are drained from it : as a few Rays of Light, of different Refrangibilities, mixed all together, produce a white Colour, but variously combined, exhibit all imaginable Variety of Colours. It is not at all probable, that the Blood, in which we discern but two distinct Parts should be composed of near thirty simple Humours ; for so many do the Glands secrete from it. Nor is it agreeable to that Simplicity which Nature constantly affects in all her Operations. The Principles of all natural Bodies are said not to exceed five ; and how prodigious is the Variety that results from their different mixtures and Modifications ? If we suppose likewise but five Principles, or different Particles in the Blood, their Combinations alone, without different Modifications and Proportions, will yield near as many different Humours as are separated from the Blood. And it is Matter of Fact, that Urine, Sweat, Tears, Spit, and Milk, are compound

Liquors, and that in each of them there are Parts common to all of them. And if the Composition of some other Humours of the Body is not so apparent, it does not the more follow from thence that they are not compounded, than it does that the Blood is not, because we do not perceive it in the several Humours which are separated from it by the Glands. Since therefore the several Humours are formed by the various Combinations of a few Particles which compose the Blood, and that each Humour is secreted by Glands, placed for the most part in some one Part of the Body, as the Gall which is separated from the Liver, and the Urine in the Kidneys, the Particles of the Blood must fall into such Combinations as are fit to form Gall at the Liver, Urine, at the Kidneys, and so of the others ; otherwise the Glands could never separate from the Blood such Humours. And as all the Humours are composed of a few different Particles, the greater will be the Number of Particles combined to form Bile ; and the greater Quantity of Bile will be secreted, the fewer there are of all other Combinations at the Liver. Such Combinations therefore as are fit to form the Humours proper to pass thro' the Glands, where these Combinations are formed, being there only requisite, will be there most numerous ; and all others being there less requisite or useless, will be there less numerous. And therefore where ever the Particles of Blood are most dissolved, there will be placed such Glands as separate Humours which consist of the most simple Combinations, or of Particles which do the most easily combine ; and at the greatest Distances from these, will be situated the Glands

Glands which secern Humours consisting of the most compound Combinations, or of Particles which do the most slowly unite. And between these will be all other Glands, which according to either Extreme will separate Humours more or less combined, or compounded of Particles which do more quickly or slowly combine together. By the Thinness of the Liquor in the *Pericardium*, and of the Liquor which passes thro' the Kidneys, the Particles of the Blood seem to be most dissolved at and about the Heart. Here we not only find the Effects of this Dissolution in the Secretions, but likewise the Cause of it, the Force of the Air in Respiration breaking the Globules of the Blood; which Force is demonstrable to exceed the Pressure of 100 Pounds weight upon the Surface of the Lungs. Nor is it evident only from the Causes and Effects, that the Blood is here most dissolved, but likewise from the Methods which Nature takes to prevent the Effects of this Dissolution, in some particular Places at a little distance from the Heart: for the Bile and Seed being thick Humours, composed of Particles which combine but slowly together, and it being requisite that they should be secerned where the Liver and Testicles are placed; Nature has made Use of particular Contrivances, to give the Particles which were to form those Humours, more Time to combine, than they could have had otherwise, being so near to the Heart. For the Formation of the Bile she has contrived the *Vena Porta*, and the Spleen; thro' the first the Blood moves near 200 times slower, and thro' the last altogether as much, than otherwise it would have done. And that the Particles which form the Seed might have time to combine, the Orifices

of the spermatick Arteries are contracted; and they likewise arise from the *Vena Cava*, a little below the Emulgents, at a great Distance from the Testicles, contrary to the common Course of Nature; by which Means the Blood is 150 Times longer in going to the Testicles, than otherwise it had been. At the greatest Distances from the Heart, the viscous Liquor of the Joints is secerned; and some Liquors, whose Parts require no Combination, as the *Lympha*, may be secerned any where. All these different Combinations, which form so many distinct Fluids, arise from an attractive Power in the Parts of Matter, which tho' it be equally diffused thro' the whole Mass, yet according to the different Densities of Particles, and the Figures of their Parts, some sorts of Particles would be soon united, while others require a longer time to be joined together; some will cohere more firmly than others, and Particles of one kind will have a greater Tendency to unite with those of another Sort, in a certain Portion of their Surface than in any other. See *Attraction* and *Animal Secretion*. Dr. Keil gives the following List of the different sorts of Glands.

- 1 *Cerebri.*
- 2 *Plexus Choroides.*
- 3 *Sebaceæ.*
- 4 *Meatus Auditorii.*
- 5 *Ciliares.*
- 6 *Lacrhymales.*
- 7 *Humorem Aqueum*
- 8 *Crystallinum*
- 9 *Vitreum*
- 10 *Atrum Choroidis*
- 11 *Nasales.*
- 12 *Buccales, Labiales, Palatinae.*
- 13 *Parotides, Maxillares, Sublinguales.*
- 14 *Tonsillarum.*
- 15 *Oesophagi.*
- 16 *Asperæ Arteriæ.*
- 17 *Pericardii.*

- 18 *Mammarum.*
- 19 *Ventriculi.*
- 20 *Intestinorum.*
- 21 *Pancreatis.*
- 22 *Hepatis.*
- 23 *Vesicæ Fellis.*
- 24 *Renum.*
- 25 *Renales.*
- 26 *Ureterum.*
- 27 *Vesicæ Urinariæ.*
- 28 *Urethræ.*
- 29 *Testiculorum.*
- 30 *Prostatarum.*
- 31 *Uteri.*
- 32 *Vaginæ.*
- 33 *Lymphaticæ.*
- 34 *Pinguedinales.*
- 35 *Medullares.*
- 36 *Artuum.*
- 37 *Cutis Milliarei.*

Glandulæ Lachrymales. See *Carrunculæ Lachrymales*, and *Eye*.

Glandulæ Myrtiformes. See *Generation Parts of*, proper to *Women*.

Glandulæ Odoriferæ. See *Generation Parts of*, proper to *Men*.

Glandula Pituitaria. See *Brain*.

Glandulæ Renales. See *Capsulæ Atrabiles*.

Glandulæ Sebaceæ. See *Ear*.

Glandulosum Corpus. See *Prostatæ*.

Glans. See *Generation Parts of*, proper to *Men*.

Glass, an artificial Substance made by fusing fix'd Salts, and Flint or Sand together, with a vehement Fire. It is poisonous when taken internally, unless it be fine ground, because the sharp Points of it prick, tear, and wound the Intestines, causing Inflammation, and in time a Gangrene or Mortification therein. But when reduced to an impalpable Powder, its internal Use is said to be very safe, and attended with no ill Consequence.

Glaucoma, from *γλαυκός*, *Cæcus*, is a Fault in the Eye, which changes the crystalline Humour into a greyish Colour. *Glaucofis* is

the same; and both in general signify a Change of Colour in the Eye without Detriment of Sight, and therein differ from what is commonly understood by Suffusion. *Γλαυκός* is also by some apply'd to a whitish Urine, that hath Films in it like transparent Horn.

Glene, *γλήνη*, strictly signifies the Cavity or Socket of the Eye; but by some Anatomists is also used for that Cavity of a Bone which receives another within it; hence

Glenoides, from the former, and *ἔδος*, *Forma*, Shape; are two Cavities in the lower Part of the first *Vertebræ* of the Neck.

Gliscere, to kindle, properly as Fire does; but by Physical Writers is sometimes apply'd to the natural Heat, and increase of Spirits; and by others, to the Exacerbation of Fevers, which return periodically.

Globules, are such small Particles of Matter as are of a globular or spherical Figure; as the red Particles of the Blood, which swim in a transparent Serum, and are easily discover'd by the Microscope; and it is pleasant to see how these will attract one another when they come within a due Distance, and unite like the Spheres of Quicksilver.

Globulus Nasi, is the lower cartilaginous moveable Part of the Nose.

Glottis, from *γλῶσσα*, *Lingua*, the Tongue, is that Chink of the *Larynx* that lies at the Root of the Tongue, and which is cover'd by the *Epiglottis*.

Glutæus, from *γλυτός*, *Nates*, the Buttock. There are three Muscles of this Name which extend the Thigh; the first is *Glutæus major*, or the greater, which arises semicircularly from the *Os Coccygis*, the Spines of the *Sacrum*, the Spine of the *Ilium*, and from a strong Ligament that runs between the *Sacrum* and Tubercle of the *Ischium*; and descending, it

is inserted into the *Linea aspera*, four Fingers breadth below the great *Trochanter*. The *Medius*, or the Middle arises from the Spine of the *Ilium* under the former, and is inserted into the superior and external Part of the great *Trochanter*. And the *Minor*, or the lesser, arises from the lower Part of the external Side of the *Ilium*, under the former, and is inserted at the superior Part of the great *Trochanter*.

Gnidius, is applied by *Hippocrates* and others since, to some medicinal Precepts wrote in the Island of *Gnidos*. Bay-berries also, or somewhat near thereunto, are by some called *Cocci Gnidii*, from their Plenty in that Island.

Goldbeater's Skin, is the *intestinum rectum* of an Ox, which Goldbeaters lay between the Leaves of their Metal while they beat it, whereby the Membrane is reduced thin, and made fit to apply to Cuts, or small fresh Wounds, as it is now the common Practice.

Gomphosis, from *γομφω*, *Clavum impingo*, to drive in a Nail, is a particular kind of Articulation, like the driving a Nail into any thing, as the *Molares* are into the Bones of the Jaws; and hence

Gomphosis, is a Distemper of the Teeth, which makes them loose, and ready to drop, according to *Dioscorides*; but *Hoffman* justly enough changes that Term into *ἀγομφίασις*; the privative Particle expressing that Defect.

Gonagra, from *γόνυ*, *Genu*, the Knee, and *ἀγρέω*, *cipio*, to take, is the Gout in the Knee.

Gonorrhæa, from *γονή*, *Genitura*, or *Semen*, the Seed, and *ῥέω*, *fluo*, to flow; antiently used for any involuntary Emission of Seed, but now only for a weeping of Matter from ulcerated Glands. The *Prostate* are the Seat of it in Men, as the *Lacunæ* are in Women; for which see

the Parts of *Generation* proper to both Sexes. Its Cure consists in cooling and deterging, with Diureticks and Balsamicks.

Gonorrhæa Cordata. See *Chordæ*.

Gout: This is a Distemper better known than understood. Dr. *Keil* says, that the equal Celerity of the Particles of the Blood in the Extremities, is likewise the Reason why the Concretions of the Gout are formed there; unless by frequent Debauches or Decay of Nature, the Motion of the Blood becomes so languid, that these Particles easily attract one another in the Blood-Vessels of the Bowels, where the Motion of the Blood is also very slow: And then such Remedies as warm and increase the intestine Motion of the Blood, and thereby disturb the Attraction of the gouty Particles, relieve the Bowels, and send the peccant Matter back again to the Extremities. But on this Subject I have ventured to publish some Thoughts in an Essay annexed to the Second Edition of the Explanations of *Sanctorius's Aphorisms*, and which was before promised under this term in the first Edition of this *Lexicon*.

Gracilis, is a Muscle of the Leg, thus called from its slender Shape. It arises partly tendinous, and partly fleshy, from the *Os Pubis* internally, between the first and second Heads of the *Triceps*; and in its Descent in the Inside of the Thigh, it grows narrow, and becomes tendinous, a little below the *Sartorius*, and is so inserted into the *Tibia*. It assisteth in bringing the Thigh and Leg inwards.

Gramineous Herbs, amongst Botanists are such as have a long narrow Leaf, and no Foot-stalk: And these are reckoned *Fruментaceous*, whose Seed is used for Food, either in Bread, Drink, or Broth, such as Wheat, Rye, Barley, &c. or not *Fruментaceous*, more properly called Grasses, which

have an hollow jointed Stalk, not branched, and a staminous Flower.

Granivorous, from *Grana*, Corn, and *voro*, to devour, are those Animals which feed upon Corn, or any other Seeds.

Granulation, in Chymistry, signifies pouring of melted Metal into cold Water, so as it may granulate, or congeal into small Grains. It is generally done thro' a Colander, or a Birchen Broom. Gun-powder, and some Salts, are likewise said to be granulated, from their Resemblance to Grain, or Seed.

Gravida, a Women is said to be so whilst she goes with Child.

Gravity, and as some call it, the *Vis Centripeta*, is that Quality by which all heavy Bodies tend towards the Centre of the Earth, accelerating their Motion the nearer they move towards it. About the Cause of this wonderful and universal Affection of Matter, there have been endless Conjectures: But a true Philosophy, that teaches what is not within our Capacities, as well as what is knowable, has shewn this to be unsolvable by any philosophical Hypothesis, and resolved it into the immediate Will of the Creator. Of all Bodies considered within the Confines of any Fluid, there is a twofold Gravity, True and Absolute; and Apparent, Vulgar or Comparative. Absolute Gravity is the whole Force by which any Body tends downwards; but the Relative or Vulgar is the Excess of Gravity in one Body above the specifick Gravity of the Fluid, whereby it tends downwards more than the ambient Fluid doth. In reference to absolute Gravity, the Parts of all Fluids and all Bodies do really gravitate in their proper places, and therefore by their joint Weights do make the Weight of the whole: For every heavy Whole is a heavy Body, as we find in

Vessels filled with all Kinds of Liquors; and the Weight of any whole is equal to, because compounded of, the Weight of all its Parts. The latter kind of Gravity is such, that in reference to it Bodies do not gravitate in their Places; or rather do not, when compared with one another, pre-gravitate; but by hindering one another in their mutual Endeavour to descend, do remain in their proper Places, all one as if they were not heavy at all. Those things which do not pre-gravitate in the Air, Water, &c. the Vulgar take to have no Gravity; and only judge those to be heavy Bodies which they see pre-gravitate or descend, because they cannot be supported by the ordinary gravitation of the Fluid, or by its Pressure all Manner of ways. So that the Notion of Weight amongst the Vulgar, is only the Excess of any Body's Weight above that of Air: And consequently they account those things to be light, which being less heavy than Air, are supported by it, or buoy'd up in it; whereas those comparatively light Bodies are not so really, since *in vacuo* it is found by Experiment, that they descend as fast as other heavy Bodies do in Air.

The Properties of Gravity are thus enumerated: 1. That all Bodies descend towards a Point, which either is, or is very near to, the Centre of Magnitude of the Earth and Sea, about which the Sea forms itself into a spherical Surface; and the Prominences of the Land, considering the Bulk of the whole, differ but insensibly therefrom. 2. This Point, or Centre, is fixed within the Earth, or at least hath been so ever since we have had any authentick History: For a Consequence of its shifting, tho' ever so little, would be the overflowing of the low Lands on that Side of the Globe

Globetowards which it approached. And this it is thought would well account for the universal Deluge, to have the Centre of Gravitation removed for a time towards the middle of the then inhabited World: For the Change of Place but the 2000th Part of the *Radius* of our Earth, would be sufficient to lay the Tops of the highest Hills under Water. 3. In all Places equidistant from the Centre of the Earth, the Force of Gravity is nearly equal. But indeed all Places of the Earth's Surface are not at equal Distances from the Centre; because the equatorial Parts are something higher than the polar Parts: The Difference between the Earth's Diameter and Axis being about 34 *English* Miles, which hath been proved by the Necessity of making a *Pendulum* shorter in those Places before they will swing Seconds. 4. Gravity equally affects all Bodies, without regard either to their Bulk, Figure, or Matter: So that abstracting from the Resistance of the *Medium*, the most compact and loose, the greatest and smallest Bodies would descend equal Spaces in equal times, as appears from the quick Descent of very light Bodies in the exhausted Receiver. Whence a very great Difference may be observed between Gravity and Magnetism; the latter affecting only Iron, and that towards its Poles; the former all Bodies alike in every Part. Hence also may be concluded that there is no such thing as positive Levity, those things which appear light being only comparatively so. And whereas several things rise and swim in Fluids, 'tis only because they are not, Bulk for Bulk, so heavy as those Fluids: Nor is there any Reason why Cork, for instance, should be said to be light, because it swims on Water, any more than Iron, because it will

swim on Mercury. 5. This Power increases in descending, and decreases in ascending from the Centre of the Earth, and that in proportion to the Squares of the Distances therefrom reciprocally; so as for instance, at a double Distance to have but a Quarter of the Force, &c. which is highly agreeable to Reason, because the gravitating or attractive Power must needs be exerted more vigorously in a small Sphere, and more feebly in a greater, in proportion as it is contracted or expanded. Wherefore seeing the Surfaces or Spheres are to one another, as the Squares of the *Radii*, their Power at several Distances will be as the Squares of those Distances reciprocally; and then its whole Action upon each spherical Surface, be it great or small, will be always equal.

Gravedo, is that Weight or Liveliness, which accompanies a lessened Transpiration, or taking cold, as it is commonly called; and as it is frequently accompanied with a running of the Nose and Eyes, it is used for a *Coryza*, which expresses the same.

Grossus, is a barbarous Term used by some Writers for the same as *Crassus*, gross, for things coarsely powdered; and some are so nice as to distinguish between *Grossus* and *Viscosus*, as Lute is different from Glue.

Grume, is a thick viscid Consistence of a Fluid, like what we call ropy, as the White of an Egg, or clotted like cold Blood. And hence,

Grumous Blood, is that which is too thick for Circulation, and stagnates.

Grus, a Crane, is a Surgeon's Instrument, resembling the Beak of a Crane.

Gum, is a vegetable Substance differing from a Resin in being

more viscid, and less friable, and generally dissolving in aqueous *Menstruums*; whereas Resins being more sulphurous, require a spirituous Dissolvent.

Gummata. Strumous Tumours are sometimes thus called from the Resemblance of their Contents to gummous Substances.

Gums. See *Gingivæ*.

Gutta Rosacea, Rose-drop, is an Eruption upon the Skin, chiefly in the Face, which marks it with red Blotches or Wheals of a red colour.

Gutta Serena. See *Amaurosis*.

Guttera, from *Goutte*, which in *French* signifies a Convulsion; is a compound Powder, so called from its Virtues against such Distempers. *Riverius* hath the Reputation of being its Author, or first Publisher, after it had obtained great Esteem at *Montpelier*, where it was first made an officinal Medicine; but our *Colledge* have now considerably altered it.

Guttur, the Throat; what is properly thus called is the *Larynx*; which see.

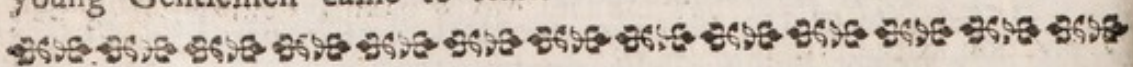
Gutturis Os, the same as *Os Hyoides*; which see.

Gymnastick, from *γυμνάσιον*, *exercitio*, to exercise; is such a Method of Cure as is performed by Exercise, or that part of Physick which treats of the Rules that are to be observed in all sorts of Exercises, for the Preservation of Health. This is said to have been invented by one *Herodicus*, born at *Salymbra*, a City of *Thrace*; or, as some say, at *Leutini* in *Sicily*. He was first Master of an Academy where young Gentlemen came to learn

warlike and manly Exercises; and whom he observing to be very healthful on that account, he made Exercise become an Art, in reference to the recovering Men out of Diseases, as well as preserving them from them; and called it *Gymnastick*, which he made a great part of his Practice of Physick. But *Hippocrates*, who was his Scholar, blames him sometimes for his Excesses in this kind of Physick. And *Plato* exclaims against him with some Warmth, for enjoining his Patients to walk from *Athens* to *Megara*, which is about 25 Miles, and to come home on foot as they went, as soon as ever they had but touched the Walls of the City. But to how much soever a blameable Excess this might be carried in those times, the Province of Medicine was some while after so over-run with Enthusiasts, Chymists, and Jugglers, as to turn out all such Practices; but by the Help of a sounder Philosophy the present Age has restored it again, and in due Limitations; insomuch, that there are Hopes of seeing a great Multitude of nauseous unprofitable Medicines give way to more efficacious and pleasant Exercises; especially in chronick Cases, where there is very little but what may be directly effected by the *Gymnastick* Practice.

Gynæcomastias, by the ancient Writers hath been applied to Tumours of the Breasts in Women: And,

Gynæcomastyx, signifies the Hair growing upon their Privy Parts.



H.

H *Abit*, is any particular Disposition or Temperament of

Body, obtained by Birth, or Manner of Living. The Antients distinguished

distinguish'd *ἔξις*, a constant, permanent Habit, from *διάθεσις*, a present Disposition, soon liable to alter.

Hæccitas, is used by some Chymists in the same Acceptation as their specifick Essence, or active Principle by which a Medicine operates.

Hæmatops, is strictly used by some for any bloody Suffusion of the Eyes from external Injuries, or otherwise, as the Words from whence it is derived signify bloody Eyes. But *Hippocrates* uses it frequently in a more lax Sense, for any concremented or stagnant Blood.

Hæmatocoele, *αἱματοκήλη*, a Blood swelling, hath been used by some Ancients for a Tumour turgid with Blood, from what Cause soever.

Hæmatochysis, *αἱματοχύσις*, is any preternatural flowing of Blood, whether critical or symptomatical; and is generally used in the same Sense as *Hæmorrhage*. And,

Hæmoptick, is a Person that spits Blood, from *αἷμα*, *Sanguis*, Blood, and *πύω*, *spuo*, to vomit, or spit. It is generally from some Fault of the Lungs, the Extremities of the Blood Vessels being worn off by sharp Humours, or a thin Blood, so as to let out their Contents, and suffer it to be coughed up.

Hæmorrhage, from *αἷμα*, *Sanguis*, Blood, and *ῥέω*, *fluo*, to flow, or run out, is the bursting out of Blood from any Part whatsoever, occasioned generally from a *Plethora*, and to be remedied by Evacuation; but if it be from an increased Velocity of a thin Blood, Agglutinants are to be made Use of, and Coolers.

Hæmorrhoids, from the same Derivation as the former, and *ἑλκος*, *Forma*, Likeness; is a Bleeding of the *Hæmorrhoidal Veins*. They also swell and inflame the Parts about them, without Bleeding. See *Piles*.

Hæmorrhoidal Veins. See *Veins*.

Hair. The Hair may justly be reckoned one of the common Teguments of the Body, not only for its Use, but also because it is to be found upon all the Parts of the Body, except the Soles of the Feet, and Palms of the Hands. It grows longest upon the Head, Beard, in the Arm-pits, and about the Privities. When we examine the Hairs with a Microscope, we find that they have each a round bulbous Root, which lies pretty deep in the Skin, and which draws their Nourishment from the surrounding Humours: That each Hair consists of five or six others, wrapped up in a common Tegument or Tube. They grow as the Nails do, each Part near the Root thrusting forward that which is immediately above it, and not by any Liquor running along the Hair in Tubes, as Plants grow. Their different Colours depend much upon the different Temperaments and Qualities of the Humours that nourish them. The Use of the Hairs is for a Covering and Ornament to the Body. Whatsoever the efficient Cause may be why a Man has a Beard, and a Woman none, it is certain the final Cause is for the distinguishing the Male from the Female Sex; which otherwise could hardly be known, if both were dressed in the same Habit.

Halation, is a purging Medicine prepared with Salt, and to be used at Table instead thereof: But we find little of this Kind retained in the present Practice.

Halinitron, is used by the Latin Writers *Hoffman*, *Paracelsus*, and some others, for the common *Sals Nitri*, or *Salt Petre*.

Halmyrodes, *αλμυρώδης*, *salsuginosus*, is a Term given by *Hippocrates* to a particular Fever that is attended with sharp brackish Sweats.

Halo, is the red Circle round the Breasts of Women. Astronomers also take Notice of a Meteor under this Name, in the Form of a Circle round the Sun, Moon, or Stars, but more especially the Moon.

Hamus, or *Hamulus*, is a Hook; and Surgeons make Use of an Instrument thus called, to extract the Child in difficult Labour, Figures of which are given by *Scultetus*, in *Arm. Chirurg.* Part 1. Tab. 8, 15, 31, and 34.

Head. By Anatomists this is termed the upper *Venter*, and comes last in Dissection, as the Contents are not so subject to Corruption. The Description, of the Parts see under their respective Names. But here it may not be amiss to reckon the several Apertures therein, as they are taken Notice of in Dissection: These are either external or internal. The external Holes are, 1. The two in the coronal Bone above the Artery, thro' which a Vein, Artery and Nerve from the Ophthalmick Branch of the fifth Pair pass, for the Brow and frontal Muscles. This frequently appears only as a Notch. 2. The *Orbiter internus* in the same Bone within the Orbit, a little above the *Os Planum*, for another Branch of the fifth Pair of Nerves, which goes to the Nose. The third is between the *Os unguis*, and the *Os maxillare*, in the great *Canthus* thro' which the *Ductus lachrymalis* passes to the Nose. 4. *Orbiter externus* in the *Os maxillare*, below the Orbit thro' which the Nerves and Vessels which come from the Teeth pass to the Cheek. 5. One single Hole in the same Bone behind the Fore Teeth, which comes from the Nose. 6. Two in the *Os Palati*, thro' which a Branch of the fifth Pair of Nerves passes to the Palate, *Uvula*, and Gums. 7. In the temporal Bone between the *Processus Mastoideus*, and *Sty-*

liformis, thro' which the *Portio dura* of the auditory Nerves passes. 8. The *Ductus auditorius externus*. 9. The *Ductus auditorius internus*. 10. The Conduit of the *Carotidal Artery*. 11. In the same Bone thro' which a Vein passes from the external Teguments to the lateral *Sinus's*; that is, behind the *Processus Mastoideus*. 12. In the *Occipital Bone* behind its *Apothyses*, thro' which the vertebral Veins pass. 13. In the same Bone for a Branch of the external Jugular. 14. One single large Hole for the *Medulla Spinalis*.

The internal Holes are, 1. The blind Hole above the *Crista Galli*. 2. The Holes in the *Os Ethmoides*. 3. In the *Os Sphenoides* for the Optick Nerves. 4. The *Foramen lacerum*, thro' which the third, fourth, and first Branch of the fifth and sixth Pair of Nerves pass. 5. For the second Branch of the fifth Pair of Nerves. 6. For the third Branch of the same Nerves. 7. The *Foramen Arteriæ Duræ Matris*. 8. The Canal thro' which the *Carotidal* enters, and the *Intercostal* passes out; but this was counted amongst the external Holes. 9. The Process of the *Os Temporum*, thro' which the auditory Nerve passes. 10. Between the temporal and occipital Bones: It is divided into two by the *Dura Mater*: thro' the one Part passes the eighth Pair of Nerves, and the *Nervus Accessorius*; thro' the other the lateral *Sinus's* open into the internal Jugulars. 11. One on each Side the large Hole of the *Occiput*, thro' which the ninth Pair of Nerves goes out.

Head-ach. See *Pain*.

Head-mould-shot, is when the Sutures of the Skull, generally the Coronal, ride, that is, have their Edges shoot over one another: which is frequently the Case in Infants, and occasions Convulsions and Death.

Health,

Health, is justly defined the Faculty of performing all the Actions proper to a human Body in the most perfect Manner. And all the Effects of these Actions are such as regard certain determined Motions, or the Change and Alteration of what is received into the Body.

Hearing. Sound is nothing but a certain Modulation of the external Air, which being gathered by the external Ear, passes thro' the *Meatus Auditorius*, and beats, as is supposed, upon the *Membrana Tympani*, which moves the four little Bones in the *Tympanum*. In like manner, as it is beat by the external Air, these little Bones move the internal Air, which is in the *Tympanum* and *Vestibulum*; which internal Air makes an Impression upon the auditory Nerve in the *Labyrinth* and *Cochlea*, according as it is moved by the little Bones in the *Tympanum*: So that according to the various Reflections of the external Air, the internal Air makes various Impressions upon the auditory Nerve, the immediate Organ of Hearing; and these different Impressions represent different Sounds. The curious Structure of the *Labyrinth* and *Cochlea* render the weakest Sounds audible; for the whole Organ of Hearing being included in a small Space, had the auditory Nerve run in a straight Line, the Impression had been made upon a very small Part of it; and the Strength of the Impression being, *cæteris paribus*, always as the Number of Parts upon which the Impression is made, Sounds which are now low, could not have been heard at all. If the auditory Nerve had, like the *Retina*, been expanded into a large Web, which had covered or lined some wide Cavity, the Impressions of Sounds even in this Case had been much weaker than they are now:

For this large Cavity hath given Room for the Sounds to dilate; and all Sounds grow weaker as they dilate. Both of these Inconveniences are prevented by the present Structure of the *Labyrinth* and *Cochlea*, whose Canals, by their Winding, contain large Portions of the auditory Nerve, upon every Point, of which the smallest Sound being at once impressed, becomes audible: and by their Narrowness the Sounds are hindered from dilating: And the Impressions made upon the Nerves by the first Dilatations are always the strongest. The Strength of the Impression in narrow Canals is likewise increased upon the Account of the Elasticity of the Sides of the bony Canal: which receiving the first and strongest Impulses of the Air, do raverberate them more strongly upon the auditory Nerve.

Heart. In describing this Part it may be of Use to prefix also that of the *Pericardium*, because they have such a near Relation to each other. The *Pericardium*, so called from *περί*, *circum*, about, and *καρδία*, *Cor*, the Heart; is a thin Membrane of a conick Figure, that resembles a Purse, and contains the Heart in its Cavity. Its Basis is pierced in five Places, for the Passage of the Vessels which enter and come out of the Heart. It lies in the Duplication of the *Mediaſtinum*, which firmly adheres to it, as its Point does to the Middle of the *Diaphragm*. It receives its Vessels from the *Mammary* and *Phrenick*, Nerves from the Recurrent and *Diaphragmatick*. It has *Lymphaticks*, which discharge themselves in the thoracick Duct. The Use of the *Pericardium* is to contain a small Quantity of clear Water, which is separated by small Glands it in, that the Surface of the Heart may not grow dry by its continual Motion.

The

The Heart is situated in the Middle of the *Thorax*, between the two Lobes of the Lungs ; it is of a conick Figure, whose Basis is the upper End, and its *Apex* or Point the lower End, which is turned a little to the left Side, that the right *Auricle* may be lower than the left, by which Means the reflux Blood in the *Cava* ascends the more easily ; for like other Liquors, the Blood will arise to the same Height in both Legs of a reflex Tube. For the same Reason the *Aorta* runs first upwards, before it turns down, that the Force of the returning Blood from the lower Parts may be the greater. The Heart is tied to the *Mediastinum*, to the *Pericardium*, and sustained by the great Vessels which bring and carry back the Blood. It is cover'd by a Membrane, which is the proper Membrane of the Muscles ; its Basis is always surrounded with Fat. It has two Veins which open into the *Cava*, immediately before it empties itself into the *Auricle*, and they are accompanied with two Arteries from the *Aorta*, which run thro' all the Substance of the Heart ; they are called the *Coronary Vessels*. The Arteries bring the Blood for Nutrition and Motion of the Heart, and the Veins carry back what remains. The Branches of the Veins on the right Side communicate with those of the left : And in like manner do the Arteries on each side communicate with one another ; and it is the same, tho' not every where so evident, in all the Parts of the Body. The Heart receives a Multitude of small Nerves from the eighth Pair, particularly they creep in great Numbers about the *Aorta*, and on the left Ventricle : It has also some *Lymphaticks* which discharge themselves into the *Lymphatick Duct*.

At the Basis of the Heart there are two *Auricles*, or little Ears, one on the right Side, and the other on the left. In the right Ear opens the *Vena Cava*, in the left the *Vena Pulmonalis* ; the first discharges the Blood it receives from the *Cava* into the right Ventricle, and the second thrusts the Blood that comes from the *Vena Pulmonalis* into the left Ventricle. The left is less, but thicker than the Right. Their Substance is composed of two Orders of muscular Fibres, which terminate in a Tendon at the Basis of the Heart ; and at the Right Ear there is a Circle like to a Tendon, where the *Cava* ends. Their external Surface is smooth ; their internal is unequal, full of small fleshy Pillars, which send out small Fibres, that cross and go thwart one another ; and betwixt these Pillars there are as many Furrows ; they receive Nerves from the Branches of the eighth Pair. They have the same Motions as the *Systole* and *Diastrale* of the Heart. Their Use is to receive the Blood which is brought from the *Cava* and *Vena Pulmonalis*, and by them to be thrust into the Ventricles of the Heart.

In the Heart there are two Cavities or Ventricles, which answer to the two Ears, one on either Side ; the Sides of these Cavities are very unequal, full of Fibres and little fleshy Productions, long and round, of a different Figure and Bigness, called *Columnæ* or Pillars. Betwixt these Fibres there are several Furrows in the Sides of the Ventricles ; especially in the left Ventricle, they are deeper and longer : they contribute much to the close Contraction of the Ventricles. And because the Side of the right Ventricle is much thinner than the left, therefore there is often a small Bundle of fleshy Fibres which come from
the

the middle Partition to its opposite side, to hinder it from dilating too much. The right Ventricle seemeth wider than the left, which is longer and narrower than the right, and its sides stronger and thicker. The two Ventricles are separated by the *Septum medium*, which is properly the inside of the left Ventricle, since its Fibres are continued with the Fibres of the opposite side of the same Ventricle. The Vessels which enter and come out of the Heart, are the *Vena Cava*, the *Arteria* and *Vena Pulmonalis*, and the *Aorta*, or *Arteria magna*.

The right Ventricle receives the Blood from the *Cava* thro' the right Ear; and at the Mouth of the Ventricle there are placed three Valves, made of a thinner Membrane: they are of a triangular Figure, and called *Tricuspides*; their Bases are fixed to the Mouths of the Ventricle, and their Points and Sides tied by small Fibres to the fleshy Productions: so that when the Ventricle contracts, and the opposite sides approach one another, the Points of the Valves meet, and their lateral Springs being relaxed, their sides are likewise made to join one another by the Blood which gets between them and the sides of the Ventricle. The three Valves thus united form a concave Cone, which hinders the return of the Blood to the *Auricle*; it is therefore thrust out at the *Arteria Pulmonalis*, which rises immediately out of the right Ventricle; its Mouth is less than the *Cava*; it has three Valves called *Sigmoidales*, or *Semilunares*, because they resemble a Half-Moon, or the old Greek *Sigma*, which was writ as a C. Their Substance is Membranous. When they separate, they give Passage to the Blood from the Ventricle into the Artery; but they shut the Passage and are thrust together by the Blood, if it endeavours to return. The

Arteria Pulmonalis carries the Blood to the *Vena Pulmonalis*, which dischargeth it self thro' the left Ear into the Ventricle of the same side. At the Orifice of this Ventricle there are two Valves called *Mitoides*, because they resemble a Mitten: they are broader than the other Valves; they are situated and have the same Use as the *Tricuspides* in the right Ventricle. The *Aorta*, or great Artery arises immediately out of the left Ventricle; it has three Valves, which have the same Use and Figure as the *Semilunares* in the *Arteria Pulmonalis*.

The Heart is a compound Muscle, and its Substance is made of Fibres of the same Nature as those of other Muscles; there are several Orders of them, which have different Directions, and all their Tendons are in the Basis of the Heart. From the *Aorta*, just by one of the *Coronary Arteries*, go out two Tendons, of which the first passes thro' the *Pulmonary Artery* and the right *Auricle*, the other between the two *Auricles*; these surround the Entry both of the *Aorta* and left Ventricle. The Entry of the right Ventricle is also tendinous, but all the Fibres which terminate about the *Pulmonary Artery*, terminate fleshy. Now of the Fibres which come from the Mouths of the right Ventricle and *Pulmonary Artery* the outermost, which are much the finest, go in a straight Line to the Point of the Heart: All the others, which are next the Surface of the Heart, wind towards the left hand, till they arrive at the Point, where turning underneath themselves and under the right Ventricle, they wind up the left Ventricle towards the right Hand, to their Insertion in the Basis. Under the straight Fibres, there pass a few more almost straight, from the Mouth of the right Ventricle to

to the *Pulmonary* Artery; and from the opposite side of the Artery, to the second Tendon of the *Aorta*, there pass others, by both which the Mouth of the *Pulmonary* is dilated in the Contraction of the Heart. Under all these, some which wind from the first Tendon of the *Aorta* towards the Point, when they come to the middle of the right Ventricle, turn up again to the Root of the *Pulmonary* Artery, or terminate in the fleshy Pillars and *Papillæ*. These both contract the Ventricle and dilate the Arteries at the same time. The Mouths of the Ventricle are likewise surrounded with semicircular Fibres, which assist the Valves in the *Systole* of the Heart. On the side of the *Septum Medium*, which is next the right Ventricle, some Fibres go straight from the Basis to the *Apex*; all the rest of the Fibres are twisted only round the Ventricle, and of these some creep half way, some more than half way, and then return to the Basis by the opposite side; some again terminate in the fleshy Pillars and *Papillæ*; the rest turn the Point, and seem to involve the Heart more than once in their going from, and returning to the Basis. From hence it appears that a much greater number of Fibres involve the left Ventricle than do the right, seeing the Blood is by this thrust only thro' the Lungs, but by that thro' all the Parts of the Body, even to the Extremities, and back again. And that the Force of the Constriction of this Ventricle might be every where strong, and the Texture of the Heart it self firmer, these Fibres are not at all parallel, or they do not at all run with the same obliquity; but the inner always decussate the outer, and frequently mix with one another. The Bone which is found in the Basis of the Heart of several Beasts, is nothing but the Tendons of the Fibres of the Heart

ossified: It is sometimes found in Men. This Muscle has two Motions called *Systole* and *Diastrale*; the former is when the Fibres contract, its Sides swell, and its Cavities are strongly pressed on all sides. The *Diastrale* is when it ceaseth to act; its Fibres are lengthened, its Sides fall, and its Cavities become large and wide.

The Force by which this Muscle throws its Blood out of its Ventricle or by which it contracts in its *Systole*, has employed the Enquiries of many in vain; and even *Borelli*, with a great deal of Geometry to his assistance, seems to have been very wide of the Truth in his Calculations thereupon; from reasoning upon improper *Postulates*, rather than the Insufficiency of the Means he made use: For Dr. *Keil* has since by the same Helps from Geometry, much more satisfactorily determined it, after the following manner.

If we have the Velocity where-with a Fluid flows out at any Orifice without any Resistance from an anterior Fluid, it is easy to determine the Force which produces that Motion. For let the Line *AB* be the Height from which if a Body fall, it will acquire a Velocity equal to the Velocity where-with the Fluid flows out from the Orifice; then is the Force which produces the Motion of this Fluid equal to the Weight of a Cylinder of the same Fluid, whose Base is equal to the Orifice, and whose Weight is equal to $2 AB$, by the second *Corollary*, of the 36th *Proposition* of the 2d Book of *Newton's Principia*. Now the Blood flowing out of the Heart, is much resisted in its Motion by the anterior Blood in the Arteries and Veins, and therefore cannot flow with all the Velocity the Force of the Heart will give it, were there no such

such Resistance; some part of that Force being spent in overcoming the Resistance which arises from the rest of the Mass of Blood. If therefore we could know how much the Velocity of the Blood is diminished by this Resistance, or what Proportion the Velocity of the Blood resisted has to the Blood that is driven out, and not resisted; having already determined the Velocity of the Blood as it is resisted, we might easily collect the Velocity by which the Blood would flow were it not resisted, and from thence the absolute Force of the Heart. To find out this, the Doctor made the following Experiment.

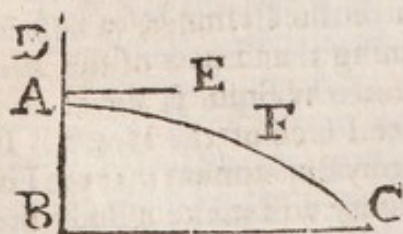
Having uncovered the *Iliack* Artery and Vein in the Thigh of a Dog, near to his Body, and having passed convenient Ligatures under them, he open'd the whole Diameter of the Vessel, and received into a Cup all the Blood which run from it in the Space of ten Seconds of a Minute; after that, the same was done by the Artery for the same Space of Time, and both the Quantities of Blood were exactly weigh'd. But because Experiments may be varied by some unheeded Circumstances, this was repeated, until the Quantity of Blood which runs from the Artery, to the Quantity of Blood which run from the Vein, was found to be in the same space of Time, nearly as $7\frac{1}{2}$ to 3. Now the Velocity of Blood in the *Iliack* Artery so near the *Aorta*, is nearly the same with that in the *Aorta*: and consequently the Velocity with which it flows out of the *Iliack* Artery cut asunder, is the same with which it would flow out of the Heart unresisted; or the Blood runs thro' a Wound in the *Iliack* Artery with all the Velocity it received from the Heart. Now all the Blood which runs along the *Iliack*

Artery, returns again by the *Iliack* Vein; and consequently the Quantities of Blood which pass thro' both in the same Space of Time are equal. The Quantity of Blood therefore which runs out of the *Iliack* Vein cut asunder, is the same which runs thro' the *Iliack* Artery before it was cut, in the same Space of Time. Having therefore the Quantity which runs thro' the *Iliack* Artery, when it is cut, and when it is not cut, we have their Velocities; for the Velocity of any Fluid running thro' the same Canal in equal Spaces of Time, is directly as their Quantities: But the Velocity of Blood when the Artery is cut, is equal to that it receives by the full Force of the Heart; and the Velocity when it is not cut, is that Velocity with which the Blood moves thro' the *Aorta* resisted by the anterior Blood: and therefore these two Velocities are to one another as $7\frac{1}{2}$ to 3.

Now if the Heart throws out two Ounces of Blood every *Systole*, (as is most probable) then the Blood moves thro' the *Aorta* at the rate of 156 Feet in a Minute; and therefore the absolute Velocity where-with the Blood would be forced into the *Aorta*, did it find no Resistance, is such as would make it to move 390 Feet in a Minute, which is near $6\frac{1}{2}$ Feet in a Second of time. We must next enquire what is the Height, from which if a Body falls, it will acquire this given Velocity; for this Height doubled gives the length of the Cylinder, whose Base is equal to the Orifice of the *Aorta*, and whose Weight is equal to the absolute Force of the Heart. It is known by Experiment that the Force of Gravity will make a Body move 30 Feet in a Second, which is the Velocity it acquires in falling thro' 15 Feet: and therefore this Velocity is to the Velocity of the Blood flow-

flowing without Resistance into the *Aorta*, as 30 to 6.5; but because the Heights from which Bodies acquire given Velocities, are as the Squares of the Velocities, that is as 900 to 42.25; therefore as 900 to 42.25, so is 15 to 07.4. This Height doubled gives the 14.8, or in Inches 17.76. which is the Height of a Cylinder of Blood, whose base is equal to the *Aorta*, which we have supposed to be equal to 0.4187; and therefore the solid Content is 7.436112, the Weight of which is equal to the absolute Force of the Heart. This Weight is five Ounces, and therefore the Force of the Heart is equal to the Weight of five Ounces.

But the Force of the Heart (supposing the Experiments on which this is found are uncertain) may be still found a more easy and simple way, thus; It is demonstrated by the Writers of Mechanicks, that if a Body, whether fluid or solid, be projected from any Height, according to a horizontal Direction, it will describe by its Motion a *Parabola*, whose *Latus Rectum* is = 4 times the Height from which a Body must fall to acquire the Velocity wherewith it is at first projected. Upon opening therefore the *Iliack* Artery of a Dog laid in an horizontal Direction, and 28 Inches high from the Ground, the Doctor found that the Blood moving in



the *Parabola* *AFC*, touched the Ground at C, which is about three Feet distant from the Perpendicular *AB* let fall from the Heart. Now

if *AD* be taken = $\frac{1}{4}$ of the *Latus Rectum* of the *Parabola*, it will be the Height from which the Blood must fall to acquire its Velocity at *A*. And because from the Nature of a *Parabola*, the Rectangle under the *Latus Rectum*, and the Altitude *AB* is = Square of *BC*; that is $4 AD + AB = BC^2$, or $AD + AB = \frac{1}{4} BC^2$; therefore $AB : \frac{1}{2} BC :: \frac{1}{2} BC : AD$, that is 28 : 18 :: 18 : 11.5. 11 $\frac{1}{2}$ Inches is therefore the Height the Blood must fall from to acquire the Velocity wherewith it is projected by the Heart. But this Height doubled gives the Length of a Cylinder, whose Base is = Orifice of the *Aorta*, and whose Weight = absolute Force of the Heart. The Length of the Cylinder is therefore 23 Inches. The Orifice of the *Aorta* of this Dog was 096, and therefore the solid Content of this Cylinder is 2.208, which = $1\frac{1}{3}$ of an Ounce = Force of this Dog's Heart. Now the Heart of this Dog weighed two Ounces; and Hearts being to one another as their Weights, and supposing that the Weight of an ordinary human Heart is twelve Ounces, then its Force will be almost = 8 Ounces. So that tho' this is somewhat more than what was before determined, yet it is of no greater Moment in respect to what the Force in the Heart used to be computed. *Borelli* required a Force in the Heart = Pressure of 180000 lb. Weight to move 20 lb. of Blood; but this great difference of his Calculation seems much to arise from his not distinguishing between the Blood at rest, and already in Motion. The Force of the Heart is not employ'd in moving any Quantity of Blood at rest, but only to continue it in motion; which how it first came by seems out of human Capacity to determine: However this is certain, that if the Resistance of

of the Blood bore always the same Proportion to the Force of the Heart that it does now, that the Blood never could at first be put in Motion by the Heart. Now did the Blood constantly move forwards, with the Motion at first communicated to it, and did the Coats of the Vessels make no Resistance, the *posterior* Blood would not be retarded by the *anterior*; and the Force of the Blood would equal the entire Force of the Mover. But because of the Resistance made by the Coats of the Blood Vessels, and the Force which is spent in distending them, the Blood is continually retarded in its Motion as it circulates, and would in a short time Stop, were not the lost Motion made up by a fresh Impulse from the Heart; and therefore the Force of the Heart must be equal to the Resistances the Blood meets with in its Motion; if it were more, the Velocity of the Blood would be continually increasing; if less, it would continually decrease, and at last stop. And from hence it is evident, that if the Circulation of the Blood was once stopped, all the Force of the Heart could never set it moving again.

Heart-Burn. See *Cardialgia*.

Heart of a Tree: The middle Part longitudinally, is so called.

Heat, is one of the four primary Qualities, and very much consists in the Rapidity of Motion in the smaller Parts of Bodies, and that in every way; for that the progressive Velocity of a Body will not be sufficient, we see from the Motion of Air and Water, which grow never the hotter for being drove by Tempests. The Writings of experimental Philosophy are full of Projects for discovering this Quality, and all concur in this necessary Requisite, of the Parts being rapidly agitated all ways, and variously struck against

one another. As to the Operation of this Quality upon our Senses, the Result of which we call Heat, it is usually estimated by its Relation to the Organs of Feeling; for we do not esteem any body to be hot, unless the Motion of its small Parts be brisk enough to encrease or surpass that of the Particles of the Sentient: For if it be more languid than the Sentient, we pronounce that Body to be cold; but if it be more quick in the Object than in the Sentient, we say the Body is hot; which is manifest by Experiment, because the same Water is frequently said to be hot or cold, as the Hand put into it is hotter or colder. Sir *Isaac Newton* conjectures, that Flame is a Fume, Vapour, or Exhalation heated red hot, that is, so as to shine; because Bodies do not flame without emitting a copious Fume, and this Fume burns in the Flame. In distilling hot ardent Spirits, when the Head of the Still is taken off, the ascending Vapour will take Fire at the Flame of a Candle; and the Flame will run along the Vapour from the Candle to the Still. Some Bodies heated by Motion or Fermentation, if the Heat grows intense fume copiously; and if the Heat be great enough, the Fumes will shine and become Flame. All flaming Bodies waste and vanish into burning Smoke; which Smoke, if the Flame be put out, is very thick and visible, and sometimes smells strongly; but in the Flame loses its Smell by burning; and according to the Nature of the Smoke, the Flame is of several Colours. As great Bodies probably conserve their Heat the longest; so the reason of it seems to be, that their Parts heat one another: whence great dense, and fixed Bodies, when heated beyond such a Degree, may emit Light so copiously, as by the Emission and Reaction.

action of its Light, and the Reflections and Reactions of its Rays within its Pores, to grow still hotter, till it come to such a Period of Heat, as is that of the Sun; whose Parts are kept from fuming away by the vast Weight and Density of the Atmosphere incumbent upon them, and very strongly pressing and condensing the Vapours which arise from them; for we see that Water but moderately heated will boil with Violence when the Pressure of the Atmosphere is taken off in the exhausted Receiver. And a Mixture of Tin and Lead, being placed on a red hot Iron in *Vacuo*, will emit copious Fumes, and even some Flame, which yet in the Air will scarce visibly smoke. Heat conduces much to the Fluidity of Bodies, by lessening the Tenacity of their Parts; for it renders many Bodies fluid, which otherwise are not so; and increases the Fluidity of tenacious Liquors, as of Honey, Oil, Balsam, &c. and by the same Reason lessens their resisting Force. Dr. Halley hath shewn, That the simple Action of the Sun is, as all other Impulses or Strokes, more or less forcible, according to the Sines of the Angles of Incidence, or to the Perpendicular let fall on the Plane; whence the vertical Ray (being that of the greatest Heat) being put for *Radius*, the Force of the Sun on the horizontal Surface of the Earth, will be to that, as the Sine of the Sun's Altitude at any other Time. Hence it follows, that the Time of the Continuance of the Sun's Shining being taken for a Basis, and the Sines of the Sun's Altitudes erected thereon as Perpendiculars, and a Curve drawn thro' the Extremities of those Perpendiculars, the *Area* comprehended shall be proportionate to the Collection of the Heat of all the Beams of the Sun in that

Space of Time. Hence it will follow likewise, that under the Pole the Collection of all the Heat of a Tropical Day is proportionate to a Rectangle of the Sine of 23 Degrees and a half into 24 Hours, or the Circumference of a Circle; that is, the Sine of 23 Degrees and a half, being nearly $\frac{4}{10}$ of *Radius*, as $\frac{8}{10}$ into 12 Hours; or, the Polar Heat is equal to that of the Sun continuing 12 Hours above the Horizon at 53 Degrees Height, than which the Sun is not 5 Hours more elevated under the Equinoctial. But whereas the Nature of Heat is to remain in the Subject, after the Cause that heated it is removed, and particularly in the Air; under the Equinoctial, the Twelve Hours Absence of the Sun does very little still the Motion impressed by the past Action of his Rays, wherein Heat consists, before he rises again; but under the Pole, the long Absence of the Sun for six Months, wherein the Extremity of Cold does obtain, has so chill'd the Air, that it is, as it were, frozen, and cannot, before the Sun has got far towards it, be any ways sensible of his Presence, his Beams being obstructed by thick Clouds, and perpetual Fogs and Mists. But the differing Degrees of Heat and Cold in differing Places, depend in a great Measure upon the Accidents of Situation, with regard to Mountains or Valleys, and the Soil. The first greatly help to chill the Air by the Winds which come over them, and which blow in Eddies thro' the Levels beyond: And as to Soils, some retain the Heat much more than others, as the Sands in *Africa*, *Arabia*, and such like Deserts, make the Heat of Summer incredible to those who have not felt it.

Hebe, ἡβη. This Word is used in three different Significations, *viz.* for the first Hair appearing about the

the genital Parts; for the Parts themselves; but more justly for that Time of Youth, at which it first appears; whence Custom hath appropriated it almost solely to the latter, or to signify Youth in general.

Hætick, from ἥξις, *Habitus*, a *Habit*; may strictly be applied to any thing that is become habitual, but is only joined to that kind of Fever which is slow and continual, and ending in a Consumption. This is the Reverse of those Fevers which arise from a *Plethora*, or too great a Fullness from obstruction, because it is attended with too lax a State of the excretory Passages, and generally those of the Skin, whereby so much runs off as leaves not resistance enough in the contractile Vessels to keep them sufficiently distended, so that they vibrate oftner, agitate the Fluids the more, and keep them thin and hot. The Remedy is in giving a firmer Tone to the Solids, and laying more load upon the Fluids by a better Consistence, with Balsamicks, Agglutinents, and Food of the best Nourishment.

Helenium Elicampane, or *Enula Campana*, is thus called, from its great Plenty in the Island of *St. Helena*, as some say; and others give different reasons for this Name, too fictitious for any serious regard.

Heliochrysum, from ἥλιος, *Sol*, the Sun, and χρυσοῦς, *Aurum*, Gold, is any Flower of a yellow Colour: but is more peculiar to the Sun-Flower.

Heliotropium, from ἥλιος, *Sol*, the Sun, and τρέπω, *verto*, to turn; is a Name given to all Plants that turn towards the Sun, but more particularly the Turnsol, or Sun-Flower.

Helix. See *Ear*.

Helminthes, ἑλμυνθες, signifies any kind of Worms, whence

Helminthagogum, from the former, and ἀγω, *duco*, to drive; is any Medicine that expels Worms.

Heloides, ἑλωίδης, the same also as τυφώδης, is a particular kind of Fever attended with colliquative Sweats, and hath at the same times the Tongue dry and hard. Some take the *Anglicus Sudor*, which was epidemical, and described by the Lord *Verulam*, in his History of *Henry the VIIth's* Reign, to have been of this kind.

Hemerilopia, ἡμεραλωπία, is a Dislemper just taken notice of by *Galen*, *Introduc.* Cap. XV. in *Princ.* but not afterwards mentioned, wherein a Person could see only by Day-light in opposition to the νυχταλωπία, wherein the Patient can see only by Night.

Hemicrania, from ἡμισυ, *semis*, half, and κρανίον, *Cranium*, the Skull, or Head; is a Pain that affects only one part of the Head at a Time.

Hemina, an antient measure, of different Contents in different Nations; but now used in Medicine to signify about ten Ounces in Measure.

Hemiplegia, from ἡμισυ, *semis*, half, and πλῆσσω, *percutio*, to strike or seize; is a Palsy, or any nervous Affection relating thereunto, that seizes one Side at a Time, from some partial Disorder of the nervous System. See *Palsy*.

Hemisphere, from the same, and σφαῖρα, *Globus*, a Ball or Circle, is the half of a Globe when 'tis supposed to be cut thro' its Center in the Plane of one of its greatest Circles.

Hepar. See *Fecur*.

Hepar Uterinum. See *Placenta*.

Hepatick Flux, is a bilious Looseness, occasioned by the overflowing of Choler.

Hepatick Vein. See *Veins*.

Herb. See *Plant*.

Herba Sancti Pauli, by some called also *Herba Paralytica*, is commonly taken to be the Primrose; but for what Reason it hath obtained this Signification does not appear.

Herba Salutaris, some have thought fit thus to call the White Thorn, upon a Supposition that our Saviour was crowned with it in Derision, when he suffered upon the Cross: And Distinctions annexed to this Word on like Conceits are endless.

Herculeus Morbus. The Epilepsy is thus called, from the Terror of its Attacks, and Difficulty of Cure. Some Medicines also upon the same Foundation, have been called *Herculean*, in order to denote their uncommon Force; but such Conceits are now much in neglect.

Hereditary Disease, is such as is transmitted from the Parents in the first Rudiments of the *Fætus*, which is the Origin of many Chronick Cases.

Hermaphrodite, is generally understood to be a Person where there is a Confusion of Sexes, by a Participation of the genital Parts of both. But there seems no more of Truth in this, than that some Females have their *Clitoris* of an uncommon Size; and which frequently happens from lascivious Titillations, and Frictions, as in the notorious Instance of the two Nuns at Rome.

Hermetick Art: Chymistry is thus called, from *Hermes*, or *Mercury*, whom they will have to be the first Inventor of it.

Hermetical Philosophy, or

Hermetical Physick, is that which is directed by chymical Reasonings, upon the Principles of Salts, Sulphur, and Mercury.

Hermetical Seal, or to seal any thing *Hermetically*, is to heat the Neck of a Glass till it is just ready

to melt, and then with a Pair of hot Pincers to twist it close together.

Hernia, is any kind of Rupture whatsoever, and is diversify'd by the Name of the Part affected. As,

Hernia Scrotalis, is when the Testicles are distended beyond their natural Size; which happens by Bruises, and a too free use of Venerary. And,

Hernia Uteri, is sometimes made use of for the same as *Procidencia Uteri*, &c.

Herpes, is a cutaneous Inflammation of two kinds; *Miliaris*, or *Pustularis*, which is like Millet-Seed upon the Skin, and itches; and *Excedens*, which is more corrosive and penetrating, so as to form little Ulcers, if not timely taken care of.

Heterogeneous, from *ἕτερον*, *alterum*, another, and *γενος*, Genus, Kind. This is a Term of a very lax Signification, and by the Chymists is come to serve almost for any thing they do not understand; so that all Differences or Inaptitude to mixture between any Bodies is from their Heterogeneity of Parts. But so far as this Term may be made use of to convey any distinct Signification, must be done by considering natural Bodies under different Sortments, according as they are diversify'd by Figure, Bulk, Motion, and their more sensible Properties: So that those of different Sortments are heterogeneous to one another, and the Parts of the same Sortment are homogeneous, from *ὁμοιός*, *similis*, like, and the latter Part as before. Thus the Divisions Chymistry makes of Bodies into Oils, Salts, Spirits, &c. may be reckoned in respect to one another heterogeneous, tho' the Parts of each Divisions are amongst themselves homogeneous. In short, they are two hard Words that serve frequently for the Refuges of Ignorance; else the common

Terms

Terms of Like and Unlike might serve for the same Purposes, when there is really any distinct Meaning intended to be communicated by the Speaker ; because the latter is as capable of being restrained to any particular Properties or Accidents of the Bodies under Consideration, as the former.

Heterorhythmos, is made by *Galen* a Species of the $\alpha\rho\theta\mu\theta$, which is any Irregularity of the Pulse, this restraining it to that particular Sort, where it beats like one of a greater or lesser Age ; as if a Child hath a Pulse like one more advanced in Years, or the contrary.

Hydrotick, a Medicine that promotes Sweat, from $\dot{\iota}\delta\rho\acute{\omega}\varsigma$, *sudor*, Sweat.

Hiera Picra. A particular Composition of Aloes and Spices, is so called from the supposed Excellency of its Virtues ; the Words $\dot{\iota}\epsilon\rho\acute{\alpha}$, *sancta*, and $\pi\acute{\iota}\kappa\rho\acute{\alpha}$, *amara*, signifying the holy bitter. The *Hiera* hath also for the same Reason been given to divers Compositions, by *Logadius*, *Ruffus*, *Archigenes*, and others, at large described by *Æginetus*, *Lib. VII. Chap. 8.* but they are all discontinued in the present Practice.

Hieroglyphicks, were certain Characters said to be introduced into Medicine from *Hermes Trismegistus*, of mysterious Import and Efficacy ; some Dealers also in *Chiromancy*, have given the same Term to those Lines of the Hand, from which they pretend to foretel any thing relating to a Person's Fortune. But these Juggles are now despised.

Hippocratica Facies. See *Facies Hippocratica*.

Hippocrates's Sleeve : A woollen Bag, made by joining the two opposite Angles of a square Piece of Flannel, in the Form of a Pyramid, used to strain Syrups and Decoctions for Clarification.

Hippuris, $\dot{\iota}\pi\pi\upsilon\rho\epsilon\iota\varsigma$, is by the an-

cient Writers in Botany used for the same Plant as the *Equisetum* ; but is also by *Hippocrates* applied to such Disorders as are apt to proceed from much riding ; as Debility and Weeping of the genital Parts.

Hippus, is an Affection of the Eyes that makes them shake and tremble so as to represent Objects in the like kind of Motion as when on Horseback, from $\dot{\iota}\pi\pi\theta$, *Equus*, a Horse.

Hircus, every one knows properly to signify a Goat ; but because that Creature is remarkable for its Salacity, and Inclination to Venery, some physical Writers have thought fit to apply *Hircosi*, to Persons of like Dispositions ; especially those just come to Puberty, or full Growth.

Homogeneous. See *Heterogeneous*.

Homotonos, $\acute{\omicron}\mu\acute{\omicron}\tau\omicron\nu\theta$, equal, or rather equable, is said of such Distempers as keep a constant Tenor, of Rise, State, and Declension, and is particularly applied by *Galen*, to those continued Fevers which are by others also called $\acute{\alpha}\kappa\mu\alpha\sigma\iota\kappa\alpha\iota$, *Acma-sick*, last described by *Bellini de Febr.*

Horoscope, $\omega\rho\omicron\sigma\kappa\acute{\omicron}\pi\theta$, was one who pretended to tell from the Figure of a Plant, what celestial Influence it was under, and what Virtues from thence obtained ; but *Galen* in his Time, took Notice of such with Derision. It is since become also a Term amongst Astrologers, of not much better Repute.

Horror, strictly signifies such an Excess of Fear as makes a Person tremble ; but in Physick it signifies such a Shuddering or Quivering as precedes an Ague Fit : and is often joined with *Rigores* and *Lumbagines*. Thro' Ignorance of this Acceptation some have understood Fear to be accounted by some Authors amongst the antecedent Symptoms of some Distempers. And a pretending Translator has particularly made this

Blunder in Dr. Sydenham on the Gout.

Hortus, signifying a Garden, some Writers, as *Rolfinkius*, *Macreen*, and others have thought fit to apply it to the Privy Parts of a Woman.

Humerus. See *Scapula*.

Humidity, is that Quality which we call Moisture, or the Power of wetting other Bodies, which some Liquors and Fluids are endued with; and it differs very much from Fluidity, depending all together on the Congruity of the component Particles of any Liquor to the Pores or Surfaces of such particular Bodies as it is capable of adhering to. Thus Quicksilver is not a moist Liquor in respect to our Hands or Clothes, and many other things it will not stick to; but it may be called so in reference to Gold, Tin, or Lead, to whose Surfaces it will presently adhere. And even Water itself that wets almost every thing, and is the great Standard of Moisture and Humidity, is not capable of wetting every thing; for it stands and runs easily off in globular Drops on the Leaves of Cabbages and many other Plants: and it will not wet the Feathers of Ducks, Swans, and other Water-Fowl. And that the Texture only may cause the Fluid to be humid, is plain, because neither Quicksilver alone, Lead or Bismuth will stick upon Glass; yet being mixed together, they will form a Mass that will do so; as is plain from such a Composition being frequently used in foliating Looking-Glasses.

Humidum Radicale, Radical Moisture; which see.

Humilis Musculus. See *Eye*.

Humour, in a lax Sense may be taken for any Fluid; but Physicians restrain it chiefly to those of animal Bodies, and understand by it, in the largest Acceptation within that Re-

striction, all the Juices contained in Canals or Vessels; and which are distinguished from one another, by some manifest Qualities, as healthful, vitiated, sanguine, cholerick, and the like, according to their different Consistences, and Principles. But *Helmont* thinks fit to ridicule the Followers of *Galen*, who assigned some different Humours, for the compounding Parts of the Blood; but how justly, we leave others to determine.

Humores in Secundinis. See *Amnion*.

Humours of the Eye. See *Eye*.

Hunger, is an animal Appetite, arising from an uneasy Sensation at Stomach for Food. When the Stomach is empty and the Fibres in their natural Tensity, they draw up so close as to rub against each other, so as to make that Sensation: but when they are distended with Food, it is again removed; unless when a Person fasteth so long, as for want of Spirits or nervous Fluid, to have those Fibres grow too flaccid to corrugate, and then we say a Person has fasted away his Stomach. And as this is occasioned by the Attrition of the Coats of the Stomach against each other, Thirst, when not mix'd with Hunger, seems to differ in nothing else but too sensible an Attrition of the Food in the Stomach against its Sides, for want of a sufficient Quantity of Moisture. For the thinner Part of the Food will wash over the *Pylorus* first, and thereby often occasions a Supply to dilute the Remainder. And this is the Appetite of Thirst.

Hydatides, from *ὕδωρ*, *Aqua*, Water, and *εἶδος*, *Forma*, Appearance; are little transparent Bladders of Water in any Part: most common in dropical Persons, from a Distention or Rupture of the *Lymphaducts*; for they happen mostly
in

in Parts abounding with those Vessels, especially in the Liver, Lungs, *Mesentery* and *Uterus*, the latter of which *Ruysch* gives an Instance, *Cent. Anat. Chyr. Obs.* 33. wherein it was hardly any thing but a Collection of these Bladders: Hence likewise some Writers apply the Term *Hydatism* to a particular Sound made by Tumours like that of included Water; tho' more anciently this Term expressed a particular Tumour upon the Eye-lids, that was almost transparent like a Pearl.

Hydragogue, from ὕδωρ, *Aqua*, Water, and ἄγω, *duco*, to draw; is such a Medicine as occasions the Discharge of watry Humours, which is generally the Case of the stronger Catharticks, because they shake most forcibly by their Vellications, the Bowels and their Appendages, so as to squeeze out Water enough to make the Stools seem to be little else.

Hydrargyros, ὑδράργυρος, ἄργυρον χρυσόν, *Argentum Vivum*, and by the Chymists *Mercury*, is the common Quicksilver.

Hydraulics, is that Part of Mechanicks which considers the Motion of Fluids, and particularly of Water.

Hydrocele, from ὕδωρ, *Aqua*, and κήλη, *Tumor*, Swelling; is properly any watry Swelling, but is used only for that of the *Scrotum*; as,

Hydrocephalum, from the former, and κεφαλή, *Caput*, the Head; is when the Head is stuffed and soft with Water; which is the Case of many Children, and increases till they die convulsed, if not remedied: which is not to be done without severe Blistering upon the *Sutures*. It is called the Head-Dropsy.

Hydromel, from the former, and *Mel*, Honey; a Composition of Water and Honey.

Hydropege, from the former, and

πήγη, *Fons*, a Spring; is Spring-Water.

Hydrophobia, from the former, and φοβέω, *timeo*, to fear; is a Fear of Water, called also for that Reason, *Aquæ Pavor*; but applied only in those dismal Symptoms that follow the Bite of a mad Dog; and amongst which the Dread of Water is the most remarkable. Frequent Immersion in cold Water, before the Venom shews itself, which is sometimes a great many Days, is reckon'd the best, if not the only Remedy.

Hydropick, one that is troubled with a Dropsy; also a Medicine contriv'd for that Distemper; and

Hydrotick, signifies the same.

Hydrops, a Dropsy, from the same Derivation; because Water is the most visible Cause of the Distemper. It is from too lax a Tone of the Solids, whereby Digestion is weakened, and all the Parts stuffed beyond Measure. The Cure consists in Evacuation, and strengthening the Fibres of the whole Body.

Hydrops ad Matulam, from *Matula*, signifying a Chamber-Pot, or a Urinal, is a *Diabetes*; which see.

Hydrostaticks, is what relates to the Gravities and *Æquilibria* of Liquors; and also comprehends the Art of weighing Bodies in Water, in order to estimate their specific Gravities. There are several Parts of the animal Mechanism, especially the Circulation and Secretion, which cannot be understood but by some *Præcognita* from hence; the best Writers therefore on this Subject ought to be consulted. There is Room here only to recite some of the most useful Heads of this Part of Physical Knowledge; as,

1. The upper Parts of all Fluids press upon the lower.
2. A lighter Fluid may gravitate or press upon a heavier.

3. If a Body contiguous to the Water be altogether, or in part, lower than the upper Surface of the Water, the lower Part of the Body will be pressed upwards by the Water which toucheth it beneath.

4. To account for the rising of Water in Pumps, &c. there needs only a competent Weight of an external Fluid.

5. The Pressure of an external Fluid is able to keep an heterogeneous Liquor suspended in the same Height in several Pipes, tho' they be of different Diameters.

6. If a Body be placed under Water, with its uppermost Surface parallel to the Horizon, the direct Pressure which it sustains is no more than that of a Column of Water, having the horizontal Superficies of the Body for its Base, and the perpendicular Depth of the Water for its Height. And if the Water that leans on the Body be contained in Pipes open at both Ends, the Pressure of the Water is to be estimated by the Weight of a Pillar of Water, whose Base is equal to the lower Orifice of the Pipe, and its Height equal to a Perpendicular, reaching from thence to the Top of the Water; tho' the Pipe be much inclined any way, or tho' it be ever so irregularly shaped, and much broader in some other Places than at the bottom.

7. A Body immersed in a Fluid, sustains a lateral Pressure from the Fluid, which also increaseth as the Body is placed deeper beneath the Surface of the Fluid.

8. The Ascent of Water in Syphons, and its flowing thro' them may be explicated without having Recourse to an Abhorrence of a *Vacuum*, from the external Pressure of some other Fluid.

9. The most solid Body, that will sink by its own Weight at the Surface: yet if it be placed at a

greater Depth than that of twenty Times its own Thickness, will not sink, if its Descent be not assisted by the incumbent Water.

10. If a Vessel be filled with Water, or any other Liquor, whose Surface is capable of being even, it will continue so till disturbed by an external Cause.

11. If a Body specifically lighter than a Fluid be immersed in that Fluid, it will rise with a Force proportionable to the Excess of Gravity in the Fluid.

12. If a Body heavier than the Fluid be immersed, it will sink with a Force proportionable to the Excess of its Gravity.

13. Fluids when press'd, press *undequaque*, on all Sides.

14. Weights which force out of the same Tube equal Quantities of the same Fluid, are to one another as the Squares of the Times in which the Fluid is forced out: But if the Times are equal in which the same Quantity of the Fluid is forced out thro' unequal Tubes, then the Powers are reciprocally as the Orifices of the Tubes; and therefore Powers which thrust out the same Quantity of a Fluid thro' unequal Tubes, are to one another in a reciprocal Proportion compounded of the Squares of the Times and of the Orifices of the Tubes.

Hygieia, from *ὕγιαίνω*, *bene va-*
leo, to be well; is a good State of Health. The Poets have fancy'd a Goddess under this Appellation; and Institution Writers are almost as fictitious and unintelligible, when they define what is meant hereby: but those that will be contented with plain Sense, may understand by Health a due Velocity of the Blood in the Arteries and Veins of a living Body, as Disease was before describ'd to be that due Velocity lost: hence

Hygieia, is that Part of Physick which

which teaches the Preservation of Health.

Hygroscope, is an Instrument to shew the Moisture and Dryness of the Air; and to measure and estimate the Quantity of either Extreme. There are various Methods of doing this, but the ordinary Contrivances with Whip-Cord are the easiest and best, as they infallibly shorten and lengthen, as the Air grows moister and dryer. How far the earliest Notices of Changes of this kind may be made use of by a Physician in many Cases, the skillful alone can be Judges.

Hylarchick Principle, is a Term introduced by Dr. Hen. Moore, in his *Enchirid. Metaphys.* to signify an universal Spirit in the World; but he hath no Followers in such mysterious Distinctions, Mr. Boyle having very early overthrown his Doctrine upon this Head.

Hymen. See *Generation Parts of, proper to Women*.

Hyoides. See *Tongue*.

Hyothryoides. See *Larynx*.

Hypercatharsis, from ὑπερ, *supra*, over or above, and καθάρω, *purgo*, to purge; is when a Medicine has purg'd to Excess.

Hyper-Chrysis, from the same, and κρίνω, *secerno*, to separate; is a critical Excretion above measure; as when a Fever terminates in a Looseness, the Humours may flow off faster than the Strength can bear, and therefore it is to be checked.

Hyperscarcofis, from ὑπερ *super*, above, and σὰρξ, *Caro*, Flesh; more Flesh than needful, or Excrescencies of Flesh, generally on the Lips of Wounds, which Surgeons call *Fungus's*, from their Resemblance to Mushrooms.

Hypnotick, from ὕπνος, *Somnus*, Sleep; is any Medicines that induces Sleep; which see, and *Narcoticks*.

Hypocatharsis, from ὑπὸ, *sub*,

under, and καθάρω, *purgo*, to purge, is when a Medicine does not work so much as was expected, or but very little.

Hypocaustum, from ὑπὸ, *sub*, under, and καίω, *uro*, to burn; is a Stove, or Hot-House, or any such like Contrivance.

Hypocistis. Schroder says, this is the Juice of a Sprout which shoots out from the Root of the *Cistus*, not unlike Mistletoe of the Oak. It is blackish, and shines like the best *Spanish* Juice of Liquorice. It is reckon'd more powerful in its astringent Qualities than the *Acacia*; but it is but little used.

Hypochondriack Regions, from ὑπὸ, *sub*, under, and κόνδρος, *Cartilago*, a Cartilage; that is, the two Regions lying on each Side the *Cartilago Ensiformis*, and those of the Ribs, and the Tip of the Breast; which have in one the Liver, and in the other the Spleen. Hence Disorders of those *Viscera*, especially of the Spleen, are called the

Hypochondriacal Affection; (see *Hysterical Affection*) and

Hypochondriacal Medicines, are such as are calculated against such Disorders.

Hipogastrium, from ὑπὸ, *sub*, under, and γαστήρ, *Venter*, a Belly; is that Region of the Belly reaching from three Inches below the Navel to the *Os Pubis* and Groins.

Hypogastrick Artery——*Veins*, See *Artery*——*Veins*.

Hypoglossum, from ὑπὸ, *subter*, under, and γλῶσσω, *Lingua*, the Tongue. See *Ranula*.

Hypopion, is a Collection of Pus under the *Tunica Cornea* of the Eye.

Hyposphagma, is an Extravasation of the Blood in the Eye, proceeding from some external Injury.

Hypostasis Urinae, is the thick Sediments in Urine.

Hypostatical Principles: Some Chy-

Chymists, and particularly *Paracelsus*, so called the three Chymical ones, Salt, Sulphur. and Mercury.

Hypothesis, from *ὑποτίθημι*, *suppono*, to suppose, signifies strictly any Conjecture or Supposition advanced; but in a large Sense. It is a way of Reasoning upon somewhat supposed, that cannot of it self be proved; or for dispatch, is taken for granted. But this way of Reasoning has of late been justly exploded in Physick, because that argues from demonstrable Principles, which our Senses are Witnesses to, and will not allow any thing supposititious, unless sometimes for Argument sake.

Hysterick Affections, from *ὑστέρα*, *Uterus*, the Womb; are Disorders of the Womb that bring the whole nervous System frequently into Disorder therewith: And,

Hysterick Remedies, are Medicines calculated against such Disorders, which are either *dulcia* or *fœdita*, sweet or stinking: but of the former, such as Musk, Ambergrease, and the like, there are very few with whom they will agree. Disorders of the Womb, all which are called hysterick Affections, arise from too titillating, or too uneasy Sensations: The former proceed from that Irritation of the Nerves, which the Make and Secretion of those Parts have naturally subjected them to; this in some sorts of Constitutions arising to that degree, as to draw the whole System into Disorder, and occasion a surprizing Variety of Symptoms, as several sorts of Convulsions and Species of Madness; which therefore are by some termed *Furores Uterini*. Now these Disorders seem most effectually allay'd by such things as are in a manner the reverse of Cordials, and are both in smell and taste very offensive and disagreeable; and they seem to answer this

end by suffocating as it were the Spirits, and damping their inordinate Sallies; so that such Stimulation ceases, and the Fibres return to their natural Tone and Motions: for as what is grateful to the Senses gives an inexpressible Emotion to the fine nervous Filaments, so does what is fetid and disagreeable quite destroy that Emotion, and deaden it. And as the former kind consists chiefly of fine subtile volatile Parts, by which, as before explain'd under *Cephalicks*, they are the fitter to enter the Nerves; so these are generally of a clammy viscous Contexture, and thereby the fitter to envelope and entangle that subtile Juice, whereby its Motion is much retarded, and consequently the Fibres render'd less springy. In the latter Case, the Uneasiness of the Burden when with Child, and often the Disorders of the *Fœtus*, bring the Womb, and by degrees the whole nervous System, into convulsive Disorders; which admits of little or nothing to be done by way of Medicine, but is best remedy'd by contributing to the Ease, and gratifying all the Desires and Cravings of the Mother. But the worst Mischief to those Parts is from a Lodgment of some disagreeable Matter upon their Glands, whereby they are frequently apt to cancerate; or from an Obstruction of those Discharges which at certain times the Constitution requires to be made from those Parts. In the first of these, all such come to be deemed Hystericks, which by their deterfive qualities open those Glands, and by degrees wear away the obstructed Humours. In the latter are employ'd such as either give a greater Force to the circulating Blood, whereby it is enabled to break thro' the Capillaries; or which so attenuate it, as to fit it upon that account the easier to flow thro', and make the

the Discharge requir'd. And thus whatsoever in Medicine, either simple or compound, contributes to any of those Ends, tho' very different in their Operations, as the original Cause of their Disorder may differ, they all come under this general Appellation of *Hystericks* or *Uterines*.

Hypotenar, from ὑπὸ, *sub*, under, and σήναρ, *vola*, the Hollow of the Hand; a Muscle which arises from

the fourth Bone of the second Rank of the Bones of the *Carpus*, and from the *Ligamentum Annulare*, and is inserted externally into the first Bone of the little Finger; this draws it from the other Fingers.

Hysterotomy, from, ὑτέρα, *Uterus*, the Womb, and τέμνω, *feco*, to cut, is a Dissection of the Womb, as in the *Cæsarion* Operation.



I

I *Atraleiptes*, ἰατραλείπης, is a Person who undertakes to cure Distempers by external Unction and Frictions: *Galen* makes mention of such in his Time, particularly one *Diotas*; and *Pliny* informs us, that this was first introduced by *Prodicus* of *Selymbria*, who was a Disciple of *Æsculapius*.

Iatros, ἰατρος, *Medicus*, is a Physician; and some Compounds and Derivatives of this Word are made use of on many Occasions by physical Writers, as *Iatricachymicus*, a Chymical Physician, and the like.

Ibis, was a Bird much like our King-Fisher, taken notice of by the *Egyptians*, because when it was Sick, it used to inject with its long Bill the Water of the *Nile* into its Fundament, whence *Langius*, *Lib. 2. Ep. 2.* says, they learn'd the use of Clusters.

Ichor, signifies strictly a thin watry Humour, like *Serum*, but is also sometimes used for a thicker Kind that flows from Ulcers. Several Acceptations of this Term by some Authors are here needless to recite; it being met with in very different Senses.

Icteric, is said of a Person that has the Jaundice; and,

Icteric Remedies, are Medicines against the Jaundice; from

Icterus, the Jaundice; a Distemper from Obstructions of the Glands of the Liver, which prevents the Gall being duly separated by them from the Blood; and sometimes, especially in hard Drinkers, they are so indurated, as never after to be opened, and to straighten the Motion of the Blood so much thro' that *Viscus*, as to make it divert with a Force great enough into the *Gastrick* Arteries, which go off from the *Hepatick* to break thro' them, and drain into the Stomach; so that vomiting of Blood in this Distemper is a fatal Symptom.

Icterus albus, the white Jaundice; the Green-Sickness is sometimes improperly thus called.

Ice. See *Freezing*.

Idea, strictly is a metaphysical Term expressing the Conception or Perception the Mind has of any thing under such a Term; and thus *Idea Morbi* is a complex Perception of such a Collection of Accidents as concur to any Distemper, expressed by some particular Term.

Idiopathy, from ἰδίῳ, *proprius*, proper, or one's own, and πάθος *Affectus*, Affection, or Passion; is a primary disease, that neither depends on, nor proceeds from another.

Idiosyncrasy, from ἰδίῳ, *proprius*,

prius, συν, cum, with, and κρασις, Temperamentum, a Temperament; is a peculiar Temper or Disposition, not common to another.

Jecur, the Liver. This *Viscus* lies in the right *Hypogastrium*. Its convex and upper Side reaches a little beyond the *Cartilago Ensiformis*, and touches the *Diaphragm*. Its concave and upper Side covers the *Pylorus*, and Part of the Stomach, as also a Part of the *Colon*, all the *Duodenum*, a Part of the *Jenunum*, and of the *Omentum*: when we stand, its Extremity grows near to the Navel. It is almost round and pretty thick. Its upper Side is convex, smooth, and equal. In its middle and fore-part it is divided into two by a *Fissure*, where the umbilical Vessels enter. The Gall-bladder is fastened to its under Side, where there are three Eminences that the Antients called *Portæ*, of which one passes for a little Lobe: when it is full of Blood, it is of a hard red Colour; when the Blood is washed out of it, it is pale and soft.

It is fastened in the Body by two Ligaments; the first which is large and strong, comes from the *Peritoneum* that covers the *Diaphragm*, and penetrating the Substance of the Liver, it joins the *Capsula* of the *Vena Portæ*. The second is the umbilical Vein; it comes from the Navel, and enters by the great Fissure of the Liver to join the *Vena Portæ*: After the Birth it degenerates into a Ligament, but is of little use for the fastening of the Liver; 'tis cover'd with a common Membrane from the *Peritoneum*, besides that every Lobe and Gland has its proper Membrane.

The common Membrane of the Liver being raised, its Substance appears to be composed of small Glands of a conick Figure not easily to be perceiv'd in a human Liver,

and bound together by a proper Membrane into several Heaps or Lobes, which like Bunches of Grapes, hang to the Branches of the Vessels, from which each small Gland receives a Twig; and the Lobes are tied to one another by small Membranes, which fill up the Spaces between them. The Vessels of the Liver are the *Vena Cava*, and the *Vena Portæ*; they are accompanied with many small Branches of the Arteries, which come from the *Cæliac* and *Mesenterica superior*. The *Vena Portæ* brings the Blood full of Bile for Secretion, and the *Cava* brings back the Blood that remains. The *Vena Portæ* and the *Cava* enter the Liver by its concave Side, and are equally distributed thro' all its Substance; where ever there is a Branch of the one, there is a Branch of the other: So that each Lobe, and each Gland in the Lobe, whether on the convex or concave Side, receive the same Vessels. The *Vena Portæ* performing the Office of an Artery, brings the Blood full of Bile, which being strained off by the Glands, the rest of the Blood is carried back by the Branches of the *Vena Cava* to the Heart. Its Nerves it receives from the *Plexus Hepaticus* of the intercostal Nerve. Besides these Vessels, the Liver has lymphatick Vessels, most of which open into the conglobated Glands near the *Vena Portæ*, or the concave Side of the Liver; from thence the *Lympha* is carried by other Lymphaticks to the *Receptaculum Chyli*.

The excretory Vessels of the Liver are the *Vesicula Fellis* and *Porus Biliarius*: The *Vesicula Fellis*, or Gall-bladder, is fixed to the concave Side of the Liver, into which its back Part makes a small Dint; its Figure is like that of a Pear; 'tis of

a different Bigness almost in every Subject; the biggest is about the Bigness of a little Hen's Egg. When the Liver is in its natural Situation, the Bottom or largest Part of the Bladder is downwards, and the Neck or narrowest Part upwards; and then it touches the Stomach as well as the *Colon*, where it frequently dyes them yellow. This Bladder is composed of three Coats, the outermost is common to it with the Liver: the next, which is proper to it, is thick and solid, composed of transverse, oblique, and straight Fibres. The third is thin and nervous: This last Coat is cover'd within by a kind of Crust or *Mucus*, which preserves it against the Acrimony of the Bile, secreted probably by some small Glands, which *Malpighi* has remark'd between its Coats, where the *Cystick* Arteries end; which gave him ground to think, that it was the same in the *Porus Biliarius*. The Bile is brought into the Gall-bladder by some small Vessels which arise from the neighbouring Glands, and which uniting form one or two Pipes that open at the Neck of the Bladder. These Ducts are hard to discover in any Liver but that of an Ox. From the Neck of the Gall-bladder there goes a Pipe, not in a straight Line with the Bladder, but, as it were, more depressed in the Liver; it is call'd *Ductus Cysticus*. Some small biliary Ducts open likewise into it, and its inner Membrane has several *Rugæ*, which retard the Motion of the Bile: To this Pipe, which is about the Bigness of a Goose Quill, is joined another, called *Ductus Hepaticus*, or *Porus Biliarius*; these two together make the *Ductus communis Choledochus*, which goes obliquely to the lower End of the *Duodenum*, or beginning of the *Jejunum*. After it has pierced the first Coat, it runs near two Fingers

breadth between the Coats, before it opens into the Cavity of the Intestine; which oblique Insertion serves instead of a Valve to hinder the Bile from returning into the *Ductus communis*, having once enter'd the Intestine. The Gall-bladder has two Veins from the *Vena Portæ*, which are called *Cysticæ Gemellæ*. It has some small Arteries from the *Cæliacæ dextra*, and some Lymphaticks.

The *Porus Biliarius* is another excretory Vessel of the Liver: It has as many Branches as the *Vena Portæ*, which it accompanies thro' every Lobe and Gland of the Liver. Wherever there is a Branch of the one, there is a Branch of the other; and these two are inclosed in one common *Capsule*, as in a Sheath. The Use of this *Capsule* is to facilitate the Motion of the Blood and Bile, by the Contraction of its Fibres. All these Branches unite, and make one Trunk of the Bigness of a small Quill, which joins the End of the cystick Duct, for carrying the Bile from the Liver to the Intestines by the common Duct; as was said before. The Insertion of the *Porus Biliarius* into the cystick Duct is oblique, with its Mouth looking towards the *Ductus communis*, by which means it is impossible that the Bile which comes from the *Cystis* can enter the *Porus Biliarius*, unless the common Duct is stopp'd.

The Bile which is found in the Gall-bladder is thinner, and different from that which is in the *Porus Biliarius*. The Use of the Bile is to sheathe or blunt the Acids of the Chyle; because they being entangled with its Sulphur, thicken it so as that they cannot sufficiently be diluted by the *Succus Pancreaticus* to enter the Lacteal Vessels. This appears not only from the Analysis of the Bile, which yields more of a lixivious than of a volatile alkaline Salt,

Salt, but likewise from what *Leuenhoeck* has observ'd, that of the great Quantity of acid Salts he has seen amongst the Aliments in the Stomach, he never could find any in the Chyle after it had passed the *Duodenum*. Because some Chyle is almost always passing thro' the *Duodenum*, therefore it is necessary that the Bile likewise should be continually poured into it from the *Hepatick Duct*. In a Dog, whose common Duct was near as big as a Man's, has been gather'd at the Rate of two Drams in an Hour. But because a greater Quantity of Aliments requires a greater Quantity of Bile, therefore according as the Stomach is more or less distended with Food, it presses out of the Gall-bladder a proportionable Quantity of Gall to be mixed with the Chyle in the Guts.

As that particular Mechanism by which the Bile is separated from the Blood is so remarkable and extraordinary, as to lead us a great Way into a true Apprehension of the whole Affair of Secretion, we shall add an Account of it from that most accurate Reasoner this Way, *Dr. James Keil*. The Bile, he says, could no where be so conveniently secreted from the Blood, as where the Liver is placed. Had all the Branches of the *Celiac* Artery carried all the Blood to the Liver, from which the Gall was to be separated, it is evident, considering the Nearness of the Liver to the Heart, and the intestine Motion of the Blood, that so viscid a Secretion as the Gall

is, could never have been formed in the Blood, and consequently could never have been secreted by any Gland in that Place. In this Case Nature is forced to alter her usual Method of sending the Blood to all Parts of the Body by Arteries. Here she forms a Vein, which is no Branch of the *Vena Cava*, as all the others are; and by it sends the Blood from the Branches of the *Mesenterick* and *Celiac* Arteries to the Liver. By this the Blood is brought a great Way about, passing thro' all the Intestines, Stomach, Spleen, Caul, and *Pancreas*, before it arrives at the Liver; and its Celerity is extremely diminished, that all the Corpuscles, which are to form the Gall, may have a sufficient Time to attract one another, and unite before they come to their secreting Vessels. But that this is most certainly the Use of the *Porta*, will more evidently appear, if we consider what Nature still does further in Prosecution of the same Design. The Cavities of all the Arteries increase as they divide. The Sum of the Branches which rise immediately from the *Aorta*, is to the *Aorta* as 102740 is to 100000: but as if this Proportion was too little to effect the Design of Nature, before the Blood arrives at the Liver, the Branches, which immediately spring from the Trunk of the *Mesenterick* Artery, increase in a much greater Proportion. The Figure of this Artery, as it lies in the Middle of the *Mesentery*, is after this manner;



And in a Body from which the Doctor took the following Propor-

tions, he found 21 Branches to spring immediately from its Trunk.
In

In such Parts of which the Trunk
of the Mesenterick Artery is 15129

The 1st Branch is	2136
2	1936
3	2136
4	2104
5	4489
6	1936
7	2601
8	3136
9	1681
10	3025
11	625
12	1369
13	1024
14	1846
15	1936
16	529
17	729
18	1156
19	1024
20	1156
21	841
The Sum of all	37428

By these Proportions it appears, that the Sum of the first Branches is much more than double to the Trunk of the Mesenterick Artery; and therefore the Velocity of the Blood in them is much less than half what it is in the Trunk: whereas in the Branches which come immediately from the *Aorta*, the Diminution of the Velocity is hardly sensible. But to put this Matter in the clearest Light, it is necessary, First, to examine with what Velocity the Blood would have moved in the Liver, had it been carried thither by Arteries, as usual to other Places. Secondly, with what Velocity it would have moved, had it been brought to the Liver by such an Artery as the *Mesenterica superior*. And, Thirdly, to demonstrate the Velocity with which it now moves

thro' the Branches of the *Porta* to the Liver.

Suppose, that an Artery equal to the Mesenterick (the Square of whose Diameter is .038025 Parts of an Inch) had gone directly from the *Aorta* to the Liver, and that the Proportion between its Branches had been the same it is every where else; to wit, 10000 to 12387. The Logarithm of .038025 is 1.4189307. The Logarithm of the smallest Artery has been found to be 8.6020620, their Difference is — 7.1831293; which Number being divided by .2080639, the Quotient 3.4 is the Series of Divisions of this Artery: and consequently upon Calculation, the Velocity of the Blood in the last Divisions of the Series, will be found to be to the Velocity in the Trunk of the Artery, as 1 to 1448. But the Velocity of the Blood would have been much less, if it had been carried by an Artery, such as the Mesenterick; directly to the Liver. What Proportion the Trunk of the Artery bears to its first Branches, has been shewn; the Proportion of the several Trunks to their Branches will next be necessary, to find out the general *Ratio*.

The fifth Branch of the }
Mesenterick Artery was } 4489

Its Branches }
 } 1764
 } 2809
 } 4573

The least of those Branches 1764

Divided into four

{ 576
 { 1225
 { 576
 { 1024

3401
The

J E

(222)

J E

The biggest Branch

2809

Of these the biggest

1296

Divided into three

$$\left\{ \begin{array}{r} 961 \\ 1764 \\ 1521 \end{array} \right.$$

Divided into two

$$\left\{ \begin{array}{r} 676 \\ 676 \end{array} \right.$$

4246

1352

One of these, to wit,

1521

The 14th Branch of the
Mesenterick Artery was
$$\left\{ \begin{array}{r} 1846 \end{array} \right.$$

Divided into two

$$\left\{ \begin{array}{r} 1369 \\ 961 \end{array} \right.$$

Its Branches

$$\left\{ \begin{array}{r} 900 \\ 900 \\ 900 \end{array} \right.$$

2330

2700

The Eighth Branch of the
Mesenterick Artery was
$$\left\{ \begin{array}{r} 3136 \end{array} \right.$$
The 15th Branch of the
Mesenterick Artery was
$$\left\{ \begin{array}{r} 1936 \end{array} \right.$$

Its Branches

$$\left\{ \begin{array}{r} 1521 \\ 1225 \end{array} \right.$$

Its Branches

$$\left\{ \begin{array}{r} 1089 \\ 1369 \end{array} \right.$$

2746

2458

The biggest Branch

1521

Of these the biggest Branch

1369

Divided into two

$$\left\{ \begin{array}{r} 900 \\ 900 \end{array} \right.$$

Divided into three

$$\left\{ \begin{array}{r} 784 \\ 676 \\ 676 \end{array} \right.$$

1800

The least

1225

2136

Divided into two

$$\left\{ \begin{array}{r} 729 \\ 900 \end{array} \right.$$

Of which Branch

676

1629

Divided into two

$$\left\{ \begin{array}{r} 400 \\ 529 \end{array} \right.$$
The tenth Branch of the
Mesenterick Artery was
$$\left\{ \begin{array}{r} 3025 \end{array} \right.$$

929

Its Branches

$$\left\{ \begin{array}{r} 1936 \\ 1600 \end{array} \right.$$

3536

The biggest Branch

1936

Divided into two

$$\left\{ \begin{array}{r} 1089 \\ 1296 \end{array} \right.$$

2385

From all which Numbers, we shall take the general *Ratio* of the Trunks to their Branches, to be as the Sum of all the Trunks to the Sum of all the Branches; that is, as 28749 to 36221, or as 10000 to 12687. Now a Calculation upon this *Ratio* will find 36 Series of Divisions in the Mesenterick Artery; and that in the last of these the Blood moves 5261 Times slower than

than

than it does in the Trunk of the Mesenterick Artery.

As the Trunk of the Mesenterick Artery bears a lesser Proportion to its Branches than the *Aorta* does to its Branches; so the Branches of the Mesenterick Artery are likewise less in Proportion to their conjugate Veins, than the *Aorta* is to the *Vena Cava*. The descending Trunk of the *Aorta*, below the Emulgents, is to the *Vena Cava* at the same Place, as 324 is to 441; but a Branch of the Mesenterick Artery is to its corresponding Branch of the *Porta*, as 9 to 25: and therefore the Blood in the Branches of the *Porta* moves 14613 times slower than it does in the Trunk of the Mesenterick Artery, and that only upon the Account of the Increase of the Diameter of the Vessels; so necessary was it to abate the rapid intestine Motion of the Blood, which might hinder the Coalescence of the Particles for the Formation of the Bile.

The Velocity of the Blood thus decreasing as it passeth to the Liver, it is next to be known what time it takes in passing. If a Blood-Vessel divides into any number of Branches of equal Lengths, and the Orifices of the Branches of each Division increase in a certain given *Ratio*, the time the Blood will take to run thro' such a Vessel may be thus had: Because the Velocity of the Blood is reciprocally as the Sections of the Vessels, and the Length the Blood runs being given, the Time is reciprocally as the Velocity; the Time the Blood moves thro' each Length will be directly as the Section of the Vessel, that is, directly as the Sum of the Sections of all the Branches: And therefore if the Sections are in a Geometrical Progression, the time will likewise be so too. Supposing then that the Time encreases at each Division of the Vessel in the Propor-

tion of 1 to r , the Times will be in this geometrical Progression, 1. r . r^2 . r^3 . r^4 . r^5 . &c. Now if the last Term be called u , the Sum of the Progression, that is, the Sum of all the Times will be $= \frac{ru-1}{r-1}$: And

if the Proportion of the Branches of the Mesenterick Artery be taken to be to one another as 10000 to 12687, the Number of Divisions will be 36; and consequently supposing an equal Distance between each Division, the Blood moving with an uniform Motion, will require 37 times the time to run thro' the whole Length of the Mesenterick Artery, that it does to move thro' the *Aorta* to the first Division of the Mesenterick Artery. In this Proportion r is equal to 1.2687, whose Log. is 0.1033589, which multiplied by 36, gives the Log. of the Number 5259, which is the last Term of the Progression, equal to u , and $ru = r^3 = 6672$, therefore $ru - 1 = 6671$: Now if from the Log. of 6671 be abstracted the Logs. of the Number of $r - 1$, or of 0.2687, there will remain the Log. of the Number 24826, which is the Sum of all the Times the Blood takes in moving thro' all the Divisions of the Mesenterick Artery; and therefore the Time it takes in moving thro' the Mesenterick Artery, is to the Time it would run along it with such an uniform Motion as it has at the beginning of the Artery, as 27826 to 37, or as 670 to 1. Now the Blood in the *Aorta*, or Beginning of the Mesenterick, runs at the rate of 78 Feet in a Minute; and therefore if the Mesenterick Artery be suppos'd to be 10 Inches long, the Blood will with a uniform Motion run along it in the Space of 0.64 of a Second: and consequently it must now take up near 7 Minutes in passing thro' the Mesenterick Artery.

tery. But the Velocity in the *Porta* is to the Velocity in the Mesenterick Artery as 9 to 25; and therefore if the *Porta* be supposed likewise to be 10 Inches long, the Blood will be 19 Minutes in passing thro' it: so that the Time the Blood takes in passing from the *Aorta* to the Liver is at least 26 Minutes; whereas if an Artery had gone directly from the *Aorta* to the Liver, according to the usual Method of Nature, it had passed in a little more than half a Second, that is, in 2437 times less than it now requires in passing. All which does evidently demonstrate, that the Blood was not in a state to yield Bile, if it had gone directly from the *Aorta* to the Liver: that a much greater Time, and a much more languid Motion than so direct a Passage could have allowed, was absolutely necessary to get the bilious Particles in a Readiness to be separated from the rest of the Blood in the Liver. The Divisions of the Arteries have been supposed of an equal Length, which indeed they are not, but may, for the easier Calculation, without any considerable Error, be taken equal to one another.

After this Care taken for the Formation of the Bile in the Blood which passes the mesenterick Artery, a very considerable Piece of Mechanism of the like Nature is also employed for its Conveyance by the *Celiac* Artery to the Liver, for the same end: for it seems it was necessary to send a larger Quantity of Blood to the Liver than could be disposed of thro' the Intestines. Part of the Blood of the *Celiac* Artery is spread upon the Stomach and Caul, and its Velocity diminished, as we have seen, in the Intestines; but still all the Blood which these Parts could receive, was not sufficient for the Liver, and there was no room for the dividing and

expatiating the Vessels thro' such a large Space as the Mesentery, and a long Tract of Guts. Here therefore is another extraordinary Contrivance, by emptying the Blood entirely out of the Vessels into a large spongy Bowl, or Cistern provided for that Purpose. The Dimensions of the splenick Artery are uncertain; but the Circumference of the *Celiac* being half an Inch, or .5, its Square is .25; and therefore the Square of the *Splenick*, which is a Branch of it, cannot be above .18. Now the Dimensions of the Spleen are 6 Inches in length, 3 or 4 in breadth, and 2 in thickness. This easy Supposition therefore may be made for the more easy Calculation, that it is a Cylinder of 2 Inches Diameter; and therefore the Square of its Circumference being 36, the Blood must move 200 times slower in the Spleen than in the Beginning of the *Splenick* Artery. From all which Contrivance it is evident the Velocity of the Blood was to be diminish'd; and that such a slow Motion was absolutely necessary for the discerning of the Bile in the Liver. If the Humours which are separated by the Glands are at all Times and Places the same in the Blood, and not formed after this Manner, there would have been no occasion for this Diminution of the Blood's Velocity. And from the Contrivance of the *Porta* particularly, the Bile receives another Advantage besides the Diminution of its Velocity, and that is, by its running thro' so many different Parts before it comes to the Liver, it loses the greatest Part of the *Lympha*; by which means the Particles that compose the Bile, approaching nearer to one another, are by their mutual Attraction sooner united. And the Consideration of these two Contrivances together, yet more firmly maintain the Truth of this Doctrine.

Jecur

Jecur Uterinum: The *Placenta* is by some thus called, from the supposed Similitude of its Office with that of the Liver.

Jejunum. See *Intestines*.

Ignis, Fire. Besides what is said under *Heat*, which see, on this Subject; it may be observed that the Chymists make several Distinctions of Fire, according to their different Degrees from the first to the fourth Degree; but there is no understanding well what belongs to them, unless by Practice.

Iliack Muscle, is a Muscle of the Thigh, which arises fleshy from the internal concave Part of the *Os Ilium*; and in its descent over the inferior Part of it, joins with the *Psoas magnus*, and is inserted with it under the Termination of the *Pectineus*. This, with the *Psoas magnus*, moves the Thigh forward in walking.

Iliack Passion, is a kind of nervous Cholick, whose Seat is the *Ilium*, whereby that Gut is twisted, or one Part enters the Cavity of the Part immediately below or above; whence it is also called the *Volvulus*, from *volvo*, to roll.

Iliack Vessels. See *Artery* and *Vein*.

Ilium. See *Intestines*.

Ilium Os. See *Ossa Innominata*; all these from *εἰλέω*, *circumvolvo*, to roll about; because the Gut which is principally called by this Name, is long, and lies in Folds towards the Bottom of the *Abdomen*, and therefore gives many of the adjacent Parts these Appellations.

Illegitimate, *νόθος*, is frequently used in the same sense as *Spurious*, or *Irregular*; as when a Disease changes its Appearances from the usual Course, so that no certain Judgment can be made of it; as in a *Febris Spuria*, *Peripneumonia Notha*, and the like.

Illutamentum, was an antient Form of an external Medicine, like the *Ceroma*, with which the Limbs

of Wrestlers, and others delighting in like Exercises, were rubbed, especially after Bathing; an account of which may be met with in *Barcicus de Thermis*.

Imagination, is that Faculty by which we, as it were, picture corporeal Substances in the Mind, as if we saw them actually with the Eyes; which can be illustrated in no Instances better than those of right-lined Figures, where a Person may, by the Force of this Faculty, draw in his Mind, and discern, as if seen, so far as four, five, or six Sides; but further this will not reach; altho' the Understanding can reason about the Properties of more complicated Figures, as well as of those thus imagined or pictured to the Mind. How far this Faculty comes under a Physician's Regard, is pretty hard to say; but it is certain, that the common metaphysical Accounts of it are entirely out of his Province.

Imbecillity, from *Imbecillitas*, Weakness; is a State of Languor, or Decay, wherein the Body is not able to perform its usual Exercises or Functions.

Imbile, from *imbibo*, to drink in, is used commonly in the same sense as absorbent, when a dry porous Body takes up one that is moist.

Imbricated, is used by some Botanists to express the Figure of the Leaves of some Plants, which are hollow like an *Imbrex*, a Gutter-tile.

Immature, is sometimes applied to the Aliments, and sometimes also to the animal Juices, not sufficiently digested or concocted: But some Authors make a distinction between this and *Crude*, too nice to be of any Use here. The Birth is said to be *immature*, when a Woman miscarries, or is deliver'd of a *Fætus* not fully form'd, thro' want of the usual time requir'd for that Purpose.

Immersus, sunk, or hid; is a

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Term

Term given by *Bartholine*, and some other Anatomists, to a Muscle, now commonly called *Subscapularis*; which see.

Immersion, from *immergo*, to dip; is the sinking of any Body in a Fluid: which every Body will do that is specifically heavier than the Fluid; and the Celerities of their Descents will be in Proportion to the Excess of Gravity. See *Hydrostatics*.

Impenetrability, is that Solidity of Matter or Body, whereby it cannot admit another into the same Place that it possesses.

Imperfect, is very critically used by some Writers, as every Individual of either Sex is said to be imperfect with regard to the want of another in order to Generation, tho' that very Distinction contributes to Perfection in themselves; so also Mercury is called an imperfect Metal, because it is not arrived to a fixed State, whereas was it so it would cease to be Mercury; and so of many other Things.

Imperfect Flowers, are such as want the *Petala*, and therefore they are sometimes called *Apetalous*, and sometimes *Stamineous*. See *Flower*.

Imperfect Plants, are such as are thought to want Flower or Seed. See *Plants*.

Impervious, from *in*, the negative Sign, *per*, thro', and *Via*, a Way; is such a Closeness of Pores, or particular Configuration of Parts, as will not admit another thro'.

Impetigo, is a cutaneous Foulness, divided into many Sorts by the Antients; but a better Knowledge in Secretion, and the Office of the cutaneous Glands, has taught us the Cure of all such Disorders without having any necessary recourse to such Distinctions; the Itch and Leprosy taking in the several kinds, from the most easy to the most obstinate Degree of Infection, according to which the Means of Cure are proportioned.

Impetus, hath been variously used by physical Writers; but now obtains only in Mechanicks to express the Blow or Force with which one Body strikes against another.

Implicated, is said by *Celsus*, *Scribonius*, and some others, of those Parts of Physick which have a necessary Dependence on one another; but hath more significantly been applied by *Bellini* to such Fevers, where two at a time afflict a Person, either of the same kind, as a double Tertian; or of different kinds, as an intermittent Tertian, and a Quotidian, called a Semitertian.

Impotence, is the want of any Power; but generally applied to an Insufficiency in the Male to impregnate the Female.

Imposthume, is a Collection of Matter or *Pus* in any Part, either from an Obstruction of the Fluids in that Part, which makes them change into such Matter, or from a Translocation of it from some other, where it is generated.

Impregnation, is caused by the Emission of the Male-Seed in Coition, by which the Female conceives, or becomes with young. It is also hence figuratively used in Pharmacy for the sating one Body with another, as any *Menstruum* is said to be impregnated with a Body that is dissolved in it, as much as its Pores are able to receive.

Impuber, is said of such as have not yet Hair upon their Privy-parts, which bespeaks a Ripeness for Generation; but *Helmont* with some others affirm Females capable of Conception before such an Appearance.

Impulse, is used in the same Sense as *Impetus*; which see.

Inadequate Idea, is a partial or incomplete Representation of any thing to the Mind.

Inanimate, is said of every thing which hath not animal Life. *In-*

Inanity, from *inanis*, empty, is the same as Vacuity, and implies the Absence of any Body, so that nothing remains but Space.

Inappetency, is a Want or Loss of Appetite.

Incantation, is used for a Way of curing Diseases by Charms, defended by *Paracelsus*, *Helmont*, and some other chymical Enthusiasts: but those who have pursued a better Way of Reasoning have despised such Delusions.

Incalescence, is growing hot, as many Bodies do by Motion and Friction; or as Quick-lime, by pouring Water upon it.

Incarnation, from *in*, and *Caro*, Flesh, is the healing or filling up Ulcers and Wounds with new Flesh; and the Medicines which effect this, are commonly called *Incarnatives*.

Incide, from *incido*, to cut. Medicines are said thus to do, which consist of pointed and sharp Particles, as Acids, and most Salts; by the Force or Insinuation of which, the Particles of other Bodies are divided from one another, which before cohered. And thus some expectorating Medicines are said to incide or cut the Phlegm, when they break it so as to occasion its Discharge.

Incidence, from *incedo*, to fall, or go forward; expresses the Direction with which one Body strikes upon another; and the Angle made by that Line, and the Plane struck upon, is called the Angle of Incidence. In the Occursions of two moving Bodies, their Incidence is said to be perpendicular or oblique, as their Directions, or Lines of Motion, make a straight Line, or an oblique Angle at the Point of Contact. See *Angle of Incidence*.

Incineration, from *in*, and *Cineres*, Ashes; is the Reduction of any Body into Ashes, by burning.

Incisores. See *Teeth*.

Inclination, is when a clear Liquor is poured off from some *Faces*, or *Sediment*, by only stooping the Vessel; which is also called Decantation. This Term is also used in Physicks to express the mutual Approach, or Tendency of two Bodies, Lines, or Planes towards one another; so that their Directions make either a straight Line at the Point of Contact, or an Angle, of a greater or lesser Magnitude. See *Incidence*.

Incommensurable Quantities, are those which have no aliquot Parts, or any common Measure that may measure them.

Incontinency, is said of such natural Discharges as are involuntary thro' Weakness, as of involuntary crying, &c. it is also applied to an Indulgence of unlawful Desires.

Incorporation, from *in*, and *Corpus*, a Body, embodying; is the mixing of the Particles of different Bodies so together, as to appear an uniform Substance, or Composition of the whole, without discerning the Ingredients, or Bodies mixed, in any of their particular Qualities.

Incorruptible, is applied by some to such Medicines as will not decay; and *Incorrupta* is frequently said of a Virgin, who hath had no Venereal Intercourse with a Man.

Incrassating, is the rendring Fluids thicker than before, by the Mixture of less fluid Particles. See *Agglutination*.

Incubus, is called *Asthma Nocturnum*, the Night-Asthma, and Night-Mare; because there seems a Weight upon the Breast as if somewhat rid upon it. The Causes are nearly the same as in a humerous Asthma, and the same Means of Cure will also herein do Service; tho' it is a Case that seldom happens, and very often is only in the Imagination, from the Impression of Dreams, or a Distemperature of Thought.

Incurvation, is the bending a Bone, or any other Body, from its natural Shape.

Incus. See *Ear*.

Index, the Fore-finger, from *indico*; to point or direct; because that Finger is generally so used. And hence the *Extensor Indicis*, is also called *Indicator*.

Indicated, is that which is directed to be done in any Disease. And,

Indication, is of four kinds, vital, preservative, curative, and palliative as it directs what is to be done to continue Life, cutting off the Cause of an approaching Distemper, curing it whilst it is actually present, or lessening its Effects, or taking off some of its Symptoms before it can be wholly removed.

Indicating Days, are the same as critical Days.

Indignatorius Musculus; a Muscle is thus called, which is supposed to draw the Eye from its inner Corner outwards, which gives an Appearance of Scorn and Anger; but that is properly a compound Motion of two Muscles; for which see *Eye*.

Induration, from *durus*, hard; are such things as give a harder or firmer Consistence to another, by a greater Solidity of their Particles, or as dissipate the thinner Parts of any Matter, so as to leave the Remainder harder. Thus a Tumour is indurated either by the Addition of earthy and solid Particles, as in *Schirri*, and knotty Swellings; or by transpiring the thinner Parts thro' the Skin, whereby the Remainder grows more fixed, as in an *Oedema*.

Inertia Vis. See *Nature Laws of*.

Infant, hath by some been used so loosely as to express a Child even in the Womb, but more strictly to include from the Time of Birth to that of using Speech, as the Term *non fando*, or not speaking, imports: tho' others again extend it to seven Years of Age.

Infection, from *inficio*, to strike into; is that Manner of communicating a Disease by some *Effluvia*, or Particles which fly off from distemper'd Bodies, and mixing with the Juices of others, occasion the same Disorders as in the Bodies they came from. See *Poisons*: 'Tho',

Infectio, is sometimes used in the same Sense as *Tinctura*; as the *Ars infectoria*, is the Art of Staining or Dying.

Infirmary, or *Infirmatory*, is the Place where sick Persons are taken Care of either for Nursing or Cure.

Inflammation, is when the Blood is obstructed so as to croud in a greater Quantity into any particular Part, and give it a greater Colour and Heat than usual. See *Phlegmon*.

Inflation, a blowing up, is the stretching or filling any Part with a flatulent or windy Substance.

Inflexion, is said of the bending Rays of light by a different Medium.

Influent, flowing together, or into; expresses any Liquor or Juice, that by the Contrivance of Nature, and the Laws of Circulation, falls into another Current or Receptacle. Thus with respect to the common Receptacle, the Chyle is its influent Juice, and so is the Bile to the Gall-Bladder, and Venal-Blood to the Heart in its *Diaffole*; and the like.

Infra Spinatus, is a Muscle of the Shoulder, pulling the Arm upwards and backwards. See *Supra Spinatus*.

Infundibulum, is a Funnel, whence many Parts in a human Body having any Resemblance thereunto in shape, are thus called; as the *Infundibulum Cerebri*, and *Infundibulum Renum*; for which see *Brain*, and *Kidneys*: And some Parts of Plants, for the same Reason, are called *Infundibuliformes*. See *Flowers*.

Infusion, is a Part of Pharmacy whereby the Virtues of Plants, Roots, and the like, are drawn out by letting

ting them steep only in some convenient Menstruum ; and this is concerned in Bodies of a laxer Texture, than those which require Decoction, and whose Parts are so light as not to admit of a greater Motion without Hazard of flying away in Vapour.

Ingenite, inborn, is any Disease, or Habit, that comes into the World with a Person, and signifies the same almost as hereditary.

Ingesta, is used for the various kinds of Bodies received as Aliment into the human Stomach.

Ingluvies, is the Gizzard of Birds, but is also applied to an inordinate or voracious Appetite.

Ingravidation, the same as Impregnation or going with Child. There are many Instances in the Histories of Physick, of Women in this Circumstance without actual Reception of the Male Embraces, from an attractive Power in these Parts of the *Virile Semen*, when accidentally brought near thereunto, as floating in a Bath, &c. but they are suspected to be fabulous.

Ingredients, from *Ingredior*, to go in together ; are all the Simples which go into the Composition of any one Medicine.

Inguen, is from the upper Part of the Thigh to above the secret Parts, and commonly called the Groin ; and

Inguinalis, is given to any Subdivisions made of that Part, or any thing therein contained, or applied thereunto as a Medicine.

Inhumation ; some Chymists have fancied thus to call that kind of Digestion which is performed by burying the Materials in Dung, or in the Earth.

Injection, from *injicio*, to cast or throw into, is any Medicine made to be injected by a Syringe, Clyster-Pipe, or any other Instrument, into any Part of the Body. It is a common Term likewise for the filling

the Vessels with Wax, or any other proper Matter, to shew their Shapes and Ramifications, often done by Anatomists.

Innate Heat. See *Calidum innatum*.

Innominatum, without a Name : many Parts of the Body are left under this indistinct Term ; as the

Innominata Glandula Oculi, now called *Caruncula Oculi*. See *Eye*.

Innominata Tunica Oculi. See *Eye*.

Innominatum Os. See *Ilium*.

Inoculation, is the grafting of one Tree upon another ; which is often so contrived as to have many different Fruits proceed from the same Stock, by grafting different Slips into its several Branches. This Term of late hath been also much used in a very different Manner, for the Practice now introduced of transplanting the Small-Pox, by Infusion of the Matter from ripened Pustules, into the Veins of the uninfected, in hopes of procuring a milder Sort than what frequently comes by Infection.

Inosculation. See *Anastomasis* and *Artery*.

Inquietude, without Rest ; is any uneasy Sensation, from what Cause soever, that prevents a Person's being at Rest or Quiet.

Insania, Madness ; which see. Some distinguish, and justly enough, between this, which is hereditary, or some other Distemper, and that which is influenced by the heavenly Bodies, and particularly the Moon, which therefore is called Lunacy.

Insectile, where *in* used in a privative Sense, as it frequently is, signifies that which cannot be further cut or divided, as in *Atom* ; but,

Insect, where *in* is taken positively, expresses such Animals as are divided into, or encompassed with Rings or Divisions, capable of being parted, without utterly destroying Life. Of these there are several

Kinds, and of which *Aldrovandus* hath given Descriptions ; but since it hath been much more accurately done by *Zwammerdam* in his *Historia Insectorum generalis*.

Infection, is variously used by Anatomists for the different Unions of the Parts with one another.

Inspid, that which hath not Taste.

Insolation, from *in Sole*, in the Sun ; is Infusion in the Warmth of the Sun.

Inspiration, from *in* and *spiro*, to breathe in ; is that Part of Respiration as draws the Air into the Lungs. See *Respiration*.

Inspissate, to thicken ; is when a Liquid is brought to a thicker Consistence by evaporating the thinner Parts : and thus Juices, as that of Liquorice, are inspissated.

Instinct, is that Aptitude, Fitness, or Disposition in any Creature, which by its peculiar Formation, it is naturally endowed with.

Institutions, are a System of Laws or Rules in any particular Science ; and so physical or medicinal Institutions are such as teach the necessary *Præcognita* to the Practice of Medicine, or the Cure of Diseases. Those of the learned *Boerhaave* are a surprizing Performance of this kind, being done with the utmost Accuracy ; but wrapped up too close to be mastered without a deal of Attention ; for which Reason it is greatly to be fear'd they are but little understood.

Integument, is used by Anatomists for any common Coverings of the Body, whether the *Cuticula Cutis*, or the Membranes of any particular Parts.

Intemperies, the same as a Dyscrasy, or ill Habit.

Intention, is that Judgment or particular Method of Cure which a Physician forms to himself from a due Examination of Symptoms. In Physicks it signifies the Increase of

any Power or Quality, as Remission is its Decrease, or Diminution ; and in Metaphysicks also it is used for the Exertion of the intellectual Faculties, with more than ordinary Vigour.

Intercostal, from *inter*, between, and *Costæ*, Ribs ; is any thing between the Ribs : hence

Intercostal Arteries, Veins, Nerves, &c. are those which branch between the Ribs ; and

Intercostal Muscles, are the external and internal, which are forty four in Number, one of each Sort being between every two Ribs ; they arise from the lower Edges of each superior Rib, and are inserted into the upper Edges of each inferior Rib. Their Fibres decussate one another ; those of the external run obliquely from the back-part forwards, but those of the internal from the Fore-part backwards ; they are thin and fleshy.

Intermittent, is a Cessation of any particular Action for some time, and that Time is called the Interval ; Thus Fevers which go off, and soon return again ; as also any other Distempers, are called Intermittents, in Opposition to those which are always continued ; and a Pulse which, after so many Strokes, stops, or loses one $\frac{1}{2}$ in its due Time, is also thus called.

Internodii, from *inter*, between and *Nodium*, a Joint ; are in Botany those little Spaces contained between any two Knots or Joints of the Stalk of a Plant ; and in Anatomy the *Extensores Pollicis*, which see, are so called.

Interossei, from *inter*, between, and *Os*, a Bone ; the Muscles which move the Fingers are thus called from their Situation, being contain'd between the Spaces of the Bones of the *Metacarpus* : some reckon 6 of them, and others 8 : the one half lie

Ne betwixt the Spaces these Bones leave towards the Palm of the Hand, and they are call'd the internal *Interossei*, arising from the upper Part of the Bones of the *Metacarpus* next the *Carpus*; and being inserted on the internal Sides of the first Bones of the Fingers with the *Lumbricales*, they are the *Adductores Digitorum*, for they bring the Fingers to the Thumb. The other half are contain'd in the Spaces that the Bones of the *Metacarpus* leave on the Back of the Hand; they rise from the upper Part of the Bones of the *Metacarpus*, next the *Carpus*, and they are inserted on the external Sides of the first Bones of the Fingers; and these are the *Aduētores Digitorum*, for they draw the Fingers from the Thumb.

Interspinales Colli, are two Muscles that in Part arise fleshy, and partly tendinous, from the Spines of the Loins, and the inferior Part of the *Thorax*, and are inserted into the fifth, sixth, and seventh Spines of the *Thorax*; these join the *Longissimus Dorsi*: on another Part they arise from the superior Parts of each double Spinal Process of the Neck, except that of the second *Vertebra*, and are inserted into the inferior Parts of all the Spines. These Muscles draw the Spines of the *Vertebrae* nearer to one another.

Intertrigo, is an Excoriation of the Thighs or Parts adjacent to the *Anus*, or what we commonly express by *Loss of Leather*, by riding. 'Tis also sometimes used to signify other kinds of chafing, or Erosion of the Skin, from internal Causes.

Intestines: These make a long and large Pipe, which by several Circumvolutions and Turnings reaches from the *Pylorus* to the *Anus*: They are knit all along to the Edge of a Membrane called the *Mesentery*, and are six Times as long as the

Body to which they appertain, that the Chyle which escapes the *Lacteals* of one Part of the Guts, may be taken up by those of the next. They are composed of three Coats, of which the first and inmost is made up of short Fibres bound together by five Blood Vessels, and disposed as those of the Stomach; for the Length of the Fibres is the Thickness of the Coat. If the *Mesenterick* Artery be carefully injected with warm Water, these will separate from one another, and become visible to the naked Eye. They act after the same Manner as those of the inner Membrane of the Stomach, for the contracting of the Cavity of the Guts. This Coat being much longer than the other, lies in Wrinkles or Plaits, called *Valvulae Conniventes*, which in the small Guts form larger Segments of Circles, and are closer to one another than in the great Guts, where they are broader, and seem chiefly design'd to sustain the Weight of the *Fæces*; whereas the others, by retarding the Motion of the Chyle, and by directly opposing the Mouths of the lacteal Vessels (which are in the upper Sides of the Valves) to its Passage, give it a more favourable Opportunity, and better Chance for entering, than otherwise it could have. This Coat has likewise a great number of little Glands, which in the small Guts lie in Clusters every where but where they are knit to the *Mesentery*. In the great Guts they are much fewer, and are placed at some Distance from one another. The use of these Glands is disputed; some think that they separate the Slime which besmeares the Inside of the *Intestines*, to defend them against the Acrimony of the Bile; but this comes more probably from some Remainders of the Chyle: Others take them for the Mouths of

the lacteal Vessels; but there are many Lacteals where there are no Glands. But if it be consider'd that they are chiefly placed where the Lacteals are most numerous, it will be found reasonable to think, that they separate a Liquor for diluting the thick Chyle, that it may the more easily enter the narrow Orifices of the lacteal Veins. The second Coat is made up of two Orders of muscular Fibres; of which one runs straight, according to the length of the Guts; the other goes round, and its Fibres are more reasonably thought to describe a spiral Line than Circles: for if, as some imagine, these Fibres were not spiral, but circular, it is not easy to conceive, how that constant and uniform Vermicular, or wave-like Motion of the Intestines, could be transmitted from Part to Part by Fibres which had no communication with one another; but which having once surrounded the Guts, are at both Ends fixed to the Edge of the *Mesentery*: whereas now, by the successive Motion of the Parts of these two Orders of Fibres, the Guts are in a continual undulation, which is called the *Peristaltick* Motion, from *πείσσω*, *contraho*, to contract. The third and external Coat is common, and comes from the *Peritonæum*.

Tho' the Intestines be one continued Pipe, yet they are divided into six Parts: three thin and small, and three thick and great. The three former are the *Duodenum*, *Jejunum*, and *Ilium*; the *Duodenum* is the first Part of the Intestines, which see under that Word: the *Jejunum* begins at the first winding of the Guts under the *Colon*, where the *Duodenum* ends; and making several turnings and windings from the left side to the right, and from the right a gain to the left, it is continued to the

Ilium, filling all the upper Part of the umbilical Region, being about twelve or thirteen Hands Breadth long. It differs from the *Ilium* only in this, that it hath some more *Venæ Lactææ*, into which the Chyle passing, it is found always more empty, and therefore call'd *Jejunum*, which signifies hungry: And the Folds of its inner Coat are nearer one another, and in greater Number than the *Ilium*. The third and last of the small Guts is the *Ilium*, about twenty one Hands Breadth long; it begins where the *Jejunum* ends, and making several turnings and windings, it fills all the lower part of the umbilical Region, and all the Space between the *Ilia*, and is continued to the Beginning of the *Colon* at right Angles; its Passage is a little narrower than that of the *Jejunum*, and its Coats somewhat thinner. This Intestine, because of its Situation, falls easily down into the *Scrotum*, by the Production of the *Peritonæum*: In it also happen the *Volvulus*, when one Part of this Gut enters the Cavity of the Part immediately above or below it. The thick and great Guts are the *Cæcum*, *Colon*, and *Rectum*: The two former are described under those Names, which See. The *Rectum* is the last of the Intestines: It is a Hand's Breadth and a half long; its Cavity is about three Fingers in Diameter, and its Coats are thicker than those of the *Colon*: It begins at the upper Part of the *Os Sacrum*, where the *Colon* ends, and going straight down, it is tied to the Extremity of the *Coccyx* by the *Peritonæum* behind, and to the Neck of the Bladder in Men, and in Women to the Neck of the Womb before, from whence comes the Sympathy between those Parts. There is very much Fat about its external Side, for which Reason it is called the Fat Gut:

Gut: Its Extremity forms the *Anus*, into which there are three Muscles inserted; the first is the *Sphincter Ani*, which is a fleshy Muscle about four Fingers broad, composed of circular Fibres, which embrace the Extremities of the *Rectum* for three Fingers Height, and which hang over it another Finger's breadth: It is connected forward towards the *Acceleratores Urinae* in Men, and to the Neck of the Womb in Women, and backwards to the *Os Coccygis*. Its Use is to shut the Passage of the *Anus*, which the Weight of the *Fæces* opens. The other two Muscles are the *Levatores Ani*; they arise from the internal and lateral Side of the *Os Ischii*, and are inserted into the *Sphincter Ani*; they draw the *Anus* upwards. See *Mesentery*.

Intumescence, from *intumesco*, to swell up; is any Tumour or Swelling.

Invalescentia, and **Invaleitudo**, where *in* is taken privatively, is the want of Health; whence *Invalid*, is one disabled by sickness from service.

Investigate, is used for the same as enquire or search out, but most commonly by Mathematicians for the Solution of Problems.

Inveterate, is applied to Diseases in the same Sense as obstinate, and generally likewise supposes a long Continuance; but the Distinctions which some Writers make between this and *Chronical*, are hardly worth mentioning here.

Involucrum, is said of any common Covering of particular Parts in the Body; whence,

Involucrum Cordis, is the *Pericardium*; which see.

Involuntary, is said of any natural Excretion, which happens thro' Weakness or Want of Power to restrain it; as also of all convulsive Motions, where the Muscles are invigorated to Action, without the Consent of the Mind.

Inuision, is sometimes used for hot and dry Seasons; but most commonly by Surgeons for the Operation of the *Cautery*.

Iris. See *Eye*.

Irritation, is a Species of *Stimulus*, expressing a lesser Degree of it, than Vellication or Corrugation.

Irradiation, is an Emanation, or shooting out of subtile *Effluvia* from one Body to another. See *Quality*.

Irregular Bodies, are Solids not terminated by equal and like Surfaces.

Ischium, from *ἰσχύω*, *sustineo*, to sustain, is one of the *Ossa innominata*, which see; hence *Ischias*, and *Ischiadick*, are used for the Hipgout, and Pains of that Part.

Ischuria, from *ἰσχω*, *cohibeo*, to restrain, and *ὑρῶν*, *Urina*, Urine; is a Stoppage of Urine, whether by Stone, Gravel, or any other Cause.

Ischureticks, are such Medicines as force Urine when suppressed.

Isthmus, signifies strictly a Neck of Land, and is therefore used by Anatomists for such Parts as in their Situation have any Resemblance thereunto; as that Part which lies between the Mouth and the Gullet, and the Ridge that separates the Nostrils: There is also a Contrivance in the *Vena Cava*, which see, thus called.

Itinerarium, the same as *Cather*; which see.

Jugular Arteries, and **Veins**. See *Arteries* and *Veins*.

Jugulum, the same with *Furcula* and *Clavicula*; which see.

Julap, from the *Persian* Word *Jaleb*, which signifies a sweet Potion. This is an extemporaneous Form of Medicine, made of simple and compound Water sweetned, and serves principally for a Vehicle to other Forms not so convenient to take alone.

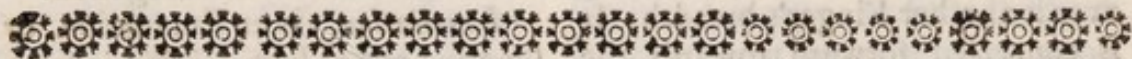
Julus, is a Term which Botanists give to those long Worm-like

like Tufts or Palms, as they are called in Willows, which at the Beginning of the Year grow out, and hang pendulous down from Hazels, Walnut-Trees, &c.

Juncture, is any kind of Joint, or closing of two Bodies.

Jupiter, is used by the Chymists for Tin, because supposed under the Government of that Planet.

Juxta-position, from *juxta*, nigh, and *pono*, to put, is that Disposition of Parts in any Body, whereby they are joined and combined together.



K.

K*ibes*, is a Stagnation of the Blood in the Hands or Feet, but especially in the Heels, attended with Inflammation, Heat, Pain, Tumefaction, and Itching. They sometimes suppurate, but often go away of themselves without breaking, if the Part be defended from the external Cold.

Kidneys: These are two in number, one on each side: they have the same Figure as Kidney-beans: their length is 4 or 5 Fingers, their breadth 3, and their thickness 2: the right is under the Liver, and the left under the Spleen. In a *Fætus* their external Substance is divided into several Lobes joined together, which in Adults become more close; therefore their Superficies is equal and smooth. They have two Membranes, the one common for the *Peritonæum*, the other proper: they are ordinarily cover'd with much Fat; their Colour is a dark red.

There are in the Kidneys Lymphatick Vessels, which discharge themselves into *Pecquet's Reservatory*, i. e. the common Receptacle: Nerves, which come from the Intercostals; Veins, which go to the *Cava*; and their Arteries come from the *Aorta*. These Veins and Arteries are call'd Emulgents, they pierce the Reins or Kidneys on their concave Sides (which lie nearest the *Cava* and *Aorta*) included in one Cap-

sule, and are divided into several Branches, which surround the *Pelvis*. These Branches are again divided into an Infinity of others less, which go to the external Part of the Reins, where they inosculate, and form a sort of Net, from which their Extremities coming, terminate in an Infinity of little Glands. These Glands are of a round Figure, and compose the outer Substance of the Reins, which is half a Finger thick; from each of those goes a long small Tube, which Tube composes the inner Substance of the Reins. As they approach the *Pelvis* or Bason, they gather together in little Bundles, whose Extremities piercing the Membrane of the *Pelvis*, form those little Protuberances on the Inside of the *Pelvis*, call'd *Papillæ*. The *Pelvis* or Bason is a Cavity in the middle of the Kidneys form'd by a Dilatation of the *Ureters*. It sends out several Ramifications, which divide the urinary Tubes into Bundles, and which make a sort of *Capsula* to the Blood Vessels.

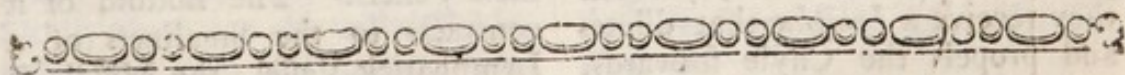
The Use of the Kidneys is to separate the Urine from the Blood, which by the Motion of the Heart and Arteries, is thrust into the Emulgent Branches, which carry it to the little Glands, by which the Serosity being separated, is receiv'd by the Orifice of the little Tubes, which go from the Glands to the *Pelvis*,
from

from thence it runs by the *Ureters* into the Bladder. The Blood which could not enter the Glands is brought back by the emulgent Veins. The Urine thus separated consists of much Salt floating in Water; on which Account it is that the Kidneys have their Situation so near the Heart: for were they at a greater Distance, other Particles must have united with the Salts and aqueous Particles (as in the present Station some terrestrial Particles do) and disturbed their Secretion; besides the Impossibility of their having such a Quantity of Blood wash thro' them at a more distant Station.

In the middle between the *Aorta* and Kidneys, a little above the emulgent Vessels, are situated the *Glandulae Renales*, or *Capsulae Atrabiles*; they are two in Number, one on each Side, wrapt up in some Fat; they sometimes change their Situation, and their Figure is also various; for in some they are round, in others square, triangular, or of an irregular Figure; the right is ordinarily bigger than the left, and each about the Bigness of a *Nux Vomica*. In a *Fœtus* they are almost as big as the Kidneys. They are covered with a fine Membrane, and within they have several small *Sinus's* which contain a blackish Sort of Liquor. Their Blood-Vessels are Branches sometimes of the *Vena Cava* and *Aorta*, and sometimes of the Emulgents. The intercostal Nerve fur-

nishes a Branch which makes a *Plexus* upon them. Their Use is not yet known: Some think they separate a Liquor from the Arterial Blood, for diluting the Blood, which is too thick after it comes from the Kidneys.

The *Ureters* are two long and small Canals which come from the Basen of the Kidneys, one on each Side; they lie betwixt the Doublings of the *Peritonæum*: and descending in the Form of an S, they pierce the Bladder near its Neck, where they run first some Space between its Coats, and then they open in its Cavity: They are composed of three Coats; the first is from the *Peritonæum*; the second is made of small oblique muscular Fibres; and the third, which is very sensible, has several small Glands which separate a slimy Liquor, to defend it against the Acrimony of the Urine. The neighbouring Parts furnish them with Blood-vessels, and their Nerves come from the Intercostals, and from the *Vertebrae* of the Loins. Their Cavity is contracted sometimes in three or four Places, especially towards the Bladder. Such as are subject to the Gravel, and given to excessive Drinking, have them sometimes so much dilated, that you may put the End of the little Finger into them. Their Use is to carry the Urine from the Kidneys to the Bladder. Their Obstruction causes a Suppression of Urine.



L.

L *Abra*, or *Labia*, strictly signifies the Lips, but is used figuratively to express many other Parts of a human Body, that by their Figure have

any Resemblance thereunto; as the *Labia Pudenda*, are the exterior Parts of a Woman's Privities, &c. and the Lips of Wounds are also thus

thus called. See *Mouth*.

Labial Glands. See *Mouth*.

Labiata Flowers. See *Flower*.

Laboratorium, from *Labor*, Work, is any Work-Room, but is chiefly given to those of Chymists, where their Furnaces, &c. are built.

Labyrinth, part of the *Ear*, which see, is so called.

Lac, Milk. See *Breasts*.

Lachrymal Ducts,

Lachrymale Punctum, and

Lachrymæ, Tears. See *Eye*.

Lactation, from *Lac*, Milk: is giving suck, and signifies the Time a Woman does that Office to a Child.

Lacteal Veins: These are long and slender Pipes, whose Coats are so thin as to become invisible when they are not distended with Chyle or *Lympha*. They arise from all the Parts of the small Guts by fine Capillary Tubes, which as they run from the Sides of the Guts to the Glands in the Mesentery, unite and form larger Branches; these are called *Venæ lacteæ primi generis*. The Mouths of these Lacteals, which are open into the Cavity of the Guts, from whence they receive the Chyle, are so small as not to be seen by the best Microscope. It was necessary they should be smaller than the finest Arteries in the Body, that nothing might enter which might stop the Circulation of the Blood. The same Extremity of the Lacteals has likewise communication with the capillary Arteries of the Guts, by which they receive a *Lympha* that dilutes and propels the Chyle forwards, and washes the Lacteals and Glands, that they may not sur, and be obstructed by the Chyle's staying in them upon fasting. The other Extremity of the Lacteals discharges the Chyle into the vesicular Cells of the Glands dispersed up and down

the Mesentery. And from these arise other Lacteals of a larger Size, which carry the Chyle immediately into the *Receptaculum Chyli*; they are called *Lactææ secundi generis*. The Lacteal Veins have Valves at several Distances, which hinder the Chyle from returning back into the Intestines. *Affellius*, who first discover'd the Lacteal Vessels in the Year 1622, and his Followers, thought they carried the Chyle to the Liver, till *Pecquet*, in the Year 1651, found out the *Receptaculum Chyli*, or common Receptacle, and *Ductus Thoracicus*, or Thoracick Duct; tho' both were accurately described by the learned Anatomist *Bartholomæus Eustachius*, many years before the Discovery of the Lacteal Veins.

The Receptacle of the Chyle is easily found in living Bodies, but with greater Difficulty in those that are dead. It lies between the descending Trunk of the great Artery, and the *Vertebræ* of the Loins, and is biggest between the Cæliac and Emulgent Arteries, surrounded by several vesicular Glands, call'd *Glandule Lumbares*, which discharge their *Lympha* into it. The Receptacle receives all the second Order of *Lacteals*, as well as all the Lymphatick Veins both of the Legs, and of all the Parts of the *Abdomen*; so that it seems to be indeed only a Bag (which will contain about 1 Ounce of Water) formed by the Union of these Vessels. The Bottom of it contracts to the Smallness of a Lymphatick Vessel, the Middle is sometimes divided into two or three Parts, and the upper Part stretches itself out into a Duct about the Bigness of a Goose-quill. This Duct ascends into the *Thorax* behind the great Artery; and about the Heart it frequently divides into two or three

three Branches, which immediately unite again into one, and creeping along the Gullet, it marches to the left *Subclavian* Vein, where it opens at one or two Orifices, which are cover'd with a semilunar Valve, that the Blood may pass over them, and the Chyle run from underneath it, and mix with the Blood in the Veins. The *Ductus Thoracicus* has Valves at several Distances, which hinder the Chyle that has once passed them from falling back. It receives the Lymphaducts from the several Parts in the Chest, as it passes along to the *Subclavian* Vein. By its running up to the left Side, the Chyle receives a new *Impetus* from the Pulsation of the great Artery; whereas on the right Side it must have ascended only by the Pressure of the Diaphragm, and Muscles of the lower Belly upon the Receptacle, which it equally enjoys in its present Situation.

Lacunæ. See *Parts of Generation proper to Women.*

Lætificans, strictly signifying to make joyful, hath been applied to many Compositions under the Intention of Cordials; but both the Medicines and Distinction are now almost quite in Disuse.

Lambative, from *lambo*, to lick. See *Eclegma.*

Lambdoides. See *Suture.*

Lamellæ, and,

Laminæ, Plates, signify pretty much the same; but the former is generally applied to the Division of Shells, and the latter to that of the Skull, which are also called Tables, being only two in Number: Tho' most Shells are divisible into a great many such Plates lying over one another.

Laminated, plated, signifies such Bodies whose Contexture discovers such a Disposition as that of Plates

lying over one another.

Lancet, the common Instrument of the Surgeons, with which they let Blood.

Langor, and *Lassitude*, signifies a Faintness, which may arise from Want or Decay of Spirits, thro' Indigestion, or too much Exercise; or for an additional Weight of Fluids, from a Diminution of Secretion by the common Discharges. The first is remedied by Stomachicks and Cordials, and the latter by timely Evacuation.

Lanugo, signifies a Down, or soft woolly Substance which grows upon some Plants; which therefore are called

Lanuginous Plants.

Lapidescent, from *Lapis*, a Stone; is that which has a Property of turning any Bodies into a stony Nature, as many Spring-Waters will do to Pieces of Wood and other like Substances: and is the same as *Petrifying*. *Paracelsus* calls the same Faculty in an human Body,

Lapillation.

Laryngotomy, from *Larynx*, and *τέμνω, seco*, to cut, is that Operation where the Fore-part of the *Larynx* is divided, to assist Respiration, during large Tumours upon the upper Parts; as in a Quinsey. &c. Tho' the common Prejudices against this are so strong, that many are lost for want of it. *Aquapendens* particularly directs this Operation, *De Opr. Chirurg.* under the Title, *De Perforatione asperæ Arteriæ in Angina*; and *Aurelius Severinus* does the same, *Chir. Efficac. Part II. Cap. 40.*

Larynx, *Ἀδρυξ*, is the upper Part of the *Trachea*, and lies below the Root of the Tongue before the *Pharynx*. It is composed of five Cartilages, which sometimes in old Men become as hard as Bones. The first

first is the *Thyroides*, or *Scutiformis*, because of its Figure *Jue's*, signifying a Shield, and *Ed G*, Figure. It makes that Protuberance in the Fore-part of the *Larynx*, called *Pomum Adami*. It is a thin Cartilage, about an Inch broad, but not so long; it is concave within, and convex without. Its four Angles have each a small Production; the two upper, which are longer, are tied to the Horns of the *Os Hyoides*, and the two lower to the second Cartilage, which is called *Annularis*, because it resembles a Ring. It is very large and thick behind, which Part resembles the Stone of a Ring, and it grows narrower towards its Fore-part. It is situated below the other Cartilages of the *Larynx*; they stand upon it as upon a Basis, and by it they are tied to the *Trachea*. The third and fourth are alike, and have one common Name, which is the *Arytenoides*. They reach from the Middle of the concave Sides of the *Thyroides* to the upper and back Part of the *Annularis*; and they make that Chink, or *Rimula*, which is the Mouth of the *Larynx*, called *Glottis*. Betwixt those and the Sides of the *Thyroides*, there are two small Cavities on each Side, formed by the Muscles and Membranes which join them together; in which, if a little Drink or Bread fall, as sometimes happens when one laughs or speaks in Eating or Drinking, it causes a violent Cough, and a great Tickling. The fifth and last Cartilage is the *Epiglottis*; it is of a softer Substance than the others, and resembles a little Tongue. It is tied by its Basis to the upper and middle Part of the concave Side of the *Thyroides*. Its Use is to cover the *Glottis* in Eating and Drinking; for the Aliments by their Weight press it close down

upon the *Glottis*, and they pass over, without entering the *Larynx* into the *Oesophagus*: but when the Aliments are past, the *Epiglottis* by its natural Resort, which is common to all Cartilages, lifts up again, and gives way to the Air in breathing. Whilst we speak or laugh, the *Glottis* must necessarily be open for the Passage of the Air in breathing, therefore it is not convenient to speak whilst we swallow.

The *Larynx* has two Pair of common Muscles, and five Pair proper. The first of the common Muscles is the *Sternothyroides*. It arises from the upper Part of the Inside of the *Sternum*, and ascending on the Sides of the *Trachea*, it is inserted to the lower Part of the Sides of the *Cartilago Scutiformis*. When these Muscles act, they pull this Cartilage downwards. The second is the *Hyothyroides*. It arises from the lower Part of the *Os Hyoides*, and descending is inserted in the lower Part of the *Scutiformis*, near the former. They pull up the *Larynx*. The first of the proper Muscles is the *Cricothyroides*. It arises from the Fore-part of the Cartilage *Cricoides*, and running under the *Thyroides*, it is inserted into the Inside of that Cartilage. The second is the *Crico-Arytenoides lateralis*. It ariseth from lateral Part of the *Cricoides*, and ascending is inserted into the lateral Part of the *Arytenoides*. This dilates the *Arytenoides*. The third is the *Crico-Arytenoides posticus*. It arises from the back-part of the Cartilage *Cricoides*, and is inserted into the *Arytenoides*, near the former. The fourth is the *Thyro Arytenoides*. It ariseth from the internal and concave Side of the *Scutiformis*, and is inserted into the Fore-parts of the *Arytenoides*. It contracts the *Rimula*.
The

the fifth Muscle is the *Arytenoides*. It runneth upon the upper Part of the Cartilage *Arytenoides*, and with its Fellow forms a Sphincter for contracting the *Rimula*.

The *Larynx* receives Veins from the *Jugulars*, Arteries from the *Carotides*, and Nerves from the *Recurrent*.

On the lower Part of the *Larynx*, upon the Sides of the annular Cartilages, and of the first Ring of the *Trachea*, there are two Lymphatick Glands, called *Thyroideæ*, of the Figure of a Pear; their Colour is red: they have Veins, Nerves and Arteries, as the *Larynx*.

The Use of the *Larynx* is not only to form the Voice, but also, by the different Apertures of its *Rimula*, the Lungs are more or less compressed by the Air; for if the Aperture of the *Larynx* had been as wide as the *Aspera Arteria*, the Lungs could have suffered little or no Compression. Had it not been for the *Larynx*, we could have received no Benefit by breathing; for if the Mouth of the *Aspera Arteria* had been large and wide, the Air had not resisted that Force by which it is thrust out in Expiration, so as to make any Compression upon the Lungs, whereby the Globules of the Blood could have been dissolv'd, or the Particles of both Fluids mixed together, which we find so necessary to Life, that we die without it. Nor does the *Larynx* only preserve Life, but it likewise conduces to render it happy and agreeable, by forming the Voice, which is the Sound of the Air drove thro' the narrow Chink of the *Glottis*, with a Velocity greater than in an ordinary Respiration. This Sound is increased by the Cavities of the Mouth and Nose, which resound like the hollow of a Violin,

as is evident by the trembling to be felt in the Nose while we speak. And these Cavities not only encrease, but also conduce to the Agreeableness of the Voice; for how disagreeable is the Alteration of the Voice, which follows a Loss or Stoppage of the Nose? And the Dimensions of the Mouth are always proportioned to the Notes formed in the *Glottis*; low Notes being constantly attended with a Prolongation, and high Notes a Contraction of its Cavity. The Notes themselves are formed by the different Apertures of the *Glottis*: for when the *Glottis* is contracted, the Air being drove by an equal Force, must move more swiftly; and the Sides of the *Glottis* being more tense, their Vibrations must be quicker and shorter, and consequently the Note high. The contrary happeneth when the *Glottis* wideneth. Each Note is capable of all Degrees of Strength; for the Strength of the Voice is always proportionable to the Quantity of Air thrown out of the *Larynx* in sounding of the same Note. Now, if the Strength of the Note is to be encreased, the Diaphragm, but more especially the muscular Fibres of the *Trachea Arteria*, contract more strongly, and thrust out a greater quantity of Air; and the Aperture of the *Glottis* encreases proportionably, that this great Quantity of Air may pass thro' with the same Velocity as before, and that the same Note may be continued. Now supposing the greatest Distance of the two Sides of the *Glottis* to be one tenth Part of an Inch in sounding of twelve Notes, to which the Voice easily reaches, this Line must be divided into twelve Parts, each of which gives the Aperture requisite for such a Note, with a certain Strength. But if we consider the

Sub-

Subdivision of Notes into which the Voice can run, the Motion of the Sides of the *Glottis* is still vastly nicer; for if of two Chords sounding exactly Unisons, one be shortened $\frac{1}{2500}$ th Part of its Length, a just Ear will perceive the Disagreement: and a good Voice will sound the Difference, which is $\frac{1}{190}$ th Part of a Note. But because this is a great Nicety, we will only suppose that Voice can divide a Note into a hundred Parts, from thence it will follow that the different Apertures of the *Glottis* actually divide the tenth Part of an Inch into 1200 Parts, the Effects of each of which produces a sensible Alteration upon a good Ear. But because each side of the *Glottis* moves just equally, therefore the Divisions are just double, or the Sides of the *Glottis*, by their Motion, do actually divide one tenth Part of an Inch into 2400 Parts.

Lassitude, Lassitudo, Weariness. This generally expresses that weariness which proceeds from a distemper'd State, and not from Exercise, because that wants no Remedy but Rest; and proceeds from an Encrease of Bulk, from a Diminution of proper Evacuation, or from too great a Consumption of that Fluid which is necessary to maintain the Force and Spring of the Solids, as in Fevers and Convulsions; or from a viciated Secretion of that Juice, whereby the Fibres are not supplied either in due Quantity or Quality. The Remedy in the first Case is Evacuation; in the latter, proper Diet, or such alterative Medicines as influence such a Secretion.

Latialis Morbus, the Side-Disease; some thus call the Pleurisy.

Latissimus Dorsæ, from *latus*, broad, is a Muscle so called from its Shape,

covering almost the whole Back. It hath a thin, broad, tendinous Beginning, which comes from the posterior Part of the Spine of the *Ilium*, from the superior Spines of the *Os Sacrum*, from all the Spines of the *Vertebræ* of the Loins, and from the seven lower of the *Thorax*; it passes by the inferior Angle of the *Scapula*, from which some of its fleshy Fibres sometimes arise, and is inserted with the *Teres Major* by a strong and broad Tendon, with which it pulls the Arm downwards.

Latitude. It is well known what Signification this generally bears; but by Latitude of Health, to which Physicians only apply it, is understood that Deviation from a certain Standard of Weight and Bulk, which a Person can admit of without falling into a Disease; and concerning which *Sanctorius* hath given some excellent Aphorisms in his *Medicina Statica*.

Laxative, signifies loose in Body, so as to go frequently to stool. And,

Laxative Medicines, are such as promote that Disposition; which they do by some smooth softening Quality, taking away all Tensify of the Fibres, and facilitating the Passage of the Contents of the intestinal Tube thro' it: for which reason all oily Substances come under this Class.

Laxity of a Fibre, is that degree of Cohesion in its Parts, which a small Force can alter so as to increase its length beyond what is natural; and therefore is a Species of Debility.

Lectisternium, is used by some Writers for all that Apparatus, which is necessary for the Care of a sick Person in Bed. And,

Lectualis,

Lectualis, is said of a Person whose Distemper requires him to be confined in Bed; signifying the same as *Clinicus*, κλινικός, amongst the Greeks, from κλίνη, *Lectus*, a Bed.

Legumen, in Botany, signifies that Species of Plants which is called *Pulse*; and these are so named, because they may be gathered with the Hand without cutting. All those Plants, which have a *Papilionaceus*, or Butterfly-like Flower, are reckoned by Mr. Ray among the *Legumina*.

Lemma, is a Term used chiefly by Geometrical Writers, and signifies a Proposition, which serves previously to prepare the Way for the more easy Apprehension of the Manner and Steps by which some Theorems are demonstrated, or for the Construction of some Problem. Thus to prove that a Pyramid is $\frac{1}{3}$ of a Prism, or Parallelopiped of the same Base and Height with it; the Demonstration of which in the ordinary Way being difficult and troublesome, this *Lemma* may be premised, which is proved in the Rules of Progression: *That the Sum of a Series of the Squares of Numbers in arithmetical Proportion beginning from 0, and going on 1, 4, 9, 16, 25, 36, &c. is always subtriple of the Sum of as many Terms equal to the greatest; or is always $\frac{1}{3}$ of the greatest Term, multiplied by the Number of Terms.* Thus also to find the Inflection of a curve Line this *Lemma* is first premised: *That a Tangent may be drawn to the given Curve in a given Point.* Thus likewise in Physicks, to the Demonstration of most Propositions, such *Lemmata* as these are necessary first to be allow'd: *That there is no Penetration of Dimen-*

sions: That all Matter is divisible; and the like. As also in the Theory of Medicine; *That where the Blood circulates, there is Life, &c.*

Lens, is a Term in Opticks for a convex or concave Glass that is made to throw the Rays of Vision into a Point; whence also the crystalline Humour of the Eye, from its Performance of the same Office, is by some Anatomists so called.

Lenticula, is used either as a Diminutive of the foregoing, or in the same Sense as *Lentigo*, which see underneath, or for a particular kind of Fever, the same as *Petechialis*, which throws upon the Skin little Spots, like Fleabites, but somewhat larger; in which last Sense, *Langius Forrestus*, and some others, use it. *Peierus* likewise, *Exercit. de Glandulis Intestinalibus*, calls the Glands of the larger Guts, which spue out a Slime for lubricating their inner Membranes, *Glandulae Lenticulares*.

Lentigo, signifies a freckly or scurfy Eruption upon the Skin; such especially as is common to Women in the Time of Child-bearing. Some Authors are more nice in distinguishing several kinds of this Eruption, and diversifying them by hard Names, than it is worth any body's Time to give regard to.

Lentor, hath been used by some ancient Writers to Purposes now in neglect; and at present is chiefly retained from the Example of *Bellini* to express that sily, viscid; coagulated Part of the Blood, which in malignant Fevers obstructs the capillary Vessels, and is the chief Instrument of all those Mischiefs which then happen; see *Bellini de Febris*; particularly

Prop. 19 and 20. but chiefly the *Introduction* to an *English Translation* of *Bellini* on that Subject.

Leo, besides its Application to a particular Animal, commonly known, is also by Physical Writers used in various Senses; as for a Disease known to the *Greeks* by the Name of *λεοντίασις*, which is a Species of a Leprosy, the same as *Elephantiasis*; but the Chymists have most grievously tortured it, by applying it to several of their Whimfies, now too much in Contempt, to deserve any Notice here.

Lepidoeides, from *λεπίς*, *Squamma*, a Scale, and *εἶδος*, *Forma*, a Shape; is applied to some of the Sutures of the Head; as is *Lepidosarcoma*, by *M. Aurel. Severinus* to some fleshy Excrescencies resembling Scales in Shape.

Leporina Labia, is when the upper Lip hath a natural Defect in the Middle, like a Slit towards the Nose, resembling that of an Hare, whence it is commonly called an Hare-Lip; *Sennertus* calls the same *Rostra Leporina*; and the *Greeks* expressed the same by *λαγόχελαι*, *λαγῶς*, signifying the same as *Lepus*.

Lepra, Leprosy; is undoubtedly from the same Derivation as *Lepidoeides*, being a scurfy Eruption upon the Skin; and seems to have been a Distemper much more common among the Ancients, and in warmer Climates, than among us in this Part of the World; or else they have been nicer in distinguishing it into several Kinds than it deserved; as may be seen in most of the Commentators upon the Ancients, and especially the Lexicographers. The greatest Difference of it seems most to be owing to the Difference

of Climates, and Ways of Living: Hence the *Lepra Græcorum*, and *Lepra Arabum*, appear differently described; but it concerns us to know little of those Matters, or their Method of Cure, these northern Leprosies requiring a more efficacious Managment, as they will not give Way but to the most powerful *Mercurials*: tho' the Addition of Bathing is a greater Help than most by their Practice seem to be sensible of.

Lethargy, *λήθαργος* or *ληθαργία*, from *λήθη*, *Oblivio*, Forgetfulness; is a Distemper where there seems to be an utter Loss of all the rational Powers, and Inaptitude to Motion; whence some have fancy'd to call it *Desidia obliviosa*. *Stimuli* are therefore chiefly used in its Cure.

Levatores Ani. See *Intestines*.

Levator Scapulae, is a Muscle which arises from the second, fourth, and fifth of the transverse Processes of the Neck, by so many distinct Beginnings, which unite, and are inserted into the superior Angle of the *Scapula*, which it draws upward, the Word *Levator* importing a Lifter-up. It is also called *Musculus Patientiae*, because it is used to express Grief.

Leuce, *λευκή*, by the *Latins*, *Alba Vitiligo*, and *Lepra alba*, is a Species of the *Leprosy*, where the Eruptions are whiter and smoother; but not so essentially differing, as to require any thing particular in its Cure.

Leucophlegmatick, from *λεύκον*, *album*, white, and *φλέγμα*, *Pituita*, Phlegm; signifies such a Constitution of Body where the Blood is of a pale Colour, viscid, and cold, whereby it stuffs and bloats

bloats the Habit, or raises white Tumours in the Feet, Legs, or any other Parts; and such are commonly Asthmatick and Dropfical; because also in the Green-Sickness, as it is commonly call'd, Girls are of this Complexion, that is frequently signified by the same Term.

Leucorrhœa, λευκῶρροια; *Gonorrhœa muliebris*, or *Fluor albus*, is met with in some few Authors, for the Distemper most commonly known amongst us by the Name of the *Whites*.

Levigation, from *lævis*, smooth, is reducing hard ponderous Bodies, such as Coral, Tutty, and the precious Stones, into a light subtile Powder, by grinding upon a Marble Stone with a Muller, as Painters do their Colours. This is much used in Pharmacy; but unless the grinding Instruments are extreamly hard, they will so much wear away, as to double sometimes the Weight of the Medicine so managed.

Levity, is the Diminution or Want of Weight in any Body when compared with another that is heavier, and in this Sense it is opposed to Gravity. The Schools have maintained that there is no such Thing as *positive* or *absolute* Levity, confounding themselves with the Subtlety of useless Distinctions; but to what has been before said under *Gravity*, it may be further added here, that both Experience and the common Sense of Mankind demonstrate it to us, that Bodies tend towards the Earth, if not interrupted, in straight Lines, some slower, and some faster, as also in all other Fluids as well as Air. Thus Gold is said to be specifically heavier than Cork, because under equal

Dimensions the Gold will sink in, and the Cork swim upon Water; and for the same Reason also is Gold heavier both than Cork and Water: The Reverse of which is the Case of Levity, as *Archimedes* hath demonstrated, *That a solid Body will float any where in a Fluid of the same specifick Gravity, and a lighter Body will keep above a heavier*. The Reason of this is, because of all Bodies falling towards the Earth, those which have a like Number of equal Parts have equal Gravity, since the Gravity of the Whole is the Sum of the Gravity of all its Parts. Now any two Bodies have an equal Number of equal Parts, if under the same Dimensions there are no Intervals destitute of Matter: whence it follows, that as no Portion of Matter is so small, but that Body, in which it is contained, may be wholly divided into Parts equally as small, there can be no Reason for the Descent of *these*, which is not the Reason for the Descent of that. From whence it may be concluded, that those Bodies, which do not equally gravitate under the same Dimensions, do not contain the same equal Portions of Matter; and therefore, when we see that a Cube of Gold does subside in Water at the same time that an equal Bulk of Cork swims upon it, the Gold must have a greater Number of equal Parts of Matter under the same Bulk than the Cork, or the Cork must have a greater Number of Vacuities, void of Matter, than the Gold; and that there are also in the Water a greater Number of Vacuities than in Gold. Hence we have a clear Idea both of Density, or Gravity, and of Levity; and know that the latter

cannot in a strict Sense be accounted any Thing positive, because it is only a Negation or Absence of Body, which makes that Body not so heavy as any other that contains more Matter: that is, in other Words, lighter.

Libido, strictly signifies Vene-
real Desire; but is used, by some
Writers, to express any strong In-
clination, as to forward the natu-
ral Excretions by Stool or Urine,
or to scratch, in some cutane-
ous Distempers, which occasion
Itching.

Lientery, from *λεῖον*, *leue*,
smooth, *έντερον*, *Intestinum*, Gut,
and *ρέω*, *fluo*, to flow; is a par-
ticular Looseness, or *Diarrhœa*,
wherein the Food passes so sud-
denly thro' the Stomach and Guts,
as to be thrown out by Stool with
little or no Alteration. Its Cure
is perform'd by the warm Astrin-
gents.

Ligament, from *ligo*, to bind;
is a white and solid Body, softer
than a Cartilage, (which see) but
harder than a Membrane; they
have no conspicuous Cavities, nei-
ther have they any Sense, lest they
should suffer upon the Motion of
the Joint. Their chief Use is to
fasten the Bones, which are ar-
ticulated together for Motion, lest
they should be dislocated with Ex-
ercise.

Ligamentum Annulare. See
Carpus.

Ligamentum Ciliare. See *Ciliare*
Ligamentum.

Ligamentum Latum, and

Ligamentum Rotundum. See *Gene-
ration Parts of, proper to Women*.

Ligature, signifies any Thing that
is tied about a Part of the Body,
much in the same Sense as the Sur-
geons use Bandages.

Light. This is a Phænomenon
that has employ'd the nicest En-
quiries of very great Philosophers,
so that there has been a great
deal said thereupon; but it suf-
ficeth for our Purpose to know,
that it is really a Body, tho' in
extremely small Particles. Mr.
Romer first demonstrated, from
Observations on the Eclipses of
the Statellites of *Jupiter*, that its
Progress from the Sun to our
Earth is not above ten Minutes.
Since, therefore, the Earth is, at
least, 10000 of its own Diame-
ters distant from the Sun, there-
fore, must the Light run 1000 of
these Diameters in a Minute,
which is above 100000 Miles in a
Second. And, if a Bullet, mo-
ving with the same Celerity with
which it leaves the Muzzle of a
Cannon, requires 25 Years to pass
from the Earth to the Sun, as
Huygens has computed, then will
the Velocity of Light, to that of
a Cannon-ball, be as 25 Years to
10 Minutes, which is above
1000000 to 1. So that the Par-
ticles of Light move above a
Million of Times swifter than a
Cannon-bullet; from which great
Rapidity of Motion very strange
Effects may be effected: For
the *Momentum* of any Body, in
Motion against another, is as a
Rectangle under the Magnitude
and Celerity of the moved Body;
and this is surprizingly enough
manifest in the common Effects
of a Burning-Glass, how great a
Force they have, when collected,
by such a Contrivance, into a
small Compass of Action. Dr.
Hook has demonstrated, that the
Power or Force of Light de-
creases, in a quadruplicate *Ratio*
of the Distances reciprocally, or

is the squared Squares of the Distances reciprocally taken; and consequently, that the Effect of Light, or the Motion it causes in other Bodies, will be in a subduplicate Proportion of the Powers, and therefore, only in a duplicate Proportion of the Distances reciprocally taken. He has shewn also, that the Length of the Strokes of the Pulses of Light are in a duplicate Proportion of their Distances reciprocally. Suppose then, that the Length of the Pulse, from the Centre outwards at the Body of the Sun, should be one Inch, the Length of the Pulse of Light here with us, would not be the 1000000th Part of the Thickness of an Hair; yet the Eye is so contriv'd, that the Strength of the Pulse, which was destroyed by so great a Distance, is restor'd again to a good Measure of its first Power: for as in diverging Rays, the Length of the Pulse decreases in a duplicate Ratio of the Distance, so in converging Rays, it increases in that Ratio, and in a contrary Order.

Hence we may pronounce, that Light is always proportionable to the Density of Rays that produce it; and that Density always is in all Places, or at all Distances from the Centre of Radiation, as the Squares of such Distances reciprocally. From whence it is manifest how vainly they attempt, who pretend to increase Light uniformly, that is, equally throughout the whole Sphere of a luminous Body, or radiating Point. It is probable also, that Bodies and Light act mutually upon one another: Bodies upon Light, in emitting, reflecting, refracting, and inflecting it; and Light on Bodies, by

heating them, and putting their Parts into a vibrating Motion, wherein Heat in a great Measure, consists: For, all fix'd Bodies, when heated beyond a certain Degree, do emit Light, and shine; and this Shining, and Emission of Light, is probably caus'd by the vibrating Motion of the Parts; and all Bodies abounding with earthy Particles, and especially, if they are sulphurous, and their Parts sufficiently agitated, do emit Light, whatsoever Way such Agitation is brought about. Thus, Sea-water shines in a Storm; Quicksilver, when shaken *in Vacuo*; Cats, or Horses, when rubb'd in the dark; and Wood, Fish, or Flesh, when putrefy'd. For a further Account hereof, and its physical Effects on other Bodies, see Dr. Hook's *Opera Posthuma*, Molyneux's *Opticks*, Reflections of F. Malbranche, in the *French Memoirs of the Academy of Sciences*, A. D. 1699. Cheyne's *Mathematical Principles of Natural Religion*, Sir Isaac Newton's *Opticks*, Hawksbee's Experiments before the Royal Society, and others.

Limomachia, and *Limoſtonia*, are used by Hippocrates, and some others of the Antients, to express the utmost Distress from Hunger; whence probably,

Limologia, or *Loimologia*, comes to be used for any Treatise of a Pestilence, from λιμός, Fames, Hunger, because such Calamities have been often observed the Consequences or Attendants of Famine.

Limb, by Mathematicians, is us'd to signify the outer most Border of any Thing; and from them transfer'd to the same Purposes in Physicks.

Lingus, the same as *Lambative*, probably from the same Derivation, or from *Lingua*, the Tongue, because it is a Form of Medicine to be lick'd up with the Tongue. See *Eclegma*.

Linea alba, signifies a white Line, and is therefore given, by Reason of its Colour, to that Line which reaches from the *Cartilago Eniformis* to the *Os Pubis*, and is made by the Union of the Tendons of the oblique and transverse Muscles, dividing the *Abdomen* in two in the Middle. This receives a Twig of a Nerve from the Intercostals of each of its Digitations, or Indentings, which are visible to the Eye, in lean Persons especially.

Lingua, the Tongue. This is cover'd with two Membranes; the external hath on its upper Part, and particularly, towards the Tip of the Tongue, a great Number of *Papillæ*, of a pyramidal Figure; they stand not up straight, but incline towards the Basis of the Tongue; they appear not so plainly in Men as in Brutes, in some of which last they grow cartilaginous. Each *Papilla* has a small Root, which makes a small Hole in the viscous Substance, which lies between the two Membranes. In Men, the chief Use of these, called *Papillæ Pyramidales*, seems to be for preserving the *Papillæ Nervosæ*, which are of a softer Substance, that they be not hurt by the Hardness, or Roughness of the Aliment: And in Beasts which feed upon Grass, which they gather together with their Tongue, these *Papillæ* are like so many Hooks, for the grasping, cutting, and pulling of the Grass; and perhaps, by their Roughness, and rub-

bing upon the Palate, they conduce to press the Spittle out of the Glands. Towards the Basis of the Tongue are to be seen several small Glands, like those of the Cheeks. See *Mouth*.

Under the external Membrane there lies a thin viscous Substance, which is white on that Side next the external Membrane, and black on that Side next the internal. When the Tongue is boil'd, this Substance hardens, and is like a Sieve, being full of small Holes made by the Roots of the *Papillæ Pyramidales*. The internal Membrane is thin and soft; upon it there appear several *Papillæ* made of the Extremities of the Nerves of the Tongue, for which Reason they are call'd *Nervosæ*. They are situated upon the Sides of the Tongue, but chiefly towards its Tip; they resemble the small Horns of a Snail, for their Extremities are round, and bigger than the rest of their Bodies. The Extremity of each *Papilla* pierces the external Membrane of the Tongue. They quit those Holes and remain on the internal Membrane, when the external is raised. These *Papillæ* are the immediate Organ of Tasting.

The Substance of the Tongue is musculous, being made of Plans of Fibres of different Directions. The first, or external Plan, is made of strait Fibres which surround the Tongue, reaching from its Basis to its Point. When they contract, they shorten the Tongue. Under them there are several Plans of Fibres, which run from one Edge of the Tongue to the other, and they draw its Edges together. There are also several Plans of Fibres, which run from the Under to the Upper

Upper-side of the Tongue ; when they contract, they make the Tongue broad and thin. These two Sorts of Fibres lie *stratum super stratum*, from the Tip of the Tongue to its Basis : first, a Plan of one Sort, and then a Plan of the other Sort. There is a small Portion of Fat between these Fibres, but chiefly towards the Basis of the Tongue.

The Vessels of the Tongue are Veins from the Jugulars, call'd *Ranulares*. It has Arteries from the *Carotids*, and Nerves from the fifth and ninth Part.

The Muscles of the Tongue are three Pair. The *Styloglossus* arises fleshy from the *Processus Styloides*, and thence descending, it is inserted into the Root of the Tongue. Its Use is to draw the Tongue upwards. The second Pair is the *Genioglossus* ; it arises from the Insides of the Fore-part of the lower Jaw, and is inserted into the Root of the Tongue, which it serves to pull out of the Mouth. The third is the *Ceratoglossus*, which arises broad and fleshy from the Sides of the *Os Hyoides*, and is inserted into the Root of the Tongue, which it pulls directly into the Mouth. The Fibres of this Muscle, which are nearest the Extremities of the *Os Hyoides*, were called the *Basioglossus* ; but there is no Reason to distinguish them, since they lie in the same Plan, and their Fibres have the same Direction, Origination, and Insertion. The Tongue is not only moved by these Muscles, but also by a Bone call'd *Os Hyoides*, which lies at the Root of the Tongue, and in Figure is like the Greek Letter υ , from whence, and ἵδω , *Forma*, Shape, it has its Name. It is com-

posed ordinarily of three Bones ; that in the Middle makes its Basis, and is shorter than the other two : It is convex without, but concave within : The other two are joined to its two Ends by two intervening Cartilages ; they are much longer than the first : They have each a Cartilage at their Extremities, and are called *Cornua*, or Horns. The Basis of this Bone is join'd to the Root of the Tongue, and its Horns are join'd to the upper Angles of the *Cartilago Thyroides*, and by two small and round Ligaments to the *Processus Styloides* of each Side. This Bone is moved, and with it the Tongue, by five Pair of Muscles. The first is the *Geniohyoidæus*, so call'd from $\gamma\acute{\epsilon}\nu\upsilon\varsigma$, *Mentum*, the Chin, and the rest as the Word *Hyoides* : It arises fleshy from the Fore-part of the lower Jaw internally, and is inserted into the Basis of the *Os Hyoides*, which, with the Tongue, it pulls upwards, and forwards. Its Antagonists is the *Sternohyoidæus*, which arises from the Inside of the *Clavicle*, and ascending above the *Sternothyroidæus*, it is inserted into the Base of the *Os Hyoides*, which it pulls downwards. The third is the *Mylohyoidæus*, and arises fleshy from the Inside of the lower Jaw, under the *Dentes Molares*, and is implanted into the Sides of the Base of the *Os Hyoides* : It draweth this Bone and the Tongue obliquely upwards. Its Antagonist is the *Coracohyoidæus*, which is wrongnam'd, because it arises not from the *Processus Coracoides*, but from the upper Edge of the *Scapula* near its Neck ; and ascending obliquely under the *Mastoidæus*, it is inserted into the *Os Hyoides*, and pulls it obliquely downwards.

The Belly of this Muscle is a little tendinous in its Middle, that the Vessels which go to the Head be not compressed, when it acteth. The fifth Pair is the *Stylohyoidæus*, and arises from the *Styloides Processus*, whence descending, it is inserted into the Horns of the *Os Hyoides*, which it draws to one Side, and a little upwards. The Belly of this Muscle is perforated for the Passage of the Tendon in the Middle of the *Digastricus*.

Liniment, is a Form of external Medicine made of unctuous Substances, to rub upon any Part; as the Word itself imports.

Lypothymia, from *λείπω*, *deficio*, to want, and *θυμός*, *Animus*, Spirit, is a Fainting or Swooning, from too great a Decay or Waste of Spirits.

Lippitudo, is a Disorder of the Eyes, from a Decay or Obstruction of their natural Moisture, which makes them feel dry, and appear angry and red, commonly call'd Blear-ey'd.

Liquamen, is any Thing capable of melting, and is generally used to express such unctuous Substances as are procured by

Liquation, or

Liquefaction, which signify the same, from *liquefacio*, to melt, or make into a Liquor. See *Fusion*, which it is sometimes also confounded with.

Liquid, or *Liquidity*, is such a Property in Bodies, as is also expressed by Fluidity; but this, somewhat further than that, also supposes a Power of Wetting, which all Fluids have not, and proceed from a peculiar Configuration of Particles, which disposes them to adhere to the Surfaces of Bodies which are immersed into them.

Litharge, is a Substance that arises in the Purification of Silver, altho', from its yellow Colour, it is commonly call'd Litharge of Gold. It is much used in Emplasters; for it dissolves by boiling in Oil, and gives a proper Consistence, as in the *Diachylon*.

Lithiasis, from *λίθος*, *Lapis*, a Stone; is the Gravel and Stone in the Bladder: And,

Lithotomy, from the same, and *τέμνω*, *feco*, to cut; is taking out the Stone by Cutting, the Operator being call'd a

Lithotomist. Also,

Lithontripticks, from the same, and *τρίβω*, *tero*, to wear; are such Medicines as, by their penetrating, or deterging Qualities, cut, dissolve, or wear away such Substances, when generated in the Body, so as to forward the Discharge of the Principles out of the containing Vessels.

Litus, the same as *Linamentum*; which see.

Lixivium, is a Liquor made by the Infusion of Ashes, or any burnt Substances, which is more or less pungent and penetrating, as it is impregnated with the Salts and fiery Particles abounding therein. And what is left, after the Evaporation of such a Liquor, is call'd a

Lixivial, or

Lixivate Salt; such as all those are, which are made by Incineration.

Lobe, signifies any Body turn'd of a roundish Shape; whence Roots of Plants are thus call'd in Botany: And in Anatomy, divers Parts of the Body are thus distinguish'd; as the Lobes of the Ears, Lungs, Liver, and the like; which Parts see. *Bidloo* uses the

diminutive *Lobellus*, or little Lobe, for the four Processes of the Brain.

Loch, and *Loboch*, are Arabian Names for those Forms of Medicines, which are now commonly call'd *Eclegma's Lambatives*, *Linetus's*, or the like; which see.

Lochia, *Loches*, signifies such Evacuations, as are peculiar to Women in Childbed. The nearest Derivation of this Term, that bears any Affinity to the Sense it is used in, is from *λέχουμαι*, *cubo*, to lie down. See *Placenta*.

Loculamenta, strictly signifies little Pockets; and thence the Term is made Use of in Botany, to express those little distinct Cells or Partitions within the common *Capsula Seminalis* of any Plant; as those within the Seeds of Poppies, &c.

Loboch. See *Loch*.

Longævity, signifies long Life, to procure which, Abstinence and Regularity are supposed to be highly conducive.

Longissimus Dorsi, is a Muscle of the Back, that, at its Beginning, is not to be separated from the *Sacro-lumbalis*, arising with it from the hinder-part of the Spine of the *Ilium*, and upper Part of the *Os sacrum*, and, as it ascends, it gives Tendons to each transverse Process of the *Vertebræ* of the Loins, *Thorax*, and Neck. In Conjunction with some others, this helps to keep the Body erect.

Longitudinal, Lengthways, is opposed to Transverse.

Longus Colli, is a Muscle, that is fasten'd to the five upper *Vertebræ* of the Back, and to all those of the Neck; but because the last are more moveable than the first, therefore, they are its Insertion, and those of the Back its Origin.

nation. This helps to bend the Neck.

Longus Cubitæus, is a Muscle, that in Conjunction with others, extends the *Cubitus*. It arises from the inferior *Costa* of the *Scapula*, nigh its Neck, and passeth betwixt the two round Muscles. It descends on the Back-side of the *Humerus*, where it joins with the *Brevis* and *Brachialis externus*.

Lotion, is a Form of Medicine compounded of aqueous Liquids, used to wash any Part with, from *lavo*, to wash.

Lozenges, is a Form of Medicine, made into small Pieces, to be held or chew'd in the Mouth till melted or wasted.

Lubrlicity, is a Property chiefly of fluid Bodies, which makes them soft and yielding, as in Oils and the like, from *Lubricitas* Slipperiness.

Lues, signifies a Plague, or Contagion; but, according to modern Use, especially when join'd with *Gallica*, or *Venerea*, means only the Pox. There are various Opinions of this Disease, as to its Causes and Propagations chiefly, which have their Foundation in nothing but Conjecture. And many Cases, that pass for a Constitution-Pox, separate from a *Gonorrhœa*, are not distinguishable from some Species of a Scurvy; and are very often neither from Infection, nor capable of communicating one: Such are to be managed, as the Scurvy, Leprosies, Struma's, and the like; and seldom require any Thing peculiar to Venereal Disorders. But where it is remarkably, and certainly from Venereal Foulnesses, it is to be managed according to the Appearance of Symptoms, either by Evacuation,

Detergents or Absorbents, or all together.

Lumbago, from *Lumbi*, the Loins, and *ago*, to act, signifies Pains that are very troublesome about the Loins, and Small of the Back, such as precede Ague-Fits, and Fevers. They are most commonly from Fulness and Acrimony, in common with a Disposition to Yawnings, Shuddering, and errattick Pains in other Parts, and go off with Evacuation, generally by Sweat, and other critical Discharges of Fevers.

Lumbares Glandulæ. See *Lactéal Veins*. Some Arteries, Veins, &c. are also called *Lumbares*, while they are in their Passage thro' the Loins.

Lumbricales Musculi, call'd also *Vermiculares*, for the same Reason; both these Terms signifying any Thing bearing Resemblance to Worms, which the Muscles thus call'd do, by their Smallness and Shape, arising from the Tendons of the *Profundus*, and are inserted into the first *Internodes* of each Finger, on their internal Sides next the Thumb. They assist in bending the first Joints of the Fingers; for which Cause, they are sometimes call'd *Flexores primi Internodii Digitorum*.

Luna, in the Language of the Chymists, signifies Silver, from the supposed Influence of that Planet (the Moon) thereupon. The medicinal Virtues of this Metal are none at all, until it has undergone very elaborate Preparations. See *Dispensatory*.

Lunata Cartilago. See *Tibia*.

Lunatick, signifies being mad, from *Luna*, the Moon; because it has anciently been an establish'd

Opinion, that such Persons were much influenced by that Planet: And a much sounder Philosophy has taught us, that there is something in it, but not in that particular Manner as the Ancients imagin'd, or otherwise than what it has in common with other heavenly Bodies, occasioning various Alterations in the Gravity of our Atmosphere, and thereby affecting human Bodies.

Lungs. This is an Organ in the human Frame, of so great Moment to its due Preservation, that the Structure, and Use thereof, cannot be too nicely enquired into. The Lungs are in the Middle of the Cavity of the *Thorax*, and are divided into two Lobes by the *Mediastinum*; the Left is also frequently subdivided by two more. The Figure of both Lobes together resembles, in Shape, a Cow's Foot, being a little concave betwixt the two Lobes, where they embrace the Heart, and behind, where they lie upon the *Vertebræ*: but before, where they touch the *Sternum* and Ribs, they are convex. The Colour of the Lungs, in a *Fætus*, is of a pale red; but after the Air has once entred them, they lose their Red, and remain always pale; tho' in Adults, they are variegated both with the one and the other. They are ty'd to the *Sternum* by the *Mediastinum* before, to the *Vertebræ* by the *Plura* behind, where it rises from the *Vertebræ* to the Heart by the *Vena Arteria Pulmonalis*; and sometimes to the *Plura*, where it covers the Ribs, and particularly in the left Side, and especially after a Pleurisy.

The Lobes of the Lungs are cover'd with a double Membrane; the external, which is a Production

tion of the *Pleura* ; and the Internal, which not only immediately covers the Substance of the Lungs, but its inner *Lamina* also fills up the Interstices which are between the Bunches of the small Lobes, with little vesicular Cells. The fine capillary Blood-Vessels are so thick upon this Membrane, that it seems to be nothing but a Network of Veins and Arteries. The Substance of the Lungs is composed of an infinite Number of little Lobes of various Figures and Magnitudes ; but their Surfaces are so adapted to one another, as to leave but very few and small Interstices. These Lobes are disposed like so many Bunches of Grapes upon the Sides of the *Bronchi* ; each little Lobe contains within its own proper Membrane, an infinite Number of small and little orbicular Vesicles, which leave small Interstices between them, that are full of little Membranes, like those which tie the Lobes together. The Extremities of the Branches of the Windpipe open into the Cavity of the Vesicles, which are properly formed by its Membranes ; but the capillary Blood - Vessels are only spread upon the Vesicles like a Net, with frequent and large Inosculation.

The Vessels which enter the Lungs, are the *Trachea*, or *Aspera Arteria*, by which we draw in the Air ; the *Arteria Pulmonalis*, which comes from the right Ventricle ; and *Vena Pulmonalis*, whose Trunk opens into the Left Ventricle of the Heart : Each of these divides into two Branches, for the two great Lobes of the Lungs, where they are sub-divided into as many Branches as there are little Lobes

or Vesicles in the Lungs. Wherever there is a Branch of the *Trachea*, there is also a Branch of the Vein and Artery ; and the *Trachea* is always in the Middle. Upon the Branches of the *Trachea Arteria*, which are call'd *Bronchi*, runs a small Artery call'd *Arteria Bronchialis*, and a small Vein call'd *Vena Pneumonica*. The Artery comes from the *Aorta*, and the Vein opens into the *Subclavian*. Upon the *Bronchi*, even to their minutest Ramifications, run likewise the fine Threads of the eighth Pair of Nerves. Besides these, the Lungs have Lymphaticks, which discharge themselves into the Thoracick Duct ; but they are smaller, and make more frequent Inosculation than are observable any where else. This is the Passage of the Vessels thro' the Lungs ; but because the *Trachea Arteria* has a particular Structure, it requires to be particularly explain'd. See *Aspera Arteria*.

From the Structure of the Lungs thus explain'd, may be mechanically deduced the great Effect they produce upon the Blood by means of the Air : For, whilst the *Fœtus* is in the Womb, the Vesicles of the Lungs lying flat upon one another, compress all the capillary Blood-vessels, which are spread upon them : but, as soon as we are born, the Air, by the Dilatation of the *Thorax*, is thrust into the Branches of the *Trachea Arteria*, and blows up the Vesicles into Spheres ; by which Means, the Compression being taken off from the Blood-vessels, and they equally expanded with the Lungs, all the Blood has a free Passage thro' the pulmonary Artery ; but when the Air is thrust out again by the Contraction

tion of the Cavity of the *Thorax*, it being a fluid Body, compresses the Vesicles and Blood Vessels upon them every-where equally. By this Compression the red Globules of the Blood, which, thro' their languid Motion in the Veins, were grown too big to circulate in the fine capillary Vessels, are broken and divided again in the *Serum*, and the Blood made fit for Nourishment and Secretion. This Pressure of the Air upon the Blood-Vessels, may be demonstrated to be equal to 100 lb. Weight, and in Coughing or Crying it may exceed 400 lb. Weight.

But, tho' these are necessary Consequences of Respiration, yet several Experiments tend to demonstrate, that some Particles of the Air must likewise enter the Blood-Vessels, and mix with the Blood in the Lungs: For, we are assured, that the Air will escape the Pores of any Number of Bladders, when compressed only by the Weight of the Water, into which it is sunk; and therefore, the Pressure of 100 lb. Weight, in ordinary Respiration, cannot but thrust some Particles of it into the Blood-Vessels. It is further shewn by the Air-Pump, that Animals cannot live, when shut up in common Air, tho' it retains its wonted Pressure. The same Method also assures us, that Animals will live longer, when shut up in compressed Air; and that, when they are dying in common Air, they may be reviv'd, by pressing in more fresh Air. It may likewise be demonstrated, that the Difference between the Gravity of the Air in the City, and that of the Country, which the Barometer shews to be very small, can never be the Cause of that

Difficulty of Breathing, which some Experience in the one, and not in the other; for they are not near so sensible of the different Gravities of the Air in the same Place, as they are of a much smaller Difference in two distinct and remote Places, where the Contents of the Air are different.

But the main Purpose of Respiration, and the chief Office of the Lungs being to form those elastick Bodies, of which the Blood does principally consist, and which are so necessary to its Circulation; it deserves further to be considered, that the Blood consists of a Lymph, which is the common Vehicle, several Salts, *Ramenta* of a thick Consistence, and those Globules, of which we are now speaking; though sometimes they are of different Colours, as white, blue, and purple, which any one may discover with an ordinary Microscope. Now, it is certain, that these Globules may burst, as in Obstructions, or be very much exhausted, as in violent Hemorrhages, and yet be recovered, and recruited again, so that they must be form'd somewhere or other from the Chyle. And since it is certain, that they are not solid Particles, as appears both by ocular Inspection, and other Means; also, that they actually do change their globular Figures into those of oblong Sphaeroids, as they move thro' the capillary Vessels; from all these together, consider'd with their Coagulation with Acids, it is highly probable, that they may be little Bubbles, blown up from the viscid Parts of the Chyle, by the Force of some subtile elastick Air. Now,

no Place in the Body can afford this elastick Fluid but the Lungs; and this may be the Reason why the Chyle enters into those two Veins only, which are just returning into the Heart, immediately to be sent into the Lungs. For since in our gross Element of Air, there is always interspersed a finer Elastick Fluid, which is the principal Agent in all the surprising Effects commonly ascribed to the other; though the grosser Element cannot, yet this finer Fluid, by the fore-mention'd Force in Respiration, may be thrust thro' the Sides of these *Vesiculæ* into the Blood-Vessels. And since these Blood-Globules must necessarily be generated somewhere, and that there is no Place in the Body besides, thro' which this subtile Fluid can be squeez'd, with a Force sufficient to carry it into the Blood, but in the Lungs, it is highly probable, that these Globules are there formed after the fore-mention'd Manner. The viscous Part of the Chyle being, by the shortest and safest Course possible, brought into the returning Part of the Blood, is sent from the right Ventricle of the Heart to the Lungs, and is spread upon the Sides of the *Vesiculae* thereof in little fine Tubes. This fine Fluid then in the Act of Respiration, being squeez'd thro' the Vesicles of the Lungs, and the Sides of the Blood-Vessels, is forced into the viscous Part of the Chyle now running by in the *Serum*; and by its perpendicular Pressure on the Sides of that Cavity it forms, produces a little small Bubble of a determinate Magnitude, and Thickness of Shell, from whence it has its Colour. After this, by the Force of the

succeeding Fluid, this little Bubble is broken off from the Pore, and carry'd along the Artery; and the Cohesion of the Parts of the Shell of this Bubble being greater than the Force from without, whereby the thin *Serum* acts upon it, it is preserved in its Figure thro' all the various Motions of the compound Fluid of the Blood. And, if it happen that these Bubbles should be burst (as they most certainly are by manifold Causes) whenever they come to the Lungs, they are new form'd again, whereby the Texture of the Blood, and the Circulation thereof, is preserved constant and uniform: For, should these Bubbles be all destroy'd, there must of Necessity arise a general Obstruction in all the capillary Arteries. A Mixture of Oil and Vinegar admirably exhibits the like Formation of Bubbles; for, when it is look'd upon thro' a Microscope, it appears to be nothing else but an Infinity of such Globules form'd by the Immission of Air and Vinegar into little Shells of Oil. See *Blood*.

Lupia, is a small, soft, round Tumour, seated in a tendinous Part of the Joints of the Fingers or Toes, moveable every Way, but unattended with Pain; being of much the same Nature with a Ganglion.

Lupus, strictly signifies the Wolf, or Wild-Dog; but some Persons have figuratively apply'd it to a grievous eating Ulcer, like the *Phagedæna*.

Lute, is a Mixture of several adhesive Substances together, to close the Junctures of Vessels in Distillation, from *Lutum*, Dirt: Such Compositions being on any other Account of a mean Value, and

and not much unlike to Dirt, in Appearance.

Luxation, is a flipping of any Thing out of its Place, and is us'd to signify the disjoining the Bones in any Parts whatsoever; which is done various Ways, and they are to be reduc'd by as many, according to the particular Formation and Articulation of the Joint: For which see the Books of Practical Surgery.

Lymph, or *Lympha*, is generally us'd for such a transparent Fluid as Water; and therefore, in Anatomy, is us'd for the Contents of the Vessels call'd

Lymphaducts, from *Lympha*, Water, and *duco*, to convey, or,

Lymphaticks, which are slender pellucid Tubes, whose Cavities are contracted at small and unequal Distances, by two opposite semi-lunar Valves, which permit a thin and transparent Liquor to pass through them towards the Heart, but which shut like Flood-gates upon its returning. They arise in all Parts of the Body; but after what Manner needs no great Dispute: For, without doubt, all the Liquors in the Body, excepting the Chyle, are separated from the Blood in the fine capillary Vessels, by a different Pipe, from the common Channel, in which the rest of the Blood moves: but, whether this Pipe be long or short, whether it be visible or invisible, it is still a Gland, whilst it suffers some Part of the Blood to pass thro' it, denying Passage to others. Now, the Glands, which separate the Lymph, must be of the smallest Kinds, for, they are invisible to the finest Microscope; but their excretory Ducts, the lymphatick

Vessels, unite with one another, and grow larger as they approach the Heart; yet they do not open into one common Channel, as the Veins do: For, sometimes we find two, or three, or more Lymphaticks, running by one another, which only communicate by short intermediate Ducts, and which unite, and immediately divide again. In their Progress they always touch at one, or two conglobate, or vesicular Glands, into which they discharge themselves of their Lympha. Sometimes the whole Lymphatick opens at several Places into the Glands, and sometimes it sends in only two or three Branches, whilst the main Trunk passes over, and joins the Lymphaticks, which arise from the opposite Sides of the Glands, exporting again their Lympha to their common Receptacles. Now, the Glands of the *Abdomen*, which receive the Lymphaticks from all the Parts it contains, as likewise from the lower Extremities, are the *Glandulae Inguinales, Sacrae, Iliacae, Lumbares, Mesentericae, and Hepaticae*; all which send out new Lymphaticks, which pour their Contents into the *Receptaculum Chyli*, as those of the Chest, Head, and Arms, do into the *Ductus Thoracicus*, jugular and Subclavian Veins. These Glands are round and smooth Bodies, about the Bigness of an Hazel Nut, bigger or lesser, according to the Number of Lymphaticks they receive. Their Substance is membranous, which divides the whole Bulk into little Cells, which receive the Lymph from the Lymphaticks; and therefore, they are improperly called Glands, because they separate no Liquor from the Blood.

Its

It is true, that their exporting Lymphatics, communicating with their Arteries, do receive a Lymph from them; but this is done without the Help of conglobate Glands, as the lacteal Veins do with the capillary Arteries of the Guts: and the chief Use of these vesicular Bodies seems to be, that the slow moving Lympha may receive a greater Velocity from the elastick Contraction of their membranous Cells, as well as from the new Lymph immediately derived from the Arteries. If the Lymph be chymically examined, it will be found to contain a great deal of Volatile, but no fixed Salt, some Phlegm, some Sulphur, and a little Earth.

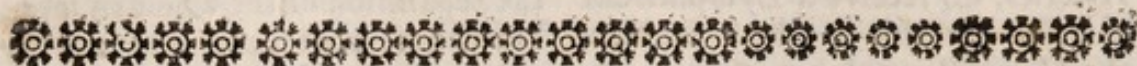
The Use of the Lymph may be gathered from the Consideration of the Parts into which it discharges itself. That which comes from the Head, Neck, and Arms, is thrown into the jugular and subclavian Veins. All the Lymphatics, which the Parts in the Cavity of the *Thorax* send out, empty themselves into the thoracic Duct, and the Lympha from all the rest of the Body flows to the common Receptacle; so that there can be no Doubt, but that its chief Use is to dilute and perfect the Chyle before it mixes with the Blood. Now the whole Lymph, which is separated from the Blood, being requisite for this Use, it is

plain, that there could be no Glands in the *Abdomen* appropriated for the Separation of the whole Lymph, but what must have had a very great Share of the Blood, which passes thro' the *Aorta*, in order to separate so great a Quantity of Lymph. But the Liver and Kidnies requiring likewise a great Quantity of Blood, and which could not be avoided, Nature chose to separate the Lymph from the Blood, which goes to all the Parts of the Body, rather than appoint particular Glands for it in the *Abdomen*, which would have been more at Hand, but would have robbed the other Parts of a large Quantity of Blood, and occasioned a very unequal Distribution of it.

Lynceus, from *Lynx*, a Creature of a quick Sight; is used by some for a *Collyrium* to strengthen the Eyes; and hence, also a Person is said to be *Lynceus*, or *Lynx-ey'd*, who hath a quick, strong Sight.

Lypiria or *Leipiria*, is used by some, for that kind of burning Fever, which is more commonly called a *Causus*.

Lyssa, λύσσα, or λύτλα, strictly signifies the Madness of a Dog, which is communicable by his Bite, but is more laxly applied to the Bite of any venomous Creatures; whence the *Pulvis Antilyssus* in the *London Dispensatory* takes its Name, as being accounted good against such Evils.



M.

M This Letter in Prescription is frequently used to signify an Handful, and is sometimes also put at the End of a *Recipe* for *Misce*, Mingle, or *Mixtura*, a Mixture.

Thus *m. f. Julapium*, signifies Mix, and make a Julep.

Maceration, is an Infusion either with or without Heat, wherein the Ingredients are intended to be almost wholly dissolved.

Machaon, is the proper Name of an ancient Physician, said to be one of the Sons of *Æsculapius*; whence some Authors have fancied to dignify their own Inventions with his Name, as particularly, a *Collyrium* described by *Scribonius*, entitled *Asclepias Machaonis*: And hence also, Medicine in general is by some call'd *Ars Machaonia*.

Machine, from *Machina*, an Engine, is apply'd frequently to such Contrivances, with which Surgeons assist their Operations, chiefly in reducing dislocated Bones. It is a Term in Mechanicks, where it is divided into *Simple* and *Compound*; the first is the Balance, Lever, &c. and the latter is made of the former, in an infinite Variety: hence also,

Machinula, a Diminutive of the same Word, is sometimes used by physical Writers to express those little Compositions, which are Parts of more compound Bodies, and which by their peculiar Configura-

tion, are destined to particular Offices. Thus in Anatomy, the various Textures, Combinations, and Decussations of the Fibres compounding the Muscles, Nerves, or Membranes, often are expressed by this Term.

Macrocephalus, from *μακρῆ*, *magna*, great, and *κεφαλῆ*, *Caput*, the Head; is sometimes used to signify a Head larger than natural.

Macrocosm, from the same as the first Part of the foregoing, *κόσμος*, *Mundus*, the World; expresses the whole World, or visible System.

Macula, is applied by Physicians, to express any Spots upon the Skin, whether those in Fevers, or scorbutick Habits; some also use it for those Marks, which breeding Women are apt to impress upon a Child by longing.

Madefaction, is properly receiving so much Moisture, that a Body is quite soaked through by it; whence *Madida* is said by some of any thing made tender by Infusion or Decoction.

Madness. See *Mania*.

Magia, *μαγία*, Magick, anciently expressed, only an uncommon Extent of Knowledge in natural Things; as the Distinctions of *Magician*, *Brachman*, *Druid*, and *Prophet*, were ascribed, by different Nations in the same Sense, to Persons supposed to excel in it; but Chymistry and Enthu-

Enthusiasm have latterly much corrupted this Term, by calling in the Assistance of some supernatural Power, and commonly that of an evil Spirit, for the obtaining such Acquirements; and chiefly *Paracelsus*, *Crollius*, and *Helmont*, have treated it in this Manner, alledging much to be done in Medicine by Magick, or Inchantment: and hence arise likewise our modern Legends of Witchcrafts, and Exorcisms, which, it is to feared, have not a little been encouraged by Priestcraft.

Magistery, is a Term made Use of by Chymists, to signify sometimes a very fine Powder, made by Solution and Precipitation; as of Bismuth, Lead, &c. and sometimes Refins, and Resinous Substances, as those of Jalap, Scammony, &c. but the most genuine Acceptation is to express that Preparation of any Body, wherein the Whole, or most Part, is, by the Addition of somewhat, changed into a Body of quite another Kind; as when Iron or Copper is turned into Crystals of *Mars* or *Venus*, &c. But this Term is pretty much expunged, with the rest of the chymical Jargon: tho'

Magisterial Remedy, is sometimes retained in the Cant of Empiricks, more for its great Sound than any Significancy.

Magma, expresses the Dregs or *Residuum* after Infusion or Distillation.

Magna Arteria, the great Artery, the same as *Aorta*, which see.

Magnet, is a Load-stone, the wonderful Properties of which have greatly puzzled and employ'd the Enquiries of many great Men; but their Opinions thereupon are of

no great Use in Medicine.

Magnetism, and

Magnetical Vertues, are much used by some who find their Account more in Amusement than in useful Knowledge; and some affect to explain or recommend, by such Terms, those Remedies, for the Application and Operation of which, they have no better Reasons at Hand.

Malacia, is a depraved Appetite, when such things are coveted as are not proper for Food: but the Etymology of the Term seems doubtful, unless it be from *μαλάσσω*, *mollio*, to soften, because, too lax a Tone of the Stomach is generally the Occasion of Indigestion, and unusual Cravings.

Malanders, is the Name of a Distemper peculiar to Horses.

Malax, and *Malaxation*, is moistening or softening any hard Body, from *μαλάσσω*, *mollio*, to soften.

Malicorium, *Mali Granati Corium*, is the Pomegranate Peel.

Malignant, from *malignus*, signifying such a Disease as is greatly aggravated, and is generally apply'd to such Fevers as are Epidemical or Infectious, and are attended with Spots and Eruptions of various Kinds. See *Poison*.

Malleable, from *malleus*, a Hammer, signifies any Thing that is capable of being spread by beating; and is a Quality possess'd in the most eminent Degree by Gold, that being more ductile than any other Metal; and is opposite to Friability or Brittleness. It depends upon a particular Configuration of Parts, and in many Instances is not unlike what is described under Fibre, which see.

Malleus, signifies a Hammer or Mallet, and is apply'd to one of the Bones of the Ear, for its Resemblance thereunto.

Malleolus: the lower Processes of the *Tibia* and *Fibula* are both thus called, which together make the Ankle.

Mammæ. See *Breasts*.

Mammiformis Proctus, the Breast-like Process. Two *Apophyses* of the Bones, in the back Part of the Skull, are thus called. See *Maxilloides*.

Mandibula, the Jaw. See *Maxilla*. Hence,

Mandibulares Musculi, and

Mandiboca, a poisonous Root, which, when artificially prepared by the *Brasilians*, affords them both their Bread and Drink.

Manducation, signifies the Action of the lower Jaw, in chewing the Food, and preparing it in the Mouth before it is received into the Stomach.

Manducatorii Musculi, are the same as the *Masseters*, which see.

Mania, Madness: This is a Delirium without a Fever; whence it is necessary also to explain what a Delirium is. To which Purpose it is, therefore, proper to observe, that as often as the Species of Things, wherewith we have been acquainted, are hurried together, we may be said to dream; and thence in Sleep they are added with other Things, and variously confounded, from the manifold Repercussions of the animal Spirits, which arise from the Cause producing Sleep, and pressing the Nerves so as to revert the Fluctuations of their Juice. A Delirium is therefore the Dreams of waking Persons, wherein Ideas are excited without Order or Coherence, and the

animal Spirits are drove into irregular Fluctuations. If therefore the Cause, inducing a Delirium, be of that Nature, that it can excite Ideas or Motions of a considerable *Impetus*, without any Manner of Certainty or Order; such a Delirium will be attended with Boldness and Rage, and violent Motions of the Body; that is, a Madness will be produced. Now it is plain, that all the known Causes of this Distemper give a greater Disposition to the Blood for Motion, and render it fluxile, but not consistent and uniformly thick enough; and therefore, that they dispose Persons likewise to continued Fevers; since they occasion the Blood to be thrown out of the Heart, with an increased Force, unless some other Cause intervenes, whereby the Efficacies of these are interrupted in disposing the Blood into febrile Motions; and the Blood is so disposed, as often as it can be rarefy'd into its minutest Parts; that is, so uniformly rarefy'd, that it can easily with any Force, by the Motion received from the Heart, go into Parts divisible at the Occurrences of those Orifices, into which it ought to be distributed: for then the Cohesion of the Parts, which can be but very small, will not be any Obstruction to the Increase and Propagation of the Blood's Velocity. But if it happens, that the efficient Cause, or the Heart throws the Blood with a greater Force, or that the Blood can the more easily be propelled in any given Time; it will occasion at the same Time that some Parts of the Blood be more nearly united, so as to form *Moleculæ*, consisting of cohering Par-

Particles which *Molecularæ* will cohere to one another, and not so easily obey the Direction of the Heart's propelling Force. The Blood hereupon cannot be uniformly rarefy'd, nor enter so easily into the small Orifices of the Vessels, and so soon travel thro' them, and therefore there will no Fever arise, but a Delirium without a Fever, wherein the Heat of the Blood will be greater, and the Pressure in the Brain uncertain; whence uncertain Recursions of the Spirits, inordinate Undulations, confused Vibrations of the Nerves, and a remarkable Energy of Imagination; whence will proceed Audacity and Passion beyond Measure. The Cure of this is in refrigerating Diet, Evacuation, and especially by strong Emeticks and Catharticks.

Manica Hippocratis, *Hippocrates's* Sleeve: which see.

Manipulus, a Handful; is a Quantity often used in Prescription amongst Physicians, and is generally marked thus, M.

Mansorii Musculi, from *mando*, to eat, the same as *Masseters*; which see.

Manus Christi, the Hand of Christ, some fanciful Persons have given this Name to Pearl Sugar, from their over Fondness for it as a Cordial.

Marasmodes, from *Marasmus*, a Consumption, and *ἴσθι*, *Forma*, Shape; is used by some for such Fevers as leave the Body greatly wasted.

Marasmus, from, *μαραίνω*, *marcesco*, to grow lean; is for that Reason used for a Consumption, where Persons waste much of their Substance.

Marchasite, some have used this Term only for *Bismuth*; but it is latterly made to signify in general all those Minerals which have some metalline Particles, in how little Quantity soever in their Composition.

Marmalade, is the Pulp of Quinces boil'd into a Consistence with Sugar. It is subastringent, and grateful to the Stomach.

Marrow. All the Bones of the Body, which have any considerable Thickness, have either a large Cavity, or they are spongy, and full of little Cells. In both the one and the other there is an oleaginous Substance, call'd Marrow, contain'd in proper Vesicles or Membranes, like the Fat. In the larger Bones, this fine Oil, by the gentle Heat of the Body, is exhal'd through the Pores of its small Bladders, and enters some narrow Passages, which lead to some fine Canals excavated in the Substance of the Bone, according to its Length; and from these other cross Passages, (not directly opposite to the former, lest they should weaken the Bone too much in one Place) carry the Marrow still further into more longitudinal Canals placed nearer the Surface of the Bone. All this Contrivance is, that the Marrow may supple the Fibres of the Bones, and render them less apt to break. This Term, and *Medulla*, the *Latin* for it, are frequently used in a figurative Sense, to signify the Internals, or Principle of any Thing; as, the Marrow, by the Antients, was judg'd a main Principle of Life.

Mars, denoted by this Character, ♂, amongst the Chymists, signifies Iron, because imagin'd

under the Influence of that Planet. Naturalists abundantly inform us concerning the Production of this Metal ; and physical Writers sufficiently prove how much it is preferable, for all Medicinal Purposes, to Steel, which is only a more hardened compact Iron, made so by Art ; whereby it is rendered more unfit to yield those Principles, or Parts, in Preparation, which the Physician requires to be drawn out. And because this has so great a Share in Medicine, it is worth explaining by what manifest Properties this Metal comes to afford so much of Moment for such Uses. And to this Purpose, thus far in common may be concluded, as from all other metalline Particles, That such as can be mixed with the Blood, and made Part of the circulating Fluid, must, of Course, by the necessary Laws of Motion, from their superior Gravities, be of great Force to break their Way, where Particles of less Gravities cannot get through : For, Mechanicks teach Nothing more plainly, than that *The Momenta of all Percussions are as the Rectangles under the Gravities and Celerities of the moving Bodies.* The more Gravity then, a metalline Particle has beyond any other Particles in the Blood, if their Celerities are equal, so much the greater will the Stroke of the metalline Particle be against every Thing that stands in its Way, than of any other not so heavy ; and therefore, will any Obstructions in the Glands and Capillaries be sooner removed by such Particles, than by those which are lighter. This is a Way of Reasoning, that is plain to the meanest Capacity ; and although it may be

called Mathematical, a Name shocking to some in Physick ; yet it has no Conjurat[i]on in it, unless to force Assent by Demonstration. But, if Steel, or Iron, has this Property, by Virtue of the Solidity, and specifick Weight of its Particles, in common with some other Metals ; it has also somewhat further of an Advantage of being a powerful De-obstruent, from the Shape of its component Parts : For, both our Sight and Taste convince us of their pointed angular Figure, especially, if we view them in their Shoots into Crystals, in making the Vitriol, or Salt of Iron. For another Reason therefore, that is, the sharp and pointed Figures of the Particles of Iron, will they be efficacious to cut their Way through many Hindrances : So that upon a double Account, we see how this Metal deserved its Esteem of being a noble De-obstruent. What has been observed likewise concerning Fermentation, or intestine Motion being increased by Particles elastick, does also plainly account how this Medicine comes to heat the Blood : For, the Resilition of an elastick Particle, upon its Occursion against any Thing that stops it, contributes to increase another kind of Motion in a circulating Fluid, than that which is parallel to the Axis of the Vessel thro' which it is propelled ; and it is this mixed Motion, upon which the Heat and Fluidity of the Blood depends. So that the chalybeate Particles being also elastick, they do heat and thin the Blood, by promoting its intestine Motion, as well as help it through Passages, by increasing its Weight and Force against them.

There

There is another obvious Property of Iron, and many of its Preparations, which we have never yet had tolerably accounted for; and that is, its Astringence in the Bowels, and its promoting of Urine: Which may, to some at first Sight, seem to be different Effects from the same Cause. But this will not appear strange, when we consider its styptick corrugating Taste upon the Tongue, which cannot but arise from the Points and Angles of its Particles. When, therefore, it comes into the Bowels, as often as those Particles touch any of the Fibres of their inner Coat, those Fibres by the same Mechanism, will contract; and so, by the Passage of a Chalybeate through the Intestines, will they be gently drawn into such Corrugations, as to retain their Contents longer, by the Passages being render'd straighter. And, that these Medicines have this Effect in the Bowels, by this Means, is further evident, from the Twitches they give the Stomach sometimes at their first Admission, inso-much as to draw it frequently into a general Contraction, and occasion their Ejection, by Vomit.

Upon another Account also does Iron astringe in those Parts, and that is, by hardening the *Fæces* themselves, whereby they are longer retain'd. In the crude Contents of the Bowels there are many Particles gross and large in their Surfaces, which may be the fibrous Part of Food not digested enough to go off any other Way but by Stool. Now, these Filaments, or little Shreds of Fibres, though in themselves inanimate, are capable in themselves of Contraction, or rather Corrugation, upon the Contact and Impulse of a sharp-point-

ed Particle; as we see in Leather, Vellum, or any membranous Substances, how they will shrink up, at the Contact of Particles of Fire, or any subtil Acid. So that, besides hardening the Coats of the Intestines, the Particles of a chalybeate Medicine astringe; that is, occasion more consistent, and less frequent Stools, by hardening the Contents of the Bowels, and rendering them more slow of Expulsion. But the Case is very different, when these Particles are strain'd into a Fluid as fine as themselves, and are propell'd in Canals with a great Velocity. The smart and frequently repeated Vibrations of an Artery prevent any such Contact as was admitted of in the Bowels, and only serves to forward their Motions; so that they can do nothing here but go on with the Current, until their Force strikes them thro' some secretory Outlet: but, by their Rapidity, and more forcibly Resilitions upon all Occurrences, they cannot, in this Scene, but greatly contribute to thin the Fluid, of which they make a Part; and dispose it more to supply the thinner Secretions, of which that by Urine is chief: As also does the Gravity of their Parts, so far as the circulating Force will admit its Influence, more dispose them to go off that Way, as it does most of a saline Nature, and such as are a-kin thereunto.

After this, there can need but little to explain, how chalybeate Medicines answer so effectually that known Intention of promoting the menstrual Discharges: For, by heating the Blood, that is, rendering it more swift and fluid, the Blood must take up more Room, and press harder against

the Sides of the Vessels; and, by increasing its Quantity of Impulse, it also presses, or strikes harder against whatsoever opposes it, in so much as sometimes to break the Vessels themselves. And these Effects it is most likely to have, of breaking the Vessels, where their Contortions or Obliquities are greatest, in Proportion to their Capacities and Distances from the Heart. Wheresoever therefore, the Vessels turn off nearest to right Angles, and their Capacities are greatest, at such a Place the Blood is most likely to break through: And such is the Contexture of the uterine Blood-Vessels.

Marsupialis Musculus, the same as *Obturator Internus*; which see.

Martial, is sometimes used to express Preparations of Iron, or such as are impregnated therewith; as the *Martial Regulus* of Antimony, &c.

Massa, signifies Paste, and is therefore, apply'd generally to the Compositions out of which Pills are to be form'd. It is likewise, in a figurative Sense, apply'd to some Collections of Fluids, and particularly that of the Blood; for which it is frequently used.

Masseter, from *μασσωμαι*, *manduco*, to chew; because it is a Muscle that helps to pull the Jaw upwards in eating. It is thick and short, arising from the *Zygoma*, and from the first Bone of the upper Jaw, and is inserted into the lower Edge of the lower Jaw, from its external Angle to its Middle. Its Fibres run in three Directions; those from the *Zygoma* obliquely to the Middle of the Jaw; and those from the first Bone of the upper Jaw cross the former, and run to the Angle of the lower

Jaw; and the Fibres, that are in its Middle, run in a Perpendicular from their Origin to their Insertion.

Mastication, or *Chewing*, is the Action whereby the Aliment is broke and divided into small Pieces by the Teeth, and mixed with the Spittle or *Saliva*, in order to its being more easily digested in the Stomach. And,

Masticatories, are such Medicines as are intended for chewing, in order to evacuate more than ordinary by the salival Glands.

Mastoides, from *μασθης*, *Mamma*, a Breast, or Dug, or Nipple, and *εidos*, *Forma*, Shape, are Processes so called from their Figure; and also for the same Reason *Mamillares*, or *Mammiformes*.

Mater tenuis, so call'd from its Thinness. See *Pia Mater*.

Materialista, signifies a Druggist, or any Person dealing in Drugs; but is a Term not much used by late Writers.

Matrass, is the Name of a chymical Glass-Vessel, made for Digestion, or Distillation, being somewhat bellied, and rising gradually taper into a conical Figure.

Matrix, strictly signifies the Womb of a Female: See *Generation Parts of, proper to Women*: But some chymical Philosophers thence figuratively apply it to any Thing which gives Nourishment and Encrease to any Bodies; so the Earth is a *Matrix* to the Seed sowed in it, &c.

Matter, or *Body*, is an impenetrable, divisible, and passive Substance, extended in Length, Breadth and Thickness. This, when considered in general, remains the same in all various Motions, Configurations, and Changes of natural Bodies, being capable

capable of putting on all Manner of Forms, and moving according to all Manner of Directions and Degrees of Velocity. The Quantity of Matter in any Body, is its Measure, as to its absolute Weight.

Matter subtil. This is a Figurement of the *Cartesians*, to avoid the Inconveniencies which they thought themselves incumbered with, in allowing a *Vacuum*, for, that was what they thought Nature had an Abhorrence to; and because, without this Refuge, they had no other Way to account for Motion, and many *Phænomena*, upon the Supposition of a Plenitude. But it is easy to shew their Mistake therein: For, were there any such Matter, and the Air full therewith, the Density of Air would be equal to the Density of Quick-silver, and it would as much resist the Motion of a Piece of Iron downwards, as Quick-silver itself; and therefore, could neither Iron, or any other Body, fall through it, which is contrary to all Experience. But yet, to make this Matter more clear, it is worth taking Notice, that there is in every Body a Power of Resistance, whereby, as much as possible, it preserves itself in its present State of Rest, or an uniform direct Motion. By this natural Property, it becomes a Difficulty, either to put a Body into Motion when at Rest, or to stop it when in Motion. Hence we find, that a Sphere of Lead upon a Plane will, in some Measure, resist being put into Motion: and whereas, a Motion parallel to the Horizon, towards the East, for Instance, is not opposite to that towards the Centre, *i. e.* its Gravitation, (for, a Body

may be mov'd either Way) that Resistance cannot arise from its Gravitation; therefore, since nothing else is in this Sphere of Lead, to which can be attributed its Power of Resistance, but the Quantity of Matter contain'd therein, that must be accounted the Cause of its Resistance. Now, *If two Bodies, which have equal Quantities of Matter, be moved horizontally, in Directions opposite to one another, and meet with equal Velocities, they stop together, or the Moment of their Resistance is equal; so that they must be equally heavy.* Whence it follows, that such Bodies are equally heavy, that have equal Quantities of Matter. And, if there be no Vacuities, all Bodies under equal Superficies (as for Instance, all Spheres of equal Diameters) will also contain equal Quantities of Matter; and therefore from the foregoing, will be equally heavy; that is, a Sphere of Lead would be no heavier than a Sphere of Wood of equal Bigness, if there were no Vacuities in the Sphere of Wood, which is contrary to all Experience: and therefore there can be no such Thing as a subtle Matter filling the Pores of all Bodies.

Maturation, is most properly said of the ripening of Fruit, but, by some physical Writers, is apply'd to the Suppuration of excrementitious or extravasated Juices into Matter, and differs from Concoction or Digestion, which is the raising to a greater Perfection the alimentary and natural Juices in their proper Canals. Medicines thus procuring Maturation, are generally call'd *Ripeners*, which see.

Maxilla inferior, the lower Jaw, is made of one Bone, the Fibres

of which at the Chin do not ossify in Children, till they are about two Years old. It is composed of two Tables, which are pretty hard and smooth; but betwixt these *Laminae* it is porous, and full of little Cavities. Its Figure resembles the Letter U. At each Extremity it has two Processes: The uppermost is called *Corone*; it is thin and broad at its Beginning, but it ends in a sharp Point, which, passing under the *Processus Zygomaticus*, has the Tendon of the crotaphite Muscle inserted into it. The other, which is shorter and lower, has a round Head lin'd with a Cartilage, which is articulated into the *Sinus* of the *Os Petrosus*; but, betwixt the Cartilage which lines the *Sinus*, and that which covers the Head of this Process, there is a Third, which adheres to the *Ligamentum Annulare*, which surrounds this Articulation. The Motion of the Jaw side-ways, absolutely necessary in chewing, is much facilitated by this loose intervening Cartilage. The lower Edge of this Jaw is call'd its *Basis*, and each End of it call'd the *Angle* of the lower Jaw. This Jaw has four Holes; two on its Inside near its Processes, and two on its Outside near its Middle. By the internal Holes enter a Branch of the fifth Pair of Nerves, an Artery from the Carotids, and a Vein from the Jugulars, whose Branches are spread in the Roots of the Teeth. By the external Holes these same Vessels pass, and are distributed upon the Chin. It has also sixteen *Sinus*'s into which the Teeth are set.

Maxilla superior, the upper Jaw. The Bones of this Jaw are two, common to it and the Skull, cal-

led *Os Mali*, which see under *Cranium*; and eleven proper, that is, five on each Side, and one in the Middle. They are join'd to the Bones of the Skull by the three common Sutures, and join'd to one another by a fine but true Suture. The first of the proper Bones is the *Os Mali*, or *Zygoma*, which is of a triangular Figure. Its upper Side makes the lower and external Part of the Circumference of the Orbit, where it joins the *Os Phenoides*. Its internal Side joins the *Os Maxillare*. Its external has a long Process, which, joining that of the *Ossa Temporum*, forms the *Processus Zygomaticus*. It joins the *Os Frontis* at the little Angle of the Eye. It is concave within, and sticks out a little forwards, making the highest Part of the Cheek. The second is the *Os Maximum*, or *Maxillare*, so called, because it is the principal Bone of this Part, and hath set in it all the Teeth of the upper Jaw. It is of a very irregular Figure. On its Inside it joins the *Os Mali*. Its upper Sides make the lower and internal Part or Circumference of the Orbit. At its great *Canthus* it joins the *Os Unguis* and *Frontis*. The lower Side of the *Os Nasi* is join'd to it. Under the upper Lip it joins with its Fellow on the other Side, and both join'd together make the fore and greatest Part of the Roof of the Mouth. It is very thin, and between its two *Laminae* it has a large Cavity, which opens by a small Hole into the Nostrils. In its lower End it has sixteen *Sinus*'s or Sockets, in which the Teeth are set. It has a small Hole, called *Orbiter externus*, in that Part of it which makes Part of the Orbit, through which

which the Nerves of the fifth Pair which come from the Teeth pass. Behind the *Dentes Incisivi*, where it joins with its Fellow, it has another which comes from the Nostrils. The third is the *Os Unguis*. It has a little thin Bone which lies in the great Angle of the Orbit, and has a Hole in which the lachrymal Bag lies. There does not appear any good Reason for accounting this a Bone of the upper Jaw, because it lies entirely in the great Angle of the Orbit; and there is more Reason to call it a *Lamina* of the *Os spongiosum*, than the *Os planum*. The fourth is the *Os Nasi*. This is a thin but solid Bone, which makes the upper Part of the Nose. Its upper Part is join'd to the *Os Frontis* by the *Sutura transversalis*. One of its Sides joins its Fellow, where they are supported by the *Septum Narium*. Its other Side joins the *Os Maxillare*. Upon its lower End the Cartilages of the Nostrils are fasten'd. Externally it is smooth, but internally rough. The fifth Bone of the upper Jaw is the *Os Palati*. It is a small Bone almost square, and it makes the posterior Part of the Roof of the Mouth. It is join'd to that Part of the *Os Maxillare*, which makes the Fore-part of the Palate; it is also join'd to its Fellow, and to the *Processus Pterygoideus*. It has a small Hole, through which a Branch of the fifth Pair of Nerves goes to the Membrane of the Palate. The last is call'd the *Vomer*, and is situated in the Middle of the lower Part of the Nose. It has a Cleft in its upper Side, in which it receives the lower Edge of the *Septum Nasi*. In its further End it receives a small *Apopophysis* of the *Os Phenoides*, and its Under-side joins the *Os Palati*.

Maxillary Glands. See *Mouth*.

Mean, expresseth the Middle of any two Extremes.

Meatus, a Passage, is used for any Outlet: as

Meatus Auditorius, the Opening of the Ear; and

Meatus Urinarius, the Passage of the Urine, &c.

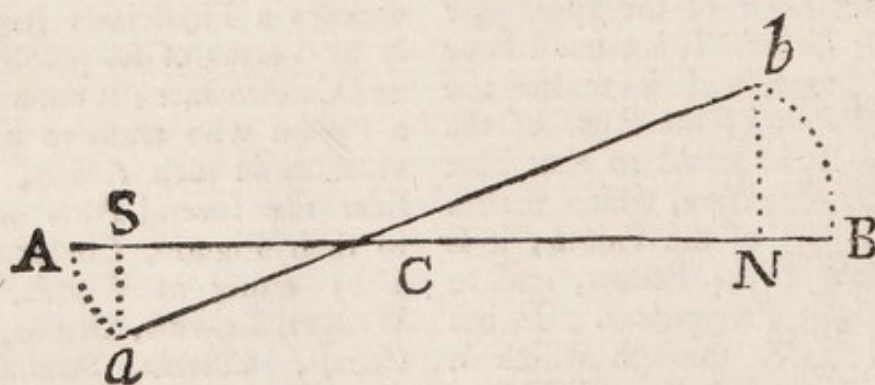
Mechanical, from *Machina*, an Engine; is a Term much of late introduced into Physicks and Medicine, to express a Way of Reasoning conformable to that which is used in the Contrivance, and accounting for the Properties and Operations of any Machine. And this seems to have been the Result and Consequence of rightly studying the Powers of an human Mind, and the Ways by which it is only fitted to get Acquaintance with material Beings: For, considering an animal Body as a Composition out of the same Matter from which all other material Beings are formed, and to have all those Properties which concern a Physician's Regard only by Vertue of its peculiar Make and Constructure; it naturally leads a Person who trusts to proper Evidences in such Affairs, to consider the several Parts according to their Figures, Contexture, and Use; either as Wheels, Pullies, Wedges, Leavers, Skrews, Chords, Canals, Cisterns, Strainers, and the like; and throughout the Whole of such Enquiries to keep the Mind close in View of the Figures, Magnitudes, and mechanical Powers of every Part or Movement, just in the same Manner, as is used to enquire into the Motions and Properties of any other Machine. For which Purpose it is frequently found helpful to decypher or picture out in Diagrams

agrams, whatsoever is under Consideration, as it is customary in common Geometrical Demonstrations; and the Knowledge, obtain'd by this Procedure, is call'd *Mechanical Knowledge*: For which, see Introduction to *Sanctorius* explain'd.

Mechanicks, is a Science that shews the Effects of Powers, or moving Forces, so far as they are apply'd to Engines; and these are reckon'd the Balance or Leaver, the Wheel, the Pulley, the Wedge, and the Skrew. The Principle upon which all these depend, as to their Operation, may be understood by the following Problem.

Any Body, as *A*, with its Celerity *C*, being given; and also another Body as *B*: to find the Velocity necessary to make the Moment, or Quantity of Motion in *B*, to be equal to the Moment of *A*, the given Body.

Now since the Moment of any Body is equal to the Rectangle under the Celerity and the Quantity of Matter, (as in the Laws of Motion, which see) say as $B : A :: C :$ to a fourth Term, which will be c , the Celerity proper to *B*, so that its Moment shall be equal to that of *A*. And from hence it follows, that any Body, tho' ever so small, may have a Moment equal to that of any other Body, tho' ever so great, which shall be moved with any given Celerity: Wherefore in any Machine or Engine, if the Velocity of the Power be made to the Velocity of the Weight, reciprocally as the Weight is to the Power; then shall the Power always sustain or move the Weight. Let *AB* be a *Veetis* or Leaver, whose Fulcrum is at *C*, and let it be moved into the Position of *acb*. Now the Velocity of any Point in the Leaver, is as the Distance from the Centre.



Let the Point *A* describe the Arch *Aa*, and the Point *B* the Arch *Bb*; then these Arches will be the Spaces described by the two Motions: but since the Motions are both made at the same Time, the Spaces will be as the Velocities. But 'tis plain, the Arches *Aa* and *Bb* will be to one another as their Radii *AC* and *CB*, because the Sectors *ACa* and *Bcb* are

similar: Wherefore the Velocities of the Points *A* and *B*, are as their Distances from the Centre *C*. *Q. E. D.*

Now, if any Powers are apply'd to the Ends of the Leaver *A* and *B*, in order to raise its Arms up and down, their Force will be expounded by the Perpendiculars *Sa* and *bN*; which being, as the right Sines of the former

mer Arches *b B* and *a A*, will be to one another also as the *Radii A c* and *c B*; wherefore the *Velocities of the Powers are also as their Distances from the Centre*. And since the Moment of any Body is as its Weight, or gravitating Force, and its Velocity conjunctly; if different Powers or Weights are apply'd to the Leaver, their Moments will always be as the Weights (or Powers) and their Distances from the Centre conjunctly. Wherefore, if to the same Leaver there be two Powers or Weights apply'd, reciprocally proportional to their Distances from the Centre, their Moments will be equal; and if they act contrarily, as in the Case of the *Stilliard*, the Leaver will remain in an horizontal Position, or the Balance will be in *Æquilibrio*. And thus 'tis easy to conceive, how the Weight of one Pound may be made to balance a Thousand, &c. And from hence 'tis plain, that the Force of the Power is not at all increased by Engines, but only the Velocity of the Weight, in either lifting or drawing, is so diminished by the Application of the Instrument, that the Moment of the Weight may not be greater than the Force of the Power. Thus, for Instance, if any Force can elevate a Pound Weight with a given Velocity, 'tis impossible by any Engine to effect that the same Power shall raise two Pound Weight with the same Velocity; but 'tis possible by an Engine to raise two Pound Weight with half the Velocity, and 10000 Times the Weight with $\frac{1}{10000}$ of the former Velocity. As the Skrew is also nothing but a Wedge driven with a Leaver, its Power may be in the same Manner cal-

culated, as likewise all the other Powers, from their Affinities, hereunto: And an absolute Necessity there is of forming some general Notions of these Things, to understand the Mechanical Constructure of an human Body, and more particularly, what Power the Limbs have in Motion by vertue of the different Shapes and Insertions of their Muscles, which are exactly reducible to the Affections of these Principles.

Mechanical Affections, are such Properties in Matter or Body as arise from its Figure, Bulk, and Motion: And

Mechanical Causes, are used in the same Sense: And

Mechanical Solutions, are Accounts of Things upon the same Principles.

Meconium, from *μήκων*, *Papaver*, a Poppy, is properly the condensed Juice of Poppies, or Opium: but it is used also for the Excrements of a *Fætus* which adhere to the Intestines after Birth, because they have been imagined to have some Resemblance to Opium in Colour.

Mediana, a Vein of the Cubit is thus called from its Situation in the Middle between the *Cephalick* and *Basilick*.

Medianum, or

Mediastinum, *quasi medio flore*, to stand in the Middle. This is a double Membrane, formed by the Continuation of the *Pleura*, which comes from the *Sternum*, and goes streight down thro' the middle of the *Thorax* to the *Vertebrae*, dividing the Cavity in two. It contains, in its Doublings, the Heart in its *Pericardium*, the *Vena Cava*, the *Oesophagus*, and the stomachick Nerves. The Membranes of the *Mediastinum* are finer and thinner

thinner than the *Pleura*, and they have a little Fat. The *Mediastinum* receives Branches of Veins and Arteries from the mamillary and diaphragmatick, and one proper call'd *Mediastina*: Its Nerves come from the Stomachick; it has also some Lymphaticks, which open into the thoracick Duct. The *Mediastinum* divides the *Thorax* into two Parts, to the End that one Lobe of the Lungs may officiate, if the other be hindered by a Wound on the other Side. Sometimes there is a Matter contain'd betwixt its Membranes immediately under the *Sternum*, which may occasion the trepanning of this Place.

Mediastinum Cerebri, is the same as *Septum transversum*, which see.

Medicaster, a false Pretender to the Knowledge of Medicine; the same as Quack.

Medicament, the same as

Medicine; the ordinary Use of this Term needs no Explanation: but it is also frequently used to express the whole Art of Healing, and includes all the Parts belonging thereunto. By the Schools it is divided into, 1. *Physiologia*; 2. *Pathologia*; 3. *Semeiotica*; 4. *Hygiene*; 5. *Therapeutica*: Which see under their respective Names.

A general Idea of the Operation of Medicines Dr. Keil has given, in his Account of *Animal Secretion*, to the following Effect: A few different Sorts of Particles variously combined, will produce great Variety of Fluids; some may have one Sort, some two, some three, or more; and perhaps the aqueous Fluid is the common Base of all Secretions. If we suppose only five different Sorts of Particles in the Blood, and call them *a*, *b*, *c*, *d*, *e*, their several Combinations,

without varying the Proportions in which they are mix'd, will be these following;

$$\begin{array}{l} a b : a c : a d : a e : \\ b c : b d : b e : c d : \\ c e : d e : a b c : a d e : \\ a b d : a b e : a c e : a d e : \\ b d c : b d e : b e c : d e c : \\ a b c d : a b c e : a c d e : a b d e : \\ b c d e : a b c d e : \end{array}$$

but whether more or less, need not be determined. No Theory of Secretion has hitherto been able to give any tolerable Account of the Operation of such Medicines as promote Evacuation. For if the Humours are equally mix'd with the Blood, that is, if the Blood is in every Part of the Body the same, and its Particles are not more apt to form certain Humours, in some certain Parts of the Body than in others; or if they are not forced by the Power of some Medicine to form such Humours; then the Quantities of Humour, separated in equal Times, will always be as the Velocity of Blood: but the Velocity of the Blood is doubled by any Medicine, and never tripled by the most acute Fever. The Quantity of Humours, however drawn off by evacuating Medicines, is often twenty Times greater than the natural Quantity; and therefore upon Supposition that the Humours are every where equally mix'd with the Blood, the Operation of evacuating Medicines can never be accounted for.

Though this Argument has the Strength of a Demonstration, yet there are some who explain the Operation of purgative and other evacuating Medicines by a stimulating Faculty, whereby the sluggish

gish Juices are not only forced out, but the obstructed Canals opened, and the Motion of the Blood quickened. But though such a Power be allowed, it would remain to be explained, why certain Medicines do only stimulate certain Glands ? For it is evident, that evacuating Medicines have some other Power besides that of squeezing out stagnant Juices, because when they are all squeezed out, they still evacuate as much, if they are repeated, as they did before, as is plain by continuing a Salivation for many Days. Secondly, We cannot suppose that all Bodies have every where, and at all Times, Juices stagnating ; but these Medicines constantly produce their Effects, more or less, at all Times. Thirdly, If the Vessels be supposed to be obstructed, and evacuating Medicine could but double the Quantity that was evacuated before it was taken. Fourthly, If these Medicines operate only these Ways, then in an healthful Body, where there were no Obstructions, they would have no Effect at all. Fifthly, If the removing Obstructions were the Cause of a greater Quantity evacuated, then the Evacuation should still continue in a greater Degree, than before the Obstruction was removed ; whereas in Fact, we constantly find it less, as the Medicine works off. Sixthly, Though a Medicine by stimulating a Vessel may quicken the Motion of Fluid in that Vessel, yet it can never increase the Quantity of Fluid running through it in equal Spaces of Time, because it quickens the Motion of the Fluid only by contracting the Vessel ; and therefore, the faster the Fluid is made to run through the Vessel,

the less Fluid the Orifice of the Vessel admits : And consequently, after the Vessel is contracted by the stimulating Medicine, the Secretion will be less instead of being greater. That a *Stimulus* causes the Part upon which it acts to contract, is Matter of Fact, and that purgative Medicines do stimulate the Bowels ; but likewise it may perhaps be said they stimulate the Heart and Arteries, and increase their Force, seeing they not only quicken, but raise the Pulse : So that a greater Quantity of Blood is sent to the Glands of the Guts. This may be granted, but not that it is the principal Action of purgative Medicines, because that by the same Force a greater Quantity of Blood is sent to all the other Glands of the Body, whose Fluids are not however sensibly increased ; and the Glands of the Intestines receive a less Quantity in Proportion than any others, because they cannot be so much dilated by the greater Force of the Blood, as others which are not so much stimulated by the Medicine.

There are others who will have evacuating Medicines endued with an attenuating Quality, by which they dissolve all the Cohesions of the Particles of the Blood, and so set the several Humours at Liberty to pass through their proper Glands : But if these Medicines have a Power universally to dissolve all the Cohesions of the Blood, then every evacuating Medicine would equally and indifferently increase the Quantity of every Secretion : Mercury would as constantly purge as salivate, and Nitre promote Perspiration as well as it does Urine ; but this is repugnant to Experience. If they

they have a Power to dissolve certain Cohesions and not others, this is but setting certain Particles at Liberty to pass through their proper Glands, which were not so before, and is a preparing the Humours, in order to increase the Quantity of Secretion. Evacuating Medicines must therefore have a Power to affect some Particles, and not others; that is, to repel some, and attract, retain, and alter others; and this is what may be affirm'd to be in all Medicines, and is what a thousand chymical Experiments demonstrate.

The several Humours then being formed by the different Cohesion of the Particles of Blood, the Quantity of Humour secreted by any Gland, must be in a Proportion compounded of the Proportion, that the Number of the Particles cohering in such a Manner as is proper to constitute the Humour, which passes through the Gland, bears to the Mass of Blood, and of the Proportion of the Quantity of Blood that arrives at the Gland. And hence it follows, that where there is a determinate Quantity of a certain Humour to be separated, the Number of Particles proper to compose the secreted Liquor, must be reciprocally proportional to the Quantity of Blood that arrives at the Gland: And therefore, if the Quantity of Secretion is to be increased, the Number of Particles is to be increased; if the Secretion is to be lessened, the Number of Particles proper for such a Secretion, is to be lessen'd in the same Proportion. Medicines therefore which can alter the Cohesions and Combinations of the Particles, can either increase or diminish the Quan-

tity of any Secretion. Thus, suppose the Humour which passeth through the Glands of the Intestines to be compos'd of three or four several Sorts of Particles; that Medicine which will easily cohere to those Particles, and cohering increase their mutual Attractions, so as they unite in greater Numbers, at or before they arrive at the Intestines, than they would have done, if the Medicine had not been given, must necessarily increase the Quantity of Humour which passeth through the Glands of the Intestines, if the Quantity of Blood which arrives at the Glands is not diminished in the same Proportion, as the Number of Particles is increas'd. After the same Manner do Diureticks, Sudorificks, and Medicines which promote all other Secretions, operate.

Why increasing the Quantity of some Secretions should diminish that of others, is not easy to explain upon any other Foot: For if the Blood be equally mix'd in every Part of the Body with all the Humours which are separated from it; that is, if the Mixture of the Blood is every where alike, so that every Humour bears the same Proportion to the rest of the Arterial Blood, in one Part of the Body that it does in another; and if every Humour has its own proper Gland through which it is separated, then what is separated by one Gland is not subtracted from another, and consequently does not diminish the Quantity of Humour which flows to this other, but does, indeed, rather increase the Quantity of this other Secretion: For the more any one Humour is carry'd off, the greater Proportion any other, remaining in

the

the Blood, bears to the remaining Blood; and therefore, the more any one Secretion is increased, the more all the rest should be increased likewise. But if all the Humours are composed by a Combination of a few different Sorts of Particles, then the more apt these Particles are to run into any one Sort of Combination, the less all other Combinations must be; and consequently the increasing any one Secretion must necessarily diminish the Quantity of all others; but most especially of that which has the most of the same Sort of Particles.

Medicinal Days, such are so call'd by some Writers, wherein no Crisis or Change is expected, so as to forbid the Use of Medicines, in order to wait Nature's Effort, and therefore require all Assistance from Art to help forward, or prepare the Humours for such a Crisis: but it is most properly used for those Days, wherein Purging, or any other Evacuation, is most conveniently comply'd with.

Medicinal Hours, are those wherein it is supposed that Medicines may be taken to the greatest Advantage, commonly reckon'd in the Morning fasting, about an Hour before Dinner, about four Hours after Dinner, and going to Bed; but in acute Cases the Times are to be governed by the Symptoms and Aggravation of the Distemper.

Meditullium, is that spongy Substance between the two Plates of the *Cranium*, and in the Interstices of all laminated Bones.

Medium, signifies that peculiar Space or Region through which Bodies move, as Air, Water, &c. And whatever Density or Tena-

city there is in the Parts of the *Medium*, whereby Bodies moving in it are retarded or stopped, is call'd the *Resistance of the Medium*. This Dr. Wallis has asserted to be always as the Square of the Velocity of the moving Body; but in a very dense *Medium*, it must be in a less *Ratio*. For in the former Computation it is considered, that by the Action of a swift Body, there is communicated to the same Quantity of the *Medium* a greater Motion in Proportion to that greater Velocity. As to the different Resistances resulting from the different Figures of moving Bodies thro' the same *Medium*, they are too various to be here recited: for which, therefore, consult the Works of Mathematicians on that Head. See also *Projectiles*.

Medius Venter, the middle Venter, is the Breast, or *Thorax*.

Medulla, Marrow: which see.

Medulla Cerebri, is the white soft Part of the Brain, cover'd on the Outside with the cortical Substance, which is of a more dark or ashy Colour. See *Brain*.

Medulla Oblongata, is that Part within the Skull, which is the beginning of the spinal Marrow; it is about three or four Inches in Length within the Skull, and then it descends to the *Os Sacrum*, through the Hole of the hinder Part of the Head and the *Vertebrae*: It sends out ten Pair of Nerves to the Chest, the *Abdomen*, and the Limbs. This is accounted the common Sensory, or Seat of Sensation, whereunto all the Impressions made upon the Nerves, by external Objects, are return'd.

Me-

Medulla Spinalis, or the Spinal Marrow, is the Continuation of the *Medulla Oblongata*, without the Skull, and which, passing through all the *Vertebrae* of the Back, ends in the *Os Sacrum*. It is the Origin of most of the Nerves of the Trunk of the Body, sending out thirty Pair on each Side to the Limbs, to the great Cavities, and other Parts. By a nice Hand it may be sever'd into many small Fibres, which may be traced up to its Original, the *Medulla Oblongata*.

Medullary Oil. The finer and more subtile Part of the Marrow of the Bones is thus called. Dr. Clopton Havers, in his *Osteology* says, It passeth not into them by Ducts, but by small Pores form'd into the Vesicles or Glandules, which are conglomerated into distinct *Lobules*, contained in several Membranes investing the whole Marrow; all which Vesicles or Bags are propagated from the outward Coat of the Arteries; and by which it passes from one to another, till it arrives at the Sides or extreme Parts of the Bone. That Part of it which is supply'd to the Interstices of the Joints goes into them by Passages, penetrating thro' the Bone into those Cavities, and form'd for that End. The Use of this Oil is either common to all the Bones, whose Temper it preserves and keeps from being too brittle; or more peculiar for the Joints, where it is very serviceable, 1. To lubricate the Bones at their Extremities, that they may move more easily and free. 2. To keep the Ends of the articulated Bones from growing hot with Motion. 3. To preserve the Joints from wearing by Attrition, and rubbing against one another. And, 4. To

preserve the Ligaments of the Joints from Dryness and Rigidity; and lubricate those Parts which slide upon the Bones, and keep the Cartilages, which are join'd to them, flexible.

Megales, *μεγαλῆς*, great; is prefixed to many Things which exceed their common Bulks, as *Megalophonus*, *μεγαλόφωνος*, to one who hath a large Voice; and *Megalosplanchnos*, *μεγαλοσπλάγχνυς*, by *Hippocrates*, to one who hath *Viscera* preternaturally large.

Melanagogues, are such Medicines as are supposed particularly to purge off black Choler; from *μέλας*, *niger*, black, and *ἄγω*, *duco*, to lead: but there is no such Distinction of Choler now much regarded, and consequently this Term is but little used.

Melancholy, from *μέλας*, *niger*, black, and *χολή*, *Bilis*, Choler; thus call'd, because supposed to proceed from a Redundance of black Bile: but it is better known to arise from too heavy and too viscid a Blood, which permits not a Sufficiency of Spirits to be separated in the Brain to animate and invigorate the Nerves and Muscles. Its Cure is in Evacuation, Nervous Medicines, and powerful *Stimuli*.

Meliceris, from *μελί*, *mel*, Honey; is a Tumour inclosed in a *Cystis*, and consisting of Matter like Honey: It gathers without Pain, and gives Way to Pressure, but returns again. It is to be cured by warm Discutients.

Melosis, *μήλωσις*, is a Term which frequently occurs in *Hippocrates*, *De Capit. Vulner.* for that Search into Wounds which is made by Surgeons with the *Specillum* or Probe. And,

Melotis, *μηλωτίς*, is used for the lesser *Specillum*, and often for that particular Instrument contrived to search or cleanse the Ear with, more commonly call'd *Auriscalpium*.

Mellego, was formerly much used for any Juice or Liquid that was boiled up to the Consistence of Honey.

Membrane. This is a Web of several Sorts of Fibres interwoven together for the Covering and Wrapping up some Parts. The Fibres of the Membranes give them an Elasticity, whereby they can contract, and closely grasp the Parts they contain, and their nervous Fibres give them an exquisite Sense, which is the Cause of their Contraction; they can, therefore, scarcely suffer the Sharpness of Medicines, and are difficultly united, when wounded. In their Texture there is a Number of small Glands, which separate an Humour fit for moistening the Parts which they contain. By reason of the Thickness and Transparency of the Membranes, the Ramifications of the Blood-Vessels are more apparently to be seen in them than in any other Part of the Body; here the innumerable Divisions, Windings, and Turnings, serpentine Progressions, and frequent Inosculation not only of Veins and Arteries together, but also of Veins with Veins, and Arteries with Arteries, make a most agreeable Embroidery, and delicate Network covering the whole Membrane. Nor is Nature always constant to the same Disposition, but delights in Variety here, as well as in the Disposition of the Branches and Leaves of Plants and Trees. Those that cover the solid Parts are properly called Membranes; and they have their

particular Names, as the *Peritoneum*, which wraps up all that is contained in the *Abdomen*; the *Pleura*, that which is in the *Thorax*; the *Periosteum*, the Bones; and the *Pericardium*, the Heart. Those which form the Coats of Vessels, and which contain the Humours, as those of the Veins and Arteries, Stomach, Bladder, Intestines, Testicles, &c. are call'd *Tunics* or Coats: and those which cover and embrace the Brain, as the *Dura Mater*, and the *Pia Mater*, are called *Meninges*. Of all these Kinds of Membranes, some are thin, and some are thick; and the same Membrane is thick in some Places, and thin in others, as in the *Membrana Adiposa*, which is thicker in the Neck than in any other Part of the Body. The Use of the Membranes is to cover and wrap up the Parts, and strengthen them; to save them from external Injuries; to preserve the natural Heat; to join one Part to another; to sustain small Vessels, and the Nerves which run thro' their Duplicatures; to stop the Returning of the Humours in their Vessels, as the Valves stop the Returning of the Blood in the Veins and Heart; of the Chyle in the Lacteals and thoracick Duct; and of the *Lympha* in the lymphatick Vessels. By the *Membrana Adiposa* is most commonly understood that Part of it only which lies next the Flesh, and which contains but little Fat in its Cells; and, therefore, appearing more membranous than the rest, is said to be the Basis of the *Cellula Adiposa*. And even some Part of this hath been taken by Anatomists for the *Membrana Carnosa*, on the Account of its Redness;

for here the Blood-Vessels lie very thick, the Vesicles not being distended with Fat. Anatomists do generally assert, That there is a *Membrana communis Musculorum*, being led into that Mistake by the *Aponeurosis* of several Muscles; whereas upon stricter Observation, there is no such Thing to be found. The *Membrana propria Musculorum* is that which immediately covers all and every one of the Fibres of a Muscle, and is closely tacked to them. There is another call'd *Membrana communis Vasculorum*, which is a thin Membrane, and accompanies almost all the Vessels of the Body. All these Membranes receive Veins, Arteries, and Nerves from the Parts which are nearest to them.

Membrana Adiposa: See the preceeding, and *Adiposa Membrana*.

Membrana Carnosa, the same as *Panniculus Carnosus*.

Membrana communis Musculorum. See *Membrane*.

Membrana Propria Musculorum. See *Membrane*.

Membrana Tympani. See *Ear*.

Membrana Urinaria, the same as *Allantois*; which see.

Membranofus Musculus, is a Muscle of the Leg, so call'd from the large membranous Expansion it is continued with, inclosing all the Muscles of the *Tibia* and *Tarsus*; whence it is also call'd *Fascia lata*. It hath a sharp fleshy Beginning from the Fore-part of the Spine of the *Os Ilium*, between the Origination of the *Sartorius* and tendinous Beginning of the *Glutæus magnus*; and being dilated to a fleshy Belly, which fills the Interstice made by the first of the two last named Muscles, and upper

Part of the *Rectus* and Fore-part of the *Glutæus medius*, in its oblique Descent becomes tendinous, four Fingers Breadth below the great *Trochanter*, whence it passes directly over the *Vastus externus* to its proper Termination, at the superior Appendix of the *Fibula*: but in its Progress thither, it is conjoin'd with the tendinous Expansion of the *Glutæus magnus*, which ariseth from the Spine of the *Ilium*, covering the external Part of the *Glutæus medius*, and all the external Muscles of the *Tibia*, as those of the Thigh-bone; and descending over the *Patella*, comprehends all the Muscles of the *Tarsus*, and joins with the *Ligamentum Annulare*, which retains the Tendons of the Toes and Feet. When this Muscle acteth, the Leg and Thigh are drawn outwards.

Membrum, a Member, or Limb.

Memory, is that Faculty whereby the Mind repeats Things received by former Sensations; or is the calling to Mind known and past Things: as when we conceive Heat or Light, Sweet or Bitter, &c. when the Object is removed; and it is in a Manner the Store-House of our Ideas. Many Philosophers, as well as Physicians, have been at great Pains to give some intelligible Account of this Power, but without any further Success than to puzzle themselves and others more than they were before.

Menagogues, are such Medicines as promote the Flux of the *Menses*.

Mendofus, is used by some in the same Sense as *Spurius* or *Illegitimus*; as *Mendosa Costæ*, and *Mendosa Sutura*.

Meningophylax, is an Instrument used in Wounds of the Head, largely described by *Celsus*, but more accurately, with its Use, by *Scultetus*, *Arm. Chirurg. Part I. Tab. 2. Fig. 10.* *Gorræus* takes Notice of somewhat like it, under the Name *Veſtis*, the same as the *Mochlion* of the *Greeks*.

Meninx, or *Meninges*. See *Brain* and *Membrane*.

Menſes. These are the Monthly Evacuations of Women from the *Uterus*; and is as nice an Affair rightly to understand, as any Thing that concerns the human Mechanism. In order hereunto therefore, besides what was said before under *Generation-Parts of, peculiar to Women*, which see; it may be necessary further to observe, 1. That the *Vagina*, or Passage to the Womb in Women, as well as the whole Body, is perpendicular to the Horizon, whereas in all Brutes it is in a Parallel Situation. 2. That the Membrane covering the Womb on the Inside, as well as the *Vagina*, and into which there are diffused a great Number of Veins and Arteries, is very thin, and without Fat; so that these Vessels are less guarded than in other Parts, where they are inclosed with Muscles and Fat. 3. That the Blood-Vessels in this Part are prodigiously numerous, and particularly in the Womb; where also their large Ramifications inosculate with one another, the Arteries with the Arteries, and the Veins with the Veins; and likewise the Branches of one Side of the Womb with those on the other, which meet not one another, in strait Lines, but are folded and curv'd into a Multitude of Serpentine Windings. Which

Constructure is necessary at the Time of being big, else the Vessels would be so pressed, as to burst or obstruct; whereas this Contrivance helps them to give Way, and keep always the Passage of some free. 4. That the descending Trunk of the *Aorta* is much larger in Women than in Men. And, 5. That the uterine Veins have no Valves.

Now, in order to know why these Vessels are so frequently broke through, it is of Consequence to premise, that Women are of a more tender Frame than Men; and that therefore, when they are at, or near full Growth, the Quantity taken in by Diet is not digested, and broke enough to go away in a due Proportion by Evacuation; and therefore in the Vessels there is an Accumulation of Humours, or a *Plethora*. But then to understand how this Overplus is carry'd off by this Discharge, it will be needful also to attend to these following Propositions, which Mathematicians teach us.

Prop. 1. The Moment of every Body, or that Force, by which every Body endeavours to press forward, is increased, by increasing the Velocity, or Quantity of Matter, or both.

2. If the Moment of any Body is greater than the Impediment in its Way, it will remove that Impediment.

3. In all Percussions the Stroke is proportional to the Force lost.

4. The Force lost is as the Resistance.

5. If a Body is projected against any Impediment with a given Force, the Stroke will be as the Sign of the Angle of Incidence.

6. In every Fluid there is not only a Pressure downwards, but every Way.

7. A Fluid presses upon inclosing Bodies on every Side, with a Force equal to that by which its Parts endeavour to recede from one another.

8. The lateral Pressure is as the Height of the incumbent Fluid.

9. The Direction of such Pressure is perpendicular to the Sides of the Vessel which are pressed upon.

The two first Propositions shew why the Blood breaks thro' the Vessels in a *Plethora*; and the rest, why thro' the uterine Vessels. Nothing is more plain, than that the Moment of the Blood is increased in a *Plethora*, if its Velocity continues the same; because its Quantity is increased: To which, if an increased Velocity be added, its Moment will be still much greater. And, in a *Plethora*, both the Quantity and Velocity of Blood is increased, if there is no Lensor, or Viscidity; for, in a Blood rightly digested, the Quantity of Spirits secreted will be as its Quantity; and the more they are separated, the more forcibly will the Heart contract, and consequently, throw the Blood with greater Force against any Impediment: For, in this Case, the Blood-Vessels are

look'd upon to be such, and will continue to be so, as long as their Resistance is greater, or equal to the Blood's Moment; but when that Moment exceeds such Resistance, the Blood will break through them. And the uterine Vessels, because they are not guarded with Muscles of Fat, are the most easy to be thus broke through.

Because by *Prop.* 3. the Stroke in all Percussions is as the Force lost, let it be examined, Whether there is any Diminution of Velocity in the uterine Vessels, and which may easily be deduced from the Structure of those Vessels already taken Notice of: For, they go on not in streight Lines, but in various Windings over the whole *Uterus*. And therefore, since by *Prop.* 4. the Diminution of Velocity is as the Resistance; if in them there is a greater Resistance, the Stroke upon them will be the greater. And, that there is a greater Resistance in those Vessels, may be thus demonstrated: If a Fluid be propelled in a straight Canal, there can only be a lateral Pressure, so far as the the Fluid thrusts against the Sides of the Vessels, by *Prop.* 7. for the Sides oppose not its direct Motion. But if a Fluid be propelled through a curval Canal, it then not only presses against the Sides of the Canal, but its Moment, as much as can be, bears against them; and by how much the greater this Impediment is, by so much the more will be the Stroke upon them. And the greater the Curvity is of such a Vessel, that is, the more opposite it is to the Direction of the Fluid,

Fluid, the greater will be its Resistance ; and consequently, will the Fluid be propelled against it with the greater Force, or the

greater will its Stroke upon it be : and by this Means will the Fluid have a greater Advantage in breaking through it.

Fig. 1

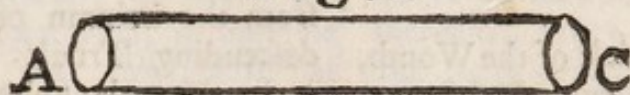


Fig. 2

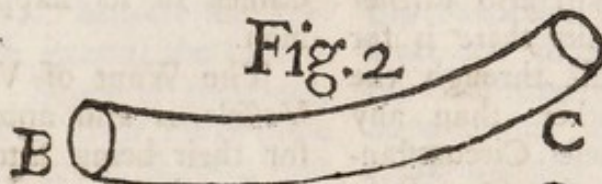


Fig. 3

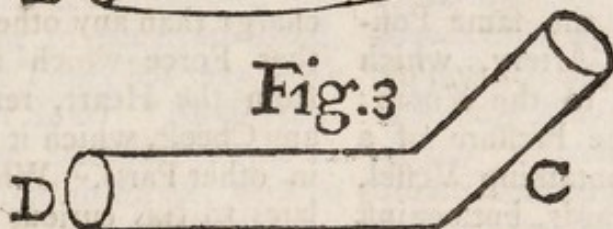
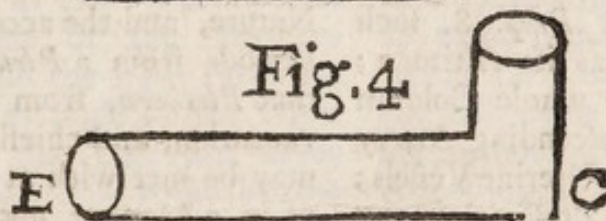


Fig. 4



In the Cylindrical Canal *AC*, (*Fig. 1.*) where the Axis is parallel to the Direction of the Fluid, the Fluid will have no Force upon its Sides ; and therefore will there be no Stroke against them : For all the Power the Fluid in this Case has, is against the Sides of the Vessels perpendicularly. But if the Quantity of Fluid is increased, such Pressure will be increased, which will occasion a Distension of the Canal, and thereby a laxer Texture of Fibres, and a weaker Cohesion betwixt them. If then the Vessels be somewhat inflected, so that the Blood runs obliquely from *B* to *C*, (as in *Fig. 2.*) an increased Quantity

of Blood will not only distend its Sides, but be thrown against the inflected Part with a Force ; and this Force will be greater, if the Vessels be more inflected, being always as the Sign of the Angle of Incidence. For, if the Blood be directed from *D* to *C*, (as in *Fig. 3.*) the Stroke at *C* will be greater than when it runs from *B* to *C* (in *Fig. 2.*) and therefore, the more the Canal continues to be inflected, the more will the Blood's Force upon *C* be augmented, until it comes to be quite perpendicular, (as in *Fig. 4.*) when it will be the greatest possible ; because there the Sine of the Angle of Incidence is greatest. Add to

this also, that the more the Vessels are contorted in their Progress to any Part, the longer they must be to reach it; and the longer they are, the greater Quantities of Blood will they contain, and in a greater Quantity of Blood there is a greater Moment, and consequently, it will sooner make an Eruption thro' the Vessels.

From the Fabrick of the Womb, as to its perpendicular Position to the Horizon, it will also further appear what Necessity there is for the Blood to break through the Vessels there, rather than any where else, in these Circumstances; as also from the same Position of the great Artery, which carries the Blood to the Womb: For by *Prop. 7.* the Pressure of a Fluid upon its containing Vessel, is not only downwards, but against its Sides; and by *Prop. 8.* such lateral Pressure is as its Altitude; and therefore, the whole Column of Blood in the descending Artery will press upon the Uterine Vessels; and because that Pressure is by *Prop. 9.* perpendicular to their Sides, it will distend them. And, if such distention be join'd to the Advantage which the Blood has against the Uterine Vessels, by Means of their Inflections, it can be no Wonder, why the Blood breaks through them sooner than any where else. For, by Reason of the *Plethora*, and the Weight of a Fluid pressing perpendicularly against the Sides of the Vessels, the Sides of those Vessels become stretched, so that their constituent Fibres are at greater Distances from one another; and by how much the more they are so divided, by so much the easier will any Force break quite through them. And

hence arises very naturally the Reason why Brutes, which have the same Fabrick of Parts, have not these Discharges, because their Situation with Regard to the principal Canals, are parallel to the Horizon, which entirely takes away all that perpendicular Pressure against the Sides of the Vessels from the Column of Blood in the descending Trunk of the *Aorta*, and which is none of the least Causes of its happening to Women.

The Want of Valves in these Vessels is also another Argument for their being fitter for this Discharge than any other; because all that Force which the Blood has from the Heart, remains without any Check, which it has from them in other Parts. What further relates to this curious Mechanism of Nature, and the accounting for the Periods from a *Plethora*; and for that *Plethora*, from a Defect in Evacuation, and chiefly Perspiration; may be met with at large, treated of in a Manner uncommonly elegant, and demonstrative, in Dr. *Friend's Emmenologia*. See also *Mars. Menstrual Discharge*. The same as *Menses*.

Menstrua Alba, The same as *Fluor albus*, the White Flux; which see.

Menstruum. All Liquors are so called, which are us'd as Dissolvents, or to extract the Virtues or Ingredients by Infusion, Decoction, &c. There have been many Inventions to explicate why some Bodies dissolve in a Saline *Menstruum*, as Metals; others in a Sulphureous, as Resins; others again in an Aqueous, as Salts: Particularly, great Controversies have arisen about *Aqua Fortis*, and

and *Aqua Regia*, why the first dissolves Silver, and not Gold, and why the latter dissolves Gold, and will not touch Silver. But all which is advanced for this Purpose is so precarious, that their Arguments will not be thought of any Force amongst right Reasoners. To bring this Matter, therefore, to our better Conception, it may be remember'd, that the Cavity of the Pores in Gold is not so great as that of Silver, because its Gravity does much exceed the Gravity of Silver. Suppose, therefore, the Diameters of their Pores to be as 2 to 1, then it will follow, that Corpuscles, fit to penetrate Gold, must be eight Times less than those that will enter Silver. Again, suppose, that the attractive Force in Gold is to that in Silver, as 2 to 1, or as 40 to 20. Farther, let the Diameters of the Particles which compose the *Aqua Fortis* be twice as big as those of the Pores of Gold, so that they can never enter or penetrate it; and let the Force with which Silver attracts *Aqua Fortis*, compared with the Force whereby the Particles of that *Mensstruum* attract one another, be as 20 to 12, and the Cohesion of the Silver to the Moment with which the Particles of *Aqua Fortis* rush against it, as 8 to 3, which Degree of Force will be sufficient to make them break the Texture of Silver. Lastly, Suppose the Cohesion of the Particles of Gold to be to that of Silver, as 3 to 2, upon dissolving *Sal Armoniack* in *Aqua Fortis*, there arises, as is well known by Experience, such a vehement Fermentation, that, unless it is poured on leisurely, by little and little, the Glass must burst. So that, from this violent

Motion, and the continual Collision of the Particles one against another, it may be very well concluded, that their Diameters are lessen'd by half, and at length become so small, as to be capable of entering the Pores of Gold. We should take Notice also, that the Force of the *Mensstruum* is much increased, when *Sal Armoniack*, or Bay-Salt, is dissolved in the *Aqua Fortis*, i. e. the Force whereby the Particles of the *Mensstruum* attract one another, is increased by the Addition of such Corpuscles as are very attractive; whereas, therefore, the Force of the *Mensstruum* was before as 12, let it be supposed now advanced to 16, when the *Aqua Fortis* is made *Aqua Regia*. Hence, if the attractive Force be compared, that of Silver to *Aqua Regia* will be found as 20 to 16; and the Velocity with which the Corpuscles of *Aqua Regia* fall upon the Silver, will be proportional to the Difference of Attraction, viz. 4. If all the Particles of *Aqua Regia* were just as big as they are in *Aqua Fortis*, then their Quantity of Motion will bear the same Proportion to the Cohesion of the Silver, as 4 to 3. But by Supposition each Particle is eight Times less, and consequently, must have but the eighth Part of the Moment; so that the Moment with which the Corpuscles of *Aqua Regia* act upon Silver, compared with the Cohesion of the Metal, will be as $\frac{4}{8}$ or $\frac{1}{2}$ to 3, i. e. as 1 to 6. Hence it is evident, that in these Circumstances Silver cannot be dissolved by *Aqua Regia*: but, if we compare the attractive Force in Gold to that of *Aqua Regia*, it will be found, as 40 to 16; there

fore, the Velocity with which the Particles of it attract the Gold, will be as the Difference 24, which Number multiply'd by $\frac{1}{8}$, i. e. the Magnitude of the Particles will give the Quantity of Motion $= \frac{24}{8} = 3$. The Cohesion of Gold is supposed to be 2, which, being exceeded by the Force of the *Mensstruum*, must yield to it, and be dissolved. If, upon comparing the Attraction of the two Metals, that of Gold be triple, when the Attraction of Silver is 20, that of Gold will be 60; and the Difference there is between the attractive Force of Gold and *Aqua Regia*, 44 multiply'd by $\frac{1}{8}$ (the Magnitude of the Particles in *Aqua Regia*) will give a Moment $\frac{44}{8}$, or $\frac{11}{2}$. And since the Force of Cohesion, or Resistance, is as $\frac{11}{2}$, or as 11 to 4, that is, it will exceed it almost thrice; the Examples we have given may be varied almost infinite Ways, but it will come to the same Thing, whatever Numbers are apply'd. But, to make the Matter more general, suppose the Attraction of Gold to that of Silver to be, as a to b , and Silver to *Aqua Fortis*, as b to d , but that of *Aqua Fortis*, to *Aqua Regia*, as d to e ; let f signify the Magnitude of Particles in *Aqua Fortis*, and r those in *Aqua Regia*, c the Cohesion of Gold, and g the Cohesion of Silver. If the Diameters of the Particles f are greater than the Diameters of the Pores of Gold, they can never dissolve the Gold, let their attractive Force be ever so strong. But, if $\frac{b}{d} \times f$ exceeds g , then the Silver will yield to that *Mensstruum* whose Particles are f , and less than the Pores of the Silver: And if $\frac{b}{e} \times r$ is less than g ,

the Silver will never dissolve in that *Mensstruum*, the Particles of which are r , and the attractive Force e . But, if $\frac{a}{e} \times r$ be greater than c , the *Mensstruum* made up of the Particles r , and whose attractive Force is e , will be able to penetrate and dissolve the Gold. Now because, in this Case, the indeterminate Letters are more than the given Quantities, it is evident, that this Problem may be accounted for several Ways, every one of which will equally solve the Question; but, as the Proportion between the Pores and Cohesion of Gold and Silver, and the Proportion of the attractive Forces of the Metals and the *Mensstruums*, necessary to make the Solution exact, are but guess'd at; yet perhaps, when Experiments have been more accurately made, they may furnish these *Data* with more Certainty. And upon the same Principles and Way of Procedure is this whole Affair to be understood. See *Dissolution, Extraction, Fusion, &c.*

How a *Mensstruum* can suspend Bodies much heavier than itself, which very often happens, may be conceiv'd by considering, that the Parts of no Fluids can be so easily separated, but they will a little resist, or retard the Descent of any heavy Bodies thro' them: and that this Resistance is, *cæteris paribus*, still proportionable to the Surface of the descending Bodies. But the Surface of Bodies do by no Means increase or decrease, in the same Proportion as their Solidities do: For the Solidity increases as the Cube, but the Surface only as the Squares of the Diameter; wherefore, it is plain, very small Bodies will have much larger

larger Surfaces, in Proportion to their solid Contents, than larger Bodies will, and consequently, when grown exceeding small, may easily be buoy'd up in the Liquor.

Mensurable, or

Mensurability, is when a Body is reducible to any certain Measure.

Mentula, the same as *Penis* and *Clitoris*; and,

Mentulagra, is a Name given to a Distemper, wherein the genital Parts of the Male are contracted by a Convulsion, the same as *Paulus Ammannus* explains of the *Spadones*; which see.

Mentum, is so much of the lowest Part of the Face, as we distinguish by the Name of *Chin*.

Mephites, and

Mephitical Exhalations, are poisonous or noxious Steams issuing out of the Earth, from what Cause soever. The most remarkable Place of this Kind is in the *Grotta de Cani*, near *Puzzoli*, about two Miles from *Naples* in *Italy*; the Steams of which kill Dogs or other Animals, when brought within its Reach. A very curious Account of which, and the Manner of its Efficacy, is given by Dr. *Mead*, in his *Essay on Poisons*. See *Poison*.

Mercury, with the Chymists, is the third hypostatical Principle, and seems not to differ from what is call'd Spirit. They also talk much of the

Mercuries of Metals; but they conceal their Notions in such a peculiar Cant and Jargon, as to run no Hazard of being contradicted, by being understood. Mr. *Boyle*, indeed, speaks of a running Mercury, which he obtained from Antimony; but that must be a Mer-

cury in a much grosser Sense than these obscure Philosophers seem to aim at.

But though this Metal has long had a Share in Medicine, yet it seems not rightly to have been understood, either as to the true Manner of its Preparation, or its Operation in an human Body, till of late. And in this we have a remarkable Instance of the Usefulness of mechanical Knowledge; and of which an ordinary Person may soon be convinced, who will be at the Pains to compare the Reasonings of Monsieur *Lemery*, who is the latest and best Improver of Chymistry, and Dr. *Chyne*, with some others, upon the Properties of this Metal. The former is absurd, obscure, and unintelligible, the latter instructive and demonstrative. The Fluidity of Mercury is easily understood from the Sphericity of its Parts, which makes them so readily roll over one another; and its Gravity, from the Solidity of those Parts, containing so much Matter in Proportion to their Surfaces; for, a Sphere of all Figures has the least Surface with respect to the Matter it contains. The only Difficulty, therefore, is to know how it comes about, that a Body, so extremely heavy, should be sooner raised by Fire, than those which are much lighter. And this we are soon taught to understand, from that Help which Geometry affords, teaching us, that upon the Division of solid Spheres, their Gravities decrease in a triplicate Proportion of their Diameters; but the Superficies only in a duplicate. So that a Body circumstanced as Mercury, if it be devisible into very light Parts, may be render'd prodigiously light,

i. e. specifically so ; for the further it is divided, it grows comparatively lighter, as the same Quantity of Matter, which determines its absolute Weight, comes to exist after such Division under much more Surface ; which determines its relative Weight : and if this Division is continued till it is specifically lighter than Air, then will it rise in Air by the known Laws of Nature. Because, therefore the Sphericity of Mercurial Particles gives them less Contact with one another ; and that by the Force of so minute, though active an Agent as Fire, its Globules are to be broken into almost an infinite Number of more Globules, their specifick Gravities will soon be render'd so much less than those of Air, that they cannot but fly upwards in imperceptible Vapour : When other Bodies specifically lighter in larger Coalescences, because they are not so divisible, and their Figures admit not of such a Decrease of Substance so much faster than their Surfaces, as those of Mercury do, cannot be render'd so much specifically lighter, and therefore cannot so soon rise in Vapour.

But his Solution is much more to our Purpose, as it gives great Light into some Effects of this Metal, when it comes into Medicine. For which very Reason it may be also necessary to examine into those Properties which arise from its Gravity ; and whereby it occasions such prodigious Alterations, in rendering the animal Fluids thinner, and breaking open the secretory Passages. But what it does, by its Gravity, in common with other Metalline Substances of the like Properties may be

collected from what has been said concerning Chalybeates under the Word *Mars* ; which see. But here, on that Account, it may be convenient to add, that the same Reasons which make it so powerful a Deobstruent, give us certain Rules wherein to avoid its Use, as in Hæticks, and all Cases where the Constitution is drawn low by two large Evacuations ; because Mercurials will keep up the Excess of *Impetus* in the Fluids, and that Over-Capacity in the secretory Orifices, in which such an Extreme of Constitution depends.

To understand more distinctly the Manner of Operation, and particularly, how a Metal of no remarkable Efficacy is changed into a violent Poison, in making it into the common Sublimate, and again into a safe Cathartick, in the *Mercurius Dulcis* ; it is necessary diligently to attend to the Procedure in those Processes. In the first the mercurial *Globuli* are, as it were, stuck full of sharp Salts from *Aqua Fortis*, so that each Particle comes to be like a Ball stuck round with sharp Needles. The first manifest Quality, or Alteration made hereby, is the Loss of Fluidity in the Mercury ; for, their rolling about in such an acid *Menstruum*, until they become full of *Spiculae*, changes their smooth Surfaces into very unequal ones, whereby they will not slide over one another, but become permanent and fix'd. In this, therefore, these two Circumstances seem to concur, to change those Things into mischievous Dispositions, which separately had none. The Salt being so drove into the mercurial Globules, gives them Points which

which they had not before; and the mercurial Globules add to the Saline Particles a Gravity and Force, which they had not without them: that is, Crude Mercury by its Weight, when in Circulation in the Juices, would strike hard upon whatsoever it met with, but, for want of Angles, or Points, could not vellicate the Parts: and the saline Particles, though they had Points, have not Force enough to drive them into the Membranes, so as to do much Harm. But when by this Process, they are join'd together, the Weight of the Mercury drives in the saline *Spiculæ* like Wedges, and makes them cut and tear to Pieces whatsoever comes in their Way. So that these Crystals, or arm'd Balls, as so many Knives and Daggers, wound and stab the tender Coats of the Stomach and Guts, and all Parts they pass through, whereby they abrade their natural *Mucus*, tear off the Extremities of the Vessels, and draw Blood itself.

This being the Nature of Sublimate, from such a Contexture of Parts; it will not be difficult to apprehend, how in making it into *Mercurius Dulcis*, the same re-sublim'd with fresh live Mercury, especially if it be repeated three or four Times, looses its Corrosiveness to that Degree, that it not only becomes a very safe, but in many Cases an excellent Medicine. To this End it is to be consider'd, that the Action of these saline *Spiculæ*, depending upon their Gravities and Largeness, they must necessarily by every subsequent Sublimation, be broken into smaller and smaller Parts; whereby those Points, which were before so sharp, will be al-

most lost, so as not to make Wounds deep enough to be mischievous and deadly; and, therefore, will only vellicate and twitch the sensible Membranes of the Stomach to that Degree, as to excite them to an Excretion of their Contents and glandulous Juices, upwards or downwards, according as the Force of the Irritation is greater or less. The few Salts remaining in these mercurial *Globuli*, may, perhaps, be much taken off in their Passage through the *Primæ Viæ*, but not all together; so that when these Globules get into the Blood, by their Motion and Weight, they must necessarily dissolve the preternatural Cohesions of all the Liquors: particularly of those which circulate in the smallest Canals, and are more viscid and tenacious, making them more fluxile and thin or of more easy Secretion; whereupon all the Glands of the Body are set to Work, and scoured of their Contents: but the salival ones, especially being many in Number, very large and wide, and the Juice they separate, of a tough and ropy Consistence, so that a considerable Quantity of it is accumulated, before it is forced out of the Orifices of the Ducts; these Effects will be most remarkable in them; and a Salivation or Spitting must continue so long, till the active mineral Particles are through these and other Passages discharged quite out of the Body. See *Salivation*.

Mercurials, are all things prepar'd with Quicksilver.

Meridian, is a great Circle passing thro' the Poles of the World; it crosseth the Equinoctial at right Angles, and divideth the Sphere into

into two equal Parts, one East, and the other West : and has its Poles in the East and West Point of the Horizon. It is called Meridian, because, when the Sun cometh to the South Part of this Circle, 'tis then *Meridies*, Mid-Day, or High-Noon ; and then the Sun hath its greatest Altitude for that Day, which is therefore called the Meridian Altitude. The Meridians change, and are various according to the Longitudes of Places ; so that they may be said to be infinite in Number, for that all Places from East to West have their several Meridians ; but there is, or should be, one fixed, which is called the first Meridian.

Merus, is applied to several Things in the same Sense as genuine, or unadulterated, as *Merum Vinum*, Neat Wine.

Mesarieum, and

Mesaraica Vasa;

Mesenteriacæ Vasa, all signify the same Thing from μέσος, *Medium*, the Middle, and αἰετὶον, *tenue*, slender or thin ; from the Situation and Fabrick of those Parts : Which see further, under

Mesenterium, the Mesentery, from μέσος, *Medium*, the Middle, and ἑντέριον, *Intestinum*, a Gut, because it is in the Middle of the Guts : For, all the Guts lying in a little Space, they are kept from entangling with one another by the Mesentery, which is a fat Membrane placed in the Middle of the *Abdomen*, almost of a circular Figure, with a narrow Production, to which the End of the *Colon* and Beginning of the *Rectum* are tied. It is about four Fingers Breadth and an half in Diameter ; its Circumference, being full of Plaits and Foldings, is about three

Ells in Length. The Intestines, which are tied like a Border on this Circumference, are about eight or nine Ells long ; so that to every Inch of the Circumference of the Mesentery, there are three Inches of the Intestines fastened. The Mesentery itself is strongly tied to the three first *Vertebrae* of the Loins. It is composed of three *Laminae* ; the inner, upon which the Glands and Fat lie, and the Veins and Arteries run, is its own proper Membrane ; and the other two, which cover each Side of the proper Membrane, come from the *Peritonæum*. Between the two external *Laminae* of the Mesentery run the Branches of the *Arteria Mesenterica*, superior and inferior, which bring the Blood to the Intestines, and the *Venæ Mesaraicæ*, which, being Branches of the *Portæ*, carry the Blood back to the Liver. Here all the large Branches of both Arteries and Veins, communicating with one another, march directly to the Guts, where with the Nerves from the *Plexus Mesentericus*, they divide into an infinite Number of small Branches, which spread themselves exceeding finely upon the Coats of the Intestines. The *Venæ Lactææ* and lymphatick Vessels run likewise upon the Mesentery, in which there are also several vesicular Glands, the biggest of which, in the Middle of the Mesentery, is called *Pancreas Aseleii*. These Glands receive the *Lympha* and Chyle from the lacteal Veins ; which see.

Mesoglossi, are the same Muscles as the *Genioglossi* : which see.

Meso-Pleuri, from μέσος, *Medium*, the Middle, and πλευρά, *Latus*, the Side, are the same

as in the intercostal Muscles ; which see.

Metabasis, and *Metabole*, *μεταβάσις*, *μεταβολή*, signifies any Change from one Thing to another, either in the curative Indications, or the Symptoms of a Distemper.

Metacarpus, and

Metacarpium, from *μετά*, *post*, behind, and *καρπός*, *Manus*, the Hand ; is made up of four Bones which answer the four Fingers ; that which sustains the Fore-finger is the biggest and longest ; they are round and long, a little convex and round towards the Back of the Hand, and concave and plain towards the Palm. They are hollow in the Middle, and full of Marrow ; they touch one another only at their Extremities, leaving Spaces in their Middle, in which lie the *Musculi Interossei*. In their upper End there is a *Sinus* which receives the Bones of the Wrist, and their lower Extremity is round, and is received into the *Sinus* of the first Bones of the Fingers.

Metallum, Metal, is a Mineral, for the most Part, of an hard Consistence, close, ductile, and fusible ; it is, by Naturalists, distinguished commonly into two Sorts, *viz.* perfect and imperfect. The first are either natural, or factitious : the natural are such as, of themselves, grow in the Earth, without any other Kind of Mixture or Help by Art ; the factitious are such as are made by Art. The imperfect are either metalline but in Part, as Antimony ; or recrementitious, as Litharge. See *Wilkin's Real Character*, *Woodward's Theory of the Earth*, &c.

Metalline Particles : How they operate in human Bodies ; see *Mars*.

Metallurgy, stands for the Art of working Metals, or separating them from their Ore.

Metamorphosis, is apply'd by *Harvey*, to the Changes an Animal undergoes, both in its Formation and Growth ; and by several, to the various Shapes some Insects in particular pass through, as the Silk-Worm, and the like.

Metaptosis, *μετάπλωσις*, is said of the Change of one Disease into another ; and is distinguished into a *Diadoche*, when the Translation proves salutary, as of congested Matter from the nobler Parts to those which it can do no Harm to, but be critically exterminated ; and a *Metastasis*, which is a Change for the worse, or without any such Advantage.

Metastasis, from *μετέμω*, *transfere*, to change, or translate ; signifies the Removal of a Humour from one Part to another ; which is most commonly known in nervous Cases ; and it is sometimes also in grosser Humours, the reflux Blood taking up digested Matter from one Part, and depositing it upon another. It is a Species of the *Metaptosis*, which see.

Metatarsus, from *μετά*, *post*, behind, and *τάρος*, *Crates*, or *Tarsus*, the Foot. This Part consists of five Bones ; that which sustains the great Toe, is the thickest, and that which sustains the next Toe is the longest ; the rest grow each shorter than another. They are longer than the Bones of the *Metacarpus* : In other Things they are like them, and they are articulated to the Toes

Toes, as those of the *Metacarpus* are to the Fingers.

Methodica Medicina, signifies that Practice which was conducted by Rules, such as were taught by *Galen* and his Followers, in Opposition to the Empirical Practice: and therefore,

Methodici, Methodists, were those who followed such Rules: and

Methodus, Method, was the Means such Rules directed to.

Metropolis, signifying properly a chief City, Castle, or the like, is, by some, apply'd to the Head, as the principal Part of an Animal.

Metoproposis, *μωτοπροπίσις*, is the falling down of the Womb; and whence a Plaister, formerly in the *Dispensatory of the College*, against such an Inconvenience, had its Name.

Miasm, from *μιαίνω*, *inquino*, to infect, is made Use of to signify such Particles or Atoms as are supposed to arise from distemper'd, putrefying, or poisonous Bodies, and to affect People at a distance.

Microcosm, from *μικρός*, *parvus*, little, and *κόσμος*, *Mundus*, the World: Man is thus call'd, in regard to the Excellency and Symmetry of his Make, bearing as great and remarkable Testimonies of the Wisdom of his Maker, as does the whole visible World, call'd the *Macrocosm*, or greater World.

Micrography, from *μικρός*, *parvus*, little, and *γράφω*, *scribo*, to write; is the Description of the Parts of such very small Objects, as are discernable only with a

Microscope, an optick Instrument, contrived various Ways to give a

large Appearance to the Eye, of many Objects which could not otherwise be seen.

Micrometer, is a Term invented by *Dolæus*, in his *Encyclopædia*, for an universal Spirit in Nature, of which every animal Life had some Participation: but it is now chiefly used to signify an Instrument apply'd to Telescopes. in order the more exactly to take the angular Measure of remote Objects.

Midriff. See *Diaphragm*.

Mistio, or

Mictus, signifies Excretion by Urine, from *mingo*, to make Water.

Milliary Glands. See *Cutis*.

Milk. See *Breasts*.

Minera, is properly a Mine, from whence is dug the Ore of Metals; and from hence, in a figurative Sense,

Minera Morbi, signifies the Seat or Source of any Disease.

Minerals, are hard Bodies dug out of the Earth or Mine, (whence the Name) being, in Part, of a metalline, and, in Part, of a stony Substance; though in a more lax Signification, some include under it, all that is dug out of the Earth.

Minima Naturalia, is, by some, made Use of to express the last possible Divisions of Matter, and out of which all Bodies are compounded: The same as Atoms.

Minorativa, are the lesser or weaker Purges; such as Manna, Lenitive Electuary, and the like.

Miserere mei, this is apply'd to some Cholicks, where the Pains are so exquisite, as to draw Compassion from a By-Stander; the Term importing so much.

Mi-

Misochymicus; thus some were call'd, who profess'd themselves Enemies to the Chymists, and their enthusiastick Conceits.

Misy, is a metallick Recrement, not much unlike the *Chalcitis*.

Miwa, is an ancient Term for the Form of a Medicine, not unlike a thick Syrup, as Marmalade.

Mochlia, *μοχλία*, is used, by the Greek Writers, for the Reduction of dislocated Bones, from the Name of an Instrument much used therein, call'd by the *Latins*, *Veſtis*. Whence also *Hypomochlion*, which see.

Mithridate, is one of the capital Medicines of the Shops, consisting of a great Number of Ingredients, and has its Name from its Inventor, *Mithridates* King of *Pontus*.

Mix'd Body, is used to signify such as are compounded of divers Principles, in Distinction from those, which the Chymists suppose to be Elementary, or consisting of one Principle only, as they take Sulphur, Salt, &c. to be.

Modiolus, is that Part of the Trapan which cuts the Bone circularly, and is distinguish'd into Male and Female, as it hath, or hath not a Point in the Middle, to fix it the better in its Operation. Its Description and Use is given by *Scultetus*, *Arm. Chir.* Part 1. Tab. 2. Fig. 3, 4, 5. and Tab. 27. Fig. 6.

Moisture. See *Water*.

Mola, a Mole, is a formless Concretion of extravasated Blood, which grows into a kind of Flesh, and most commonly happens in the Womb, and is call'd a false Conception.

Molares, Grinders, from *Molaris*, a Grindstone. See *Teeth*.

Moments, in the mathematical Acceptation, are such indeterminate and instable Parts of Quantity, as are supposed to be in a perpetual Flux, *i. e.* continually increasing or decreasing, and they are look'd upon as the generative Principles of Magnitude; and are, in themselves, supposed to have no Magnitude, but to be inceptive only of it. And, because it is the same Thing, if, in the Room of these Moments, the Velocities of their Increases or Decreases are made Use of, or the finite Quantities proportionable to such Velocities; this Method of Proceeding, which considers the Motions, Changings, or Fluxions of Quantities, hath come to be call'd *Fluxions*. Moments also, in a physical Sense, as they are used in reference to the Laws of Motion, signify the Quantities of Motion in any moving Body, and sometimes simply the Motion it self; and they define it to be the *Vis insita*, or Power by which any moving Bodies do continually change their Places: And, in comparing the Motions of Bodies, the *Ratio* of these Moments is always compounded of the Quantity of Matter, and the Celerity of the moving Body: So that the Moment of any such Body may be consider'd as a Rectangle under the Quantity of Matter into the Celerity. And, since it is certain, that all equal Rectangles have their Sides reciprocally proportionable; therefore, if the Moments of any moving Bodies are equal, the Quantity of Matter in one, to that of the other, will be reciprocally

procally, as the Celerity of the latter to the Celerity of the former: And, on the contrary, if the Quantities of Matter are reciprocally proportionable to the Celerities, the Moments or Quantities of Motion in each will be equal. The Moment also of any moving Body may be considered, as the Aggregate or Sum of all the Moments of the Parts of that Body: and, therefore, where the Magnitudes and Number of any Particles are the same, and where they are moved with the same Celerity, there will be the same Moments of the Wholes.

Monopetalous, from *μόν* & *σολος*, *solus*, and *πέταλον*, *Folium*, a Leaf, is used for such Flowers as are form'd out of one Leaf, howsoever they may be seemingly cut into many small ones: and these fall off together. See *Petala*.

Monoculus, from the first Part of the former Derivation, and *Oculus*, an Eye, is used for a Person having but one Eye, and on the same Foundation have we many other compound Terms; as,

Monorchis, a Person who hath but one Testicle, and the like.

Mons, is figuratively apply'd to many Things by physical Writers, and more especially to any prominent fleshy Parts about the Body; whence *Mons Veneris*, the Hill of *Venus*, is that little Turgescency of Flesh and Fat that arises just above the *Vulva* in Women.

Monstrum, is generally apply'd to preternatural Productions amongst Animals, with Instances of which some Writers very much abound; as *Scheucius*, *Parey*, and others.

Morbid, is rather said of an unsound Constitution, or one incli-

nable to Diseases, than of any actually under a Distemper.

Morbilli, the Measles. This is a critical Eruption in a Fever, well known in the common Practice, and bearing this Name, which is a Diminutive of *Morbus*, because it hath been accounted a Species of such malignant or pestilential Fevers, to which comparatively, this is so in a much inferior Degree.

Morbus, Disease; is an unusual Circulation of Blood, or the circular Motion of Blood augmented or diminished, either throughout the whole Body, or in some Part of it.

Morbus comitialis, is the Epilepsy, thus call'd by the *Romans*, because, when in any of their publick Assemblies Persons fell down with this Distemper, they immediately broke up the *Comitia*, which was the common Appellation for such Courts.

Morbus Gallicus, the French Disease. See *Lues*.

Morbus Hispanicus, the Spanish Disease.

Morbus Indicus, the Indian Disease, &c. these are several Names only for the *Lues*, as Interest, Power, or Prejudice, has prevail'd in fixing them.

Morpheus, is that Freckle or Scurf, which breaks out sometimes on the Skin, particularly about the Forehead.

Morselli, and

Morsuli, are ancient Names for those Forms of Medicines which were to be chew'd in the Mouth, as a Lozenge; the Word signifying a little Mouthful.

Mortariolum, signifies a little Mortar, whence some thus call the Socket in which a Tooth grows.

Mor-

Mortiferous, is said of any Thing that forebodes Death, as the *Facies Hippocratica*, or the like.

Mortification, is when in any Part the natural Juices quite lose their proper Motions, so that they fall into a fermentative one, and corrupt and destroy the Texture of the Parts; from *Mors*, Death, and *facio*, to make.

Motion, is a continual and successive Mutation or Change of Place. All Motion may be considered either absolutely, or relatively. Absolute Motion is the Change of Place in any moving Body, and therefore, its Celerity will be measured by the Quantity of the absolute Space which the Moveable hath run through. But, relative Motion is a Mutation of the relative or vulgar Place of the moving Body, and so hath its Celerity accounted or measured by the Quantity of relative Space which the Moveable runs through. All Motion is, of it self rectilinear, or made according to straight Lines, with the same constant uniform Velocity, if no external Cause make any Alteration in its Direction. If a Body moving uniformly, and with the same Degree of Velocity, pass over two Spaces, the Times of the Motions will be as the Spaces. If a Body move thro' two Spaces in equal Times, those Spaces will be to one another as the Velocities of the Motions. If two Bodies move uniformly, but with unequal Velocities, through the same Space, the Times will be as the Velocities. If two Bodies, moving uniformly, go with unequal Velocities, the Spaces, which will be passed over by them in unequal Times, will be to one another in

a *Ratio*, compounded of that of the Velocities and that of the Times. If any Bodies are impell'd upwards by different Forces, they will be rais'd to different Heights; which Heights will be to one another as the Squares of their Velocities; and, if Bodies fall from different Altitudes, the Celerities will be to one another as the Squares of such Altitudes.

No Body, naturally, and of it self, can ever move in a curve Line, because all Motion is originally and naturally in it self rectilinear; and therefore, it is impossible for a Body to move in a Curve, or a Line that is not straight of itself; for then it would continually, and of it self, alter the Direction of its Motion, which is contrary to the Properties of Matter, and Laws of Nature; (both which see.) And further, as all Effects are proportional to their adequate Causes, if any Degree of any Force will produce any Degree of Motion, a double Degree of the same Force will produce a double Degree of Motion, a triple a triple, and so on to any *Ratio* whatsoever: And this Motion must proceed on in the same Direction with that of the moving Force, because it is from that only that the Motion arises; and Bodies once in Motion cannot change their Direction of themselves. And, if any Body be already in Motion, the Motion arising from a Force impressed, if it be in the same Direction of the former Motion, it will increase in Proportion to its Power; but, if it be impressed in a contrary Direction, it destroys the former Motion, either totally, or in Part, that is, equal to the Force of the Impression. And, when it hath

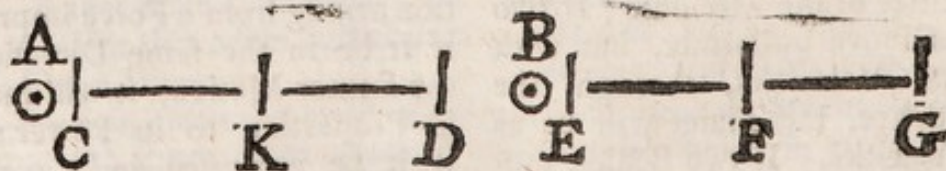
a Direction any Way oblique to that of the former Motion, it is either added to, or subtracted from it, according as a Motion arising from a Composition of these two is determin'd.

The Quantity of any Motion is discoverable by the joint Consideration of the Quantity of Matter in, and the Velocity of, the moving Body; for, the Motion of any Whole is the Sum of the Motion of all its Parts. And consequently, if a Body be twice as great as another, and be mov'd with an equal Degree of Velocity, the Quantity of Motion is double in the former; and if the Velocity be also double, then the Quantity of the Motion will be quadruple of that of the latter.

The Quantity of Motion which is found by taking either the Sum of Motions made the same Way, or the Difference of those which are made contrary Ways, is not at all changed by the Action of Bodies upon one another. For, Action and Re-action are always equal, and therefore, must they needs produce equal Changes in the Motions towards contrary Parts: Wherefore, if the Motions be both according to the same Directions, whatsoever is added to the Body to be mov'd, or which is forced to give Place, is subducted from the

Body which moves, or drives away the other; so that the Sum remains the same as before: But, if the Bodies meet with contrary Directions, there must be an equal Substraction of the Motion of each; and consequently, the Difference of the Motions, made towards the contrary Parts, will remain the same. Suppose a Body *A* to be thrice as big as *B*, and of the like Figure; let *A* have two Degrees of Velocity, and *B* pursue it with ten Degrees of Velocity: Then the Quantity of the Motion of *A* to *B* is as 6 to 10: therefore, the Sum of the Motions of both is 16. Suppose then *B*, overtake *A*, and to give it 3, 4, or 5 Degrees of Velocity; it is plain, it must lose just as much it self: Wherefore, *A* will go on with 9, 10, 11 Parts of Velocity; and *B* will follow after with 7, 6, or 5; so that the Sum will still be 16: and thus will it always be. This may be more distinctly prov'd by these two Theorems.

1. If one Body strike against another, whether at Rest, or moving more slowly, according to the same Direction with the former; then will the Sum of the Motion in both Bodies, towards the same Parts, remain the very same as before such striking one against another.



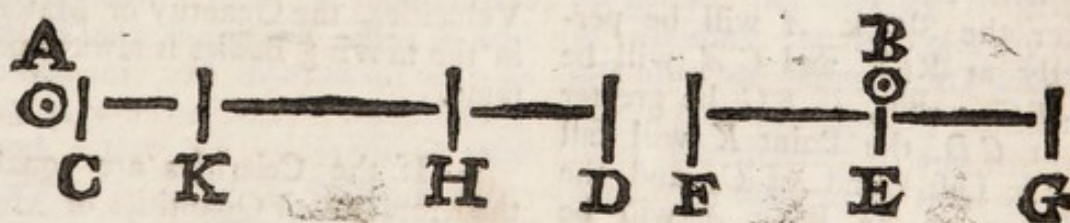
Let the Body *A* move according to the Direction *C D*, and in its Way strike against the Body *B*; which suppose to be either, at Rest, or moving on more slowly than *A*, and according to

the same Direction with it; I say, the Sum of the Motions in both Bodies, towards the same Parts, that is, from *C* to *D*, will be the same as before. Let *C D* express the Motion of *A* from *C* to *D*, and

and if B be in Motion too, let EF express its Motion the same Way; then will the Sum of both Motions be expressed by $CD + EF$. But, because Action and Re-action are equal, and towards contrary Parts, if FG express the Motion impressed on B by the Stroke of A ; DK , equal to it, must express the Motion impressed on A by the Stroke of B , with a contrary Direction from D towards C . Wherefore, since $DK = FG$, CK will express the Motion of the Body A after the Shock, and EG the Motion of B ; and therefore, the Sum of both will be $CK + EG$. But since FG is supposed $= KD$, if CK and EF be added to both, $EG + CK$ must be $= CD + EF$. Wherefore, the Sum of the Motions of both is the same as the first. And, if FG be equal to CD , the Points K and C must be coincident: that is CK will be $= 0$, and consequently, the Body A after the Shock will be quite at Rest. But if FG be greater than CD , the Point K must be

found somewhere beyond, or to the Left Hand of C , and the Motion A will become changed towards the contrary Parts, and the Sum of the Motion towards G will be as $EG - CK$: and because $FG = CK$, add to both $EF - CK$, *i. e.* $EC - CK = EF + DK - CK$, *i. e.* $EF + CD$. From whence it is plain, that the Sum of the Motions towards the same Parts (which in this Case is their Difference towards contrary Parts) continues the same after the Shock as before. And after the same Manner it will appear, that if any Bodies, moving with the same Direction, should strike against one another, the Sum of their Motion afterwards will be the same as before.

2. If two Bodies move towards each other with exactly contrary Directions, the Sum of their Motions towards the same Parts (which is all one as the Difference of them to contrary Parts) will continue the same after the Shock, as before it.



Let the Body A move from C towards D , and let CD express its Line of Motion; and let the Body B be moving at the same Time with a quite contrary Direction from E to F , and let EF express its Motion. Let DH be supposed $= EF$, so shall CH , which is the Difference of their Motion, towards contrary Parts, express the Sum of the Motions

towards G ; then the same CH is the Sum of their Motions towards G , as well after the Shock as before: For, after the Shock, suppose the Motion of B to be changed, and to be now towards G , and let the Line EG represent it; wherefore, the Force impressed upon B after the Shock, and which carries it towards G , will be equal to the Sum of the

Motions of EF and EG , and consequently, be expressed FG : For, in that right Line the Motion EF , towards F is destroy'd, and the new one EG towards G produced. But now, since the impulsive Force of both Bodies acts equally towards contrary Parts, if DK is made $= FG$, this shall represent the Force impressed upon the Body A , and carry it in a contrary Direction to its former Motion; so that if the Line of Motion DK be taken from the Line CD , there will remain CK representing the true Motion of A towards G . But, because $DK = FG$, and $DH = EF$: $DK - DH$, *i. e.* $KH = FG - FE$, *i. e.* EG : And consequently, since $KH = EG$, KH will represent the Motion of the Body B after the Shock, but CK represents the Motion of A after it, wherefore CA is the Sum of the Motion of both Bodies towards G . If FG had been $= CD$, then the Points K and C would be coincident, and the Motion of A will be quite destroy'd, *i. e.* after the Shock A will be perfectly at Rest, and CA will be $= EG$. But, if FG be greater than CD , the Point K will fall to the Left-Hand of C , and the Motion of the Body A will be from C towards K . But, (because $FG = DK$ and $FE = DH$) $KH = EG$: Wherefore, taking CK , from both $CH = EG - CK$ which represents the Sum of the Motions made towards the same Parts, and their Difference towards contrary ones after the Shock; the Sum of the Motions towards the same Parts remains the same after, as before the Shock.

In Motions which are accelerated or retarded, the *Impetus* in each Movement is to be esteemed that which agrees to the Degree of Celerity then acquired. But, when a Motion is made in a Curve, that is to be accounted the Line of Direction of the Motion in each Moment, which is truly the Tangent to the Curve in that Point. And if, when the Motion, being either accelerated or retarded, is made in a Curve Line, as in the Vibration of a Pendulum, the *Impetus* is to be estimated in each Point, according to both the Degree of Acceleration, and the Obliquity of the Tangent there.

With regard to the Quantities of Motion, and the Spaces passed over by moving Bodies, the following Theorems are demonstrated.

1. In comparing the Motions of Bodies, if the Quantity of Matter be the same, the Movements or Quantities of Motion will always be as the Velocities; and *vice versa*, if the Moments are as the Velocities, the Quantity of Matter in the moving Bodies is always the same.

2. If the Celerities are equal, the Moments or Quantities of Motion will be as the Quantities of Matter; or, if the moving Bodies are homogeneous, as their Magnitudes: And, if the Moments are as the Quantities of Matter, the Velocities will be equal.

3. In comparing the Motions of any Bodies, the *Ratio* of the Moments is compounded of the *Ratio's* of the Quantities of Matter, and the Celerities.

4. In

4. In comparing the Motions of any moving Bodies, the *Ratio* of their Celerities is compounded of the *Ratio* of their Moments directly, and of their Quantity of Matter reciprocally.

5. If the Celerities of any moving Bodies are equal, the Spaces passed over will be directly as the Times in which the Motions are made; and consequently, if the Times are as the Spaces, the Celerities must be equal.

6. If the Times are equal, the Spaces passed through will be as the Velocities, and consequently, if the Spaces are as the Velocities, the Times will be equal.

7. The Distances, or Lengths run, are in a *Ratio*, compounded of the *Ratio* of the Times and Celerities; so that the Spaces, or Distances moved through, may be considered as Rectangles, under the Times and the Celerities. Wherefore, if the Spaces, or Distances run, be equal, the Rectangle under the Celerity and Time of one moveable, will be equal to that under the Celerity and Time of the other: And therefore, because equal Rectangles, with unequal Sides, have their Sides reciprocally proportionable, as Celerity is to Celerity, so reciprocally shall Time be to Time; and consequently, when the Spaces are equal, the Times will be reciprocally as their Velocities.

8. The *Ratio* of the Times is always compounded of the *Ratio* of the Spaces passed over direct-

ly, and of the Celerities reciprocally.

These two last Theorems are otherwise thus expressed.

When the Celerity is given, the Space passed through will be as the Time, and the Time being given, the Space as the Celerity; wherefore, if neither be given, the Space will be as the Celerity and Time conjunctly.

When the Celerity is given, the Time is directly as the Space moved through; and the Space being given, the Time is reciprocally as the Celerity: Wherefore, if neither be given, the Time is as the Space directly, and as the Celerity reciprocally.

Hence it is plain, that the Motions of all Bodies are as the Rectangles under the Velocities, and the Quantities of Matter; where the Matter and Celerity of Motion being given, the Moment or Quantity of Motion is given: And, if the Moment and Matter be given, the Celerity is given, by dividing the Moment by the Quantity of Matter. As for Example; let the Quantity of Matter be a , the Celerity c , and the Moment m , then will $ca = m$, and $c = \frac{m}{a}$ and $a = \frac{m}{c}$ Also, since the Space passed over it always proportionable to the Rectangle under the Velocity and the Time; let the Space be $= S$, the Time $= T$, and the Celerity, as before, $= C$. Then will $S = CT$, and $C = \frac{S}{T}$ and $T = \frac{S}{C}$ And, since also $m = ac$, m will be $= \frac{aS}{T}$
U 3 Or,

Or, if T be given $m = a S$. Hence also may it be concluded, that if two Bodies are moved with equal Velocities, the Moments will be as the Quantities of Matter in each; and, *vice versa*, the Quantity of Matter as the Moments; wherefore, if Bodies of equal Bulk are found to have unequal Moments or Quantities of Motion, the Quantities of Matter must be unequal; and consequently, that which hath the least Moment, must have more of Pores or Vacuities interspersed than the other. For Instance: If two Globes, one of Lead, and the other of Cork, having equal Bulks, are moved with equal Swiftnes: since the Quantity of Motion in the former, or its Force to move other Bodies, will be much greater than in the latter; it is plain there must be many more Pores or Vacuities in this, than in that.

Motion Perpetual. This hath exercised the mechanical Wits for many Ages, but is a Contradiction to the Laws of Nature. See *Nature, Laws of.*

Motion Voluntary. See *Muscular Motion.*

Matrix. See *Vis Motrix.*

Motorii; the third Pair of Nerves which pass to the Eye are thus call'd, from their Influence upon its Motions.

Mouth. This is divided, or made up of the Lips, the Gums, the Palate, the *Uvula*, and the surrounding Glands. The Lips are made up of several Muscles: Their Use is to shut the Mouth, and to articulate the Voice. The Gums, see under *Gingivæ*. The Palate, or Root of the Mouth, is cover'd with a pretty thick Membrane, which is continued

to the Tonfils; upon it there are a great Number of little Glands, whose excretory Ducts, piercing it like a Sieve, discharge a Liquor for the moistening and dissolving the Aliments. It is an Error to think the Palate tastes; for, by it, it is impossible to distinguish the most acrid Substances. The *Uvula* is a Re-duplication or Production of the internal Membrane of the Mouth; its Substance is very lax, and it has a Number of such Glands as in the Palate; it is somewhat long, of a Conick Figure; it hangs from the Root of the Mouth, at the Extremity of the Passage which comes from the Nose, above the *Larynx*, between the Tonfils. It is moved by two Pair of Muscles, the *Pterygostaphilinus Externus*, and the *Pterygostaphilinus Internus*; which see under those Names.

The Glands, which are the Sources of the Spittle, that discharges itself into the Mouth, are in great Number; of which the principal are the *Parotides*, one on each Side, situated under the Ear, above the *Masseter* Muscle: They are of the conglomerate Sort, being made up of a great Number of smaller Glands, each of which sends out a small excretory Duct, and they all unite, and form one Channel, called *Ductus Salivalis superior*; which, running over the Cheek, pierces the *Buccinator*, and opens in the Mouth. When the *Masseter* acteth in Mastication, it presseth the *Saliva* into the Mouth. The *Maxillares*, which are situate within the Under-Jaw, one on each Side, are also of a conglomerate Sort; the excretory Pipes of their small Glands unite, and form two Ducts, which

which both together open under the Tip of the Tongue, on the Inside of the *Dentes incisivi*, where they have each a small *Papilla* at their Orifice; when the Muscles of the Tongue or lower Jaw act, they compress these Glands. The Sublinguals are one on each Side of the Tongue; they have, sometimes, two excretory Ducts, as the former, form'd by the Union of that of each small Gland; they run on each Side of the Tongue, near its Tip, where they open into the Mouth, just by the former, with which sometimes they join. Sometimes these are wanting, and then each little Gland has a Duct, which opens under the Tongue: When the *Mylohyoideus* acteth, it compresses them. The *Tonfillæ*, or Almonds, are two round Glands placed on the Sides of the Basis of the Tongue, under the common Membrane of the *Fauces*, with which they are cover'd; each of them hath a large oval *Sinus*, which opens into the *Fauces*, and in it there are a great Number of lesser ones, which discharge themselves thro' the great *Sinus*, of a mucous and slippery Matter, into the *Fauces*, *Larynx*, and *Oesophagus*, for the moistening and lubricating those Parts. When the Muscles of the *Oesophagus* act, they compress the *Tonfillæ*. Besides these, there are a great Number of little Glands spread upon the Cheeks and Lips, call'd *Glandulæ Buccales* and *Labiales*, whose excretory Channels open into the Mouth, and all of them separate a *Saliva* or Spittle, which conduces to the Dissolution of the Aliments. The Tongue is connected in the Mouth to the *Os Hyoides*, and to the *Larynx*, by a membranous Ligament, which

is in the middle of its lower Side. Sometimes this Ligament is continu'd to the Tip of the Tongue, and then it hindereth Children from Sucking; therefore, in such Cases, it should be cut. See *Lingua*.

Mucilaginous Glands. These are very numerous in the Joints, and first taken Notice of to any Purpose by Dr. *Clopton Havers*, in his *Osteology*. He saith, there are two Sorts; some are small, and in a Manner, milliary Glands, being Glandules placed all upon the same Surface of the Membranes which lie over the Articulations. The other Sort are conglomerated, or many Glandules collected and planted one upon another, so as to make a Bulk, and appear conspicuously; and these are considerable Glands. In some of the Joints there are several of them; in others there is a single Gland. For the Structure of these large Glands, they consist of small Vesicles, which are not gathered together into several Lobes, or Bags of Glandules, but are dispos'd upon several Membranes lying over one another, of which Membranes there are several in every one of these Glands, which appear evidently in them who are hydropical. They have their Blood-Vessels as other Glands, but their Veins have a particular Texture in their Course, for retarding the Return of the Blood from the Glands, that the mucilaginous Liquor, which is not separated with the greatest Expedition, may have Time to be separated, as is the Contrivance where-ever a thick Fluid is to be secern'd. (See *Animal Secretion*.) The large mucilaginous Glands are variously situated; some in a

Sinus formed in the Joint ; others stand near, or over-against the Interstice, between the articulated Bones : but, in general, they are so placed, as to be squeezed gently, and lightly pressed in the Inflexion or Extension of the Joint, so as to separate a Quantity of Mucilage proportionate to the Motion of the Part, and the present Occasion, without any Injury. The Design of all those Glands is to separate a mucilaginous Kind of Liquor, that serves principally to lubricate the Joints, to make them slippery. It serves likewise to preserve the Ends of the articulated Bones from Attrition and Heating. But all this it does in Conjunction with the medullary Oil, (which see) with which together is made a Composition admirably well fitted for those Ends ; for, the Mucilage adds to the Lubricity of the Oil, and the Oil preserves the Mucilage from growing too thick and viscous. The Doctor observes the same Glands to lie between the Muscles and Tendons, and supposes that there is the same Mixture of an oily and mucilaginous Substance, the one being that Fat which is found between the Muscles, and is supply'd by the *Glandulæ Adiposæ* ; and the other being separated by the mucilaginous Glandules, of which the common Membrane of the Muscles is every where full. This Mixture in the Interstices of the Muscles lubricates them and their Tendons, and preserves them from shrinking and growing rigid and dry. This Term, *Mucilage*, seems to be made of *Mucus*, Slime, and *ago*, to make ; the Thing express'd thereby being of a slimy Nature.

Moxa, signifies a certain actual Caustic, recommended chiefly in Fits of the Gout ; though *Doleus* would also have it apply'd in the Apoplexy, Epilepsy, *Mania*, and convulsive Asthma. The Thing of itself is no more than a dry, light, downy, vegetable Substance, obtained from a certain Plant, not unlike our common Mugwort, which, being apply'd to the Skin, is there set on Fire, and suffered to act as a Caustic. *Mich. Bern. Valentin* has given the History of *Moxa*, in a Letter to *M. And. Cleier*. 'Tis said to come principally from *China* and *Japan*, and usually sold very dear.

Mucro, signifies strictly the Point of a Spear ; and therefore, figuratively,

Mucro Cordis, is the pointed End of the Heart. And,

Mucronata Cartilago, and

Mucronatum Os, is the same as the *Cartilago Ensiformis*, (which see) because it ends in a Point.

Mucus, is most properly used for that which flows from the papillary Processes through the *Os Cribriforme* into the Nostrils ; but it is also used for any slimy Liquor or Moisture, as that which daubs over, and guards the Bowels and all the chief Passages in the Body : And it is separated by the mucilaginous Glands, which see above.

Mugitus, strictly is the Lowing of Cattle ; but by some physical Authors, and particularly *Bellini*, is used to express that inarticulate Sound of the Voice which Persons utter in Apoplexies, and such like Distempers.

Muliebria, of, or belonging to Women ; is sometimes used to

fig.

signify the Privities, or so much as is call'd *Cunus*.

Mulsum, or *Mulse*, is a Liquor made with Honey and Water, as *Hydromel*.

Multangular, from *multus*, many, and *Angulus*, a Corner; is any Figure or Body, which has many Angles, or pointed Corners.

Mundify, and,

Mundification, from *mundus*, clean, and *facio*, to make; signifies the Cleansing any Body, as from Dross, or Matter of inferior Account to what is to be cleansed.

Muriatick, is whatsoever partakes of the Taste, or Nature of Brine, or any such like Pickles from *Muria*, Brine or Pickle.

Muscle. A Muscle is a Bundle of thin and parallel Plates of fleshy Threads or Fibres, inclosed by one common Membrane. All the Fibres of the same Plate are parallel to one another, and tied together at extremely little Distances by short and transverse Fibres. The fleshy Fibres are composed of other smaller Fibres, inclosed likewise by a common Membrane. Each lesser Fibre consists of very small Vesicles, or Bladders, into which we suppose the Nerves, Veins, and Arteries to open; for every Muscle receives Branches of all those Vessels, which must be distributed to every Fibre. The two Ends of each Muscle, or the Extremities of the Fibres, are, in the Limbs of Animals, fasten'd to two Bones, the one moveable, the other fixed, and therefore, when the Muscles contract, they draw the moveable Bone according to the Direction of their Fibres. When the Muscles contract

in Length, they swell in Thickness, as may be perceived by laying the Hand upon the *Masseter*, a Muscle of the lower Jaw, and pressing the Grinders together: But this Power of contracting or swelling is lost, when either the Artery, or Nerve of the Muscle is cut or tied; and therefore, we conclude, that the Contraction, Swelling, or Motion of the Muscles, is performed by the Blood and animal Spirits distending the Vesicles, or Cavities of the Fibres. This Distension of the Vesicles of the Fibres must be, either by their being filled with a greater Quantity of Blood and animal Spirits, than they were before the Contraction, or the Blood and Spirits mixing must rarefy, and fill up a greater Space.

That the Vesicles of the Fibres are not distended purely by the Quantity of Blood and Spirits, will appear, if we consider, that were the Vesicles distended only by the Quantity of Fluids contained in them, Nature (whose Operations are always the most simple) had only used one Fluid, and not two; for in the Works of Nature we no-where find two necessary Causes where one could have produced the same Effect: Now, how small soever we suppose the Quantity of Fluid brought by the Nerves to the Muscles, that alone might have contracted the Fibres, (if a Quantity only of a Fluid had been requisite) by diminishing the Diameters of the Cavities or Vesicles of the Fibres, as will appear by what follows. And, as it is evident, that the Reason, why the Spirits alone do not distend the Vesicles, is not that there is not a sufficient Quantity

erty for that Purpose; so it will likewise appear, that if there had not been a sufficient Quantity of the nervous Fluid, yet the Quantity of Blood could have given no Assistance in the Distension of the Vesicles: For, if the Vesicles contain a greater Quantity of Blood, when the Muscles contract, than they do, when the Muscles are relaxed, this Augmentation must proceed, either from the Blood's being stopped in the Vein, or it must move suddenly with a greater Velocity through the Artery into the Cavities of the Fibres. If the Blood is stopped in the Vein, it must be by the Contraction of its Coats, or by some external Pressure upon them. If by the Contraction of the Fibres which compose the Coats of the Vein, the same Difficulty remains to be explain'd; for, whatever is the Cause of the Contraction of the Fibres of a Vein, will likewise serve to contract the Fibres of a Muscle. If the Blood is stopped in the Veins, by a Pressure upon their Coats, it must be by the swelling of the Artery or muscular Fibres. If the Artery swells, and presses on the Vein, the Circulation of the Blood must be entirely stopped; for, that Pressure will constantly increase, the Blood being still accumulated in the Artery; and therefore, it will forever hinder all Passage through the Vein. If it be said, that the Blood, moving sometimes with a greater Velocity through the Artery into the Cells or Vesicles of the Fibres, will distend them; this greater Velocity must proceed from the Force of the Heart, from which alone the Blood de-

rives all its Motion. Now, if the Heart acts with a greater Force, it will increase the Velocity of the Blood universally throughout the whole Body, and each Muscle and its Antagonist will be thereby equally contracted, and consequently, neither will contract. And therefore, since both the Blood and Fluid of the Nerves are necessary to the Contraction of the Muscles, and seeing the Contraction is not performed by the Quantity of these Fluids, it remains only, that, by their Mixture, they rarefy, and distend the Vesicles.

Now, for the explaining of this Rarefaction of the Blood and Spirits in the Vesicles of the muscular Fibres, let us suppose a small Globule of Air between the Particles of a Fluid, and, that the Particles have a strong attractive Force, by which they endeavour to come together; they, pressing every Way equally on the Globule of the Air, will hinder it from escaping any Way from between them; but the Force by which they endeavour to come together, being prodigiously greater than the Force of their Gravity, they will, by this Force, produce a very considerable Condensation of the Globule of Air that lies between them: and the Force of Elasticity being proportional always to its Condensation, the Force by which this airy Globule will endeavour to expand itself, will likewise be vastly great; and consequently, if, by any Means, this *Nisus* of the Particles of the Fluid, to come together, should be taken off, the Air between them would expand itself with a very considerable Force. Now, if, upon the mix-

mixing of another Fluid, the Particles of the first Fluid should be more strongly attracted to the Particles of this other Fluid, than they were before to one another, then would their *Nisus* to one another cease, and they would give the Globule of Air that is between them Liberty immediately to expand itself, and the whole Fluid would take up a greater Space than it did before. But, when the Particles of the two Fluids come to be united together, they will again inclose the Globule of Air that lies between them, and, by their mutual Attraction, soon bring it to its former State of Condensation.

Now, that the Blood contains a great Number of Globules of Air, is evident from the Quantity it yields in the Air-Pump; and, that the Particles of the Blood have a strong attractive Force, is likewise plain, from what has been said in several Places. By this Attraction of the Particles, the Globules of the Blood are formed; and, in viewing the Circulation of the Blood with a Microscope, it may be observed, that where the Diameter of the Canal has been less than the Diameter of a Globule of Blood, the Globule would be press'd into a spheroidical Form; but, when it came into a wider Part of the Canal again, it would immediately re-assume its former Figure: which is probably owing to a smaller Globule of Air inclosed within, and expanding itself equally every Way, when the Sides of its circumambient Shell of Blood are not longer pressed by the Sides of the Canal.

These Globules of Blood continually circulating through the Vesicles of the Fibres, (which are probably capable of containing only one Globule at a Time) meet with the animal Spirits, which drop from the Nerves. Now, the Minuteness of the Glands of the Brain, and the Smallness of the Fibres of the Nerves, plainly shew, that the animal Spirits are a Fluid, consisting of the smallest Particles of any in the Body; and therefore their attractive Force must be the greatest of all the Particles in the Blood, as is evident from what Sir *Isaac Newton* has calculated about the Rays of Light: And consequently, the animal Spirits meeting with the Globules of the Blood in the Vesicles of the Fibres, and surrounding them, must attract the Particles of which they are composed, more strongly than they do another; and consequently, therefore, their *Nisus* to one another ceasing, the condensed Globule of Air will expand itself with a very considerable Force, whereby each Vesicle of the Fibre will be distended, and consequently, the Fibre shortened, *i. e.* the whole Muscle will be contracted. But, when the Particles of the Globule of Blood are mixed with the nervous Fluid, they will both together inclose the Globule of Air again, and compress it into as small a Space as it was before; and thus the Contraction of the Muscle must immediately cease, unless fresh Blood and Spirits, still succeeding one another, continue the Inflation of the Vesicles. But when a Muscle has been strongly contracted for some Time, the

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Quantity of Spirits spent being more than can be secerned in the same Space of Time by the Glands which supply its Nerves, the Inflation of the Vesicles must fall, and the Muscle grow feeble and weak; whereas the Tonick Motion of the Muscles, being performed by the Spirits protruded only by the Quantity last secerned in the Glands, will constantly continue without any Weariness.

After this Manner the Vesicles may be conceived to be distended without any Ebullition or Effervescence, and their Distension to cease, without any Precipitation, or flying off of the aerial Globules through the Pores of the Muscles.

But, let us come next to shew the Mechanism of the Fibres, or how excellently and wisely they are contrived for Contraction. It is a known Experiment, that a Bladder, when it is blown up, and distended, as to its Capacity, but contracted as to its Length, will by the Force of Contraction, raise a Weight to some determined Height. And if two Bladders joined together, and communicating with one another, were blown up, the Weight would be raised by Inflation twice the Space that one alone would do it; because, I suppose, that both Bladders contract equally, and consequently, the Contraction of both together will be double the Contraction of either. Three Bladders thus join'd and distended, will raise the Weight to triple the Height, and four to quadruple; so that if there were a String of Bladders join'd together, of equal Bulk and like Figures, the Space

through which the Weight would rise, would be proportional to the Number of Bladders, or, which is the same thing, to the Length of the String.

Each Fibre of a Muscle consisting of a Multitude of small Vesicles, resembles a String of Bladders; and therefore the Contraction of the Muscle is always proportional to the Length of its Fibres. And seeing the greatest Contraction of the Fibres is always less than $\frac{1}{2}$ of their Length, (as shall hereafter be demonstrated) there was a Necessity that the Insertions of the Muscles should be near to the Joints, not only to increase the Velocity of the Parts moved, but likewise, that might describe the greater Arches round the Centres of their Motion. And hence it is, that those Parts which describe the greatest Arches, are moved by the longest Muscle: as the Hand round the Elbow, which is bent by the *Biceps* arising from the *Scapula*; and the Foot round the Knee, which is bent by the Muscles, whose Originations are as far distant as the *Ischium*. If these Joints had been moved by short Muscles, inserted at each End into the Extremities of the articulated Bones, the Arm and Leg had moved but a little Way, and the Arches, the Hand and Foot had described about these Joints, had been to the Arches they describe now, as the Length of the short Muscles had been to the Length of the Muscles they have now. On the contrary, where the Joints have but a small Motion, there the Muscles are short. Thus we find, that the Fingers are pulled Side-ways by the *Interossei*; The Thigh is drawn out.

outwards, and obliquely, by the *Quadragemini* and *Obturatores*; which are all short Muscles; and most of the Muscles of the *Vertebrae* run between one *Vertebra* and the next. From hence it is evident, that the Originations and Insertions of the Muscles are every where the best that could be contrived.

The Vesicles, of which the Fibres consist, are extremely small: For, though one large Bladder may raise a Weight as high as several small ones; yet, the Quantity of Elastick Fluid used in the Inflation, together with the Swelling of the large Bladder, will be much greater, than when a Weight is raised by a String of small ones. For, suppose two Bladders of similar Figures, but the Diameter of the one triple to the Diameter of the other, then will the one require twenty seven Times the Quantity of Elastick Fluid to expand it that the other does, and it will swell to twenty seven Times the Space; and yet three of the lesser Bladders join'd together, will raise the Weight to the same Height that the bigger one does, but with nine Times less Expence of Elastick Fluid, and they will take up but one ninth Part of the Space. By diminishing, therefore, the Bigness of the Vesicles, and increasing their Number, the Force required to distend the Vesicles, and the Distention itself, may be diminished in any given Proportion, and come at last to be insensible. Suppose a Bladder of a determined Bigness can raise a Weight a Foot, an hundred Bladders, whose Diameters are each $\frac{1}{10}$ Part of the former, being blown up, will raise

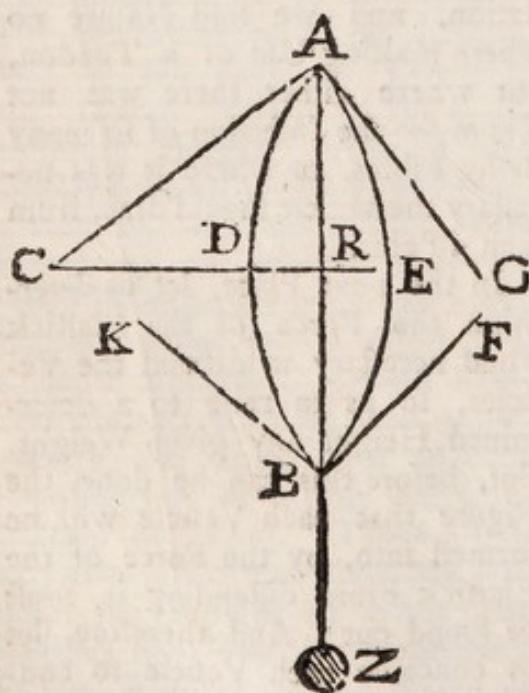
the Weight to the same Height; but the Force of Inflation, and the Swelling of all put together, will be ten thousand Times less than in the large one.

If a Weight of a determined Bigness can be raised to a certain Height by one Bladder, or one String of Bladders, to which the Weight is tied, twice that Weight may be raised by two such Bladders, or Strings of Bladders, and triple that Weight by three such Strings: and consequently, the Weight a Muscle can raise will be always as the Number of its Fibres, that is, as its Thickness, supposing the Distention of the Vesicles equal. And the absolute Strength of one Muscle is, to the absolute Strength of another, as their Bulks.

It is to be observed, that in determining both the Contraction, and Strength of a Muscle, no Regard is to be had to the Tendons, because in them we observe no Inflation, and we find Nature nowhere making Use of a Tendon, but where either there was not Room for the Insertion of so many fleshy Fibres, or where it was necessary the Muscle should draw from such a Point.

In the next Place, let us determine the Force of the Elastick Fluid necessary to distend the Vesicles, so as to raise to a determined Height any given Weight. But, before this can be done, the Figure that each Vesicle will be formed into, by the Force of the Elastick Fluid distending it, must be found out: And therefore, let us conceive each Vesicle to consist of an infinite Number of Threads, whose Ends are fastened by transverse Ligaments; and from

from hence it follows, that if a distended Vesicle were cut with a Plane through its Axis, the Curve of the Section will be the same with that of a Thread, whose two Ends are fastened; and the whole press'd by an Elastick Fluid. And because Elastick Fluids endeavour to expand themselves every Way, and all Fluids press perpendicularly upon each Obstacle, it is evident, that the Thread must be every where equally and perpendicularly pressed; and therefore, its Flection, or Curvature, must be every where equal and similar, and consequently, the Thread must be form'd into a circular Arch. Hence it follows, that the whole Secretion of the Vesicle consists of two equal and similar Arches, whose common Subtense is the Axis of the Vesicle. Suppose now AEB and ADB to be the two circular Arches, C the Centre of the Arch



AEB , AG and BF Tangents in the Points A and B , Z the Resist-

ance to be raised; the Angle CAG or CAE is equal to a right Angle = to $CAR + ACR$, and therefore, the Angle $ACR = GAR$, or $EAR = EBR = DBR$; and therefore, the Arch EA or EB , is the Measure of the Angle EAR or EBR , and the Space through which the Resistance Z is raised equal to the Difference between the Arch AEB and its Chord ARB , or equal to twice the Difference of the Arch AE and its Sine AR ; which having the Arch AE , or the Angle EAR given in Degrees and Minutes, may be easily calculated. But, to do this, the Length of the Radius AC must be determined in such Parts, whereof 100000 make up the Arch AE , which is done thus: The Degrees of a circular Arch, whose Length is equal to the Radius of the Circle, is $57^{\circ} 295$; and therefore, the Degrees in the Arch AE is to $57^{\circ} 295$, the Length of the Radius expressed in Degrees, as 100000, the Parts of which the Arch AE consists, to the Radius expressed in the same Parts, which will therefore be given. And again, as the Tabular Radius is to the Tabular Sine of the Arch AE ; so is the Radius AC (already found) to the Sine AR , which will likewise be found. This being subtracted from AE , and the Remainder doubled, is the Elevation of the Weight Z .

Thus, for Instance, suppose the Arch AE , or the Angle EBR , to be 30 Minutes, say as 30^1 , or half a Degree, that is, $\frac{1}{10}$, is to $57^{\circ} 295$, so is 100000, the Length of the Arch AE , to the Length of the Radius AC , which will be found to be 11459000. And again, as 100000 is to 872, the Sine

Sine of 30° , so is 11459000 to AR , which is, therefore, 99906; which, subtracted from AE , and the Remainder doubled, gives 186, the Sublevation of the Weight Z , in such Parts whereof AE is 100000.

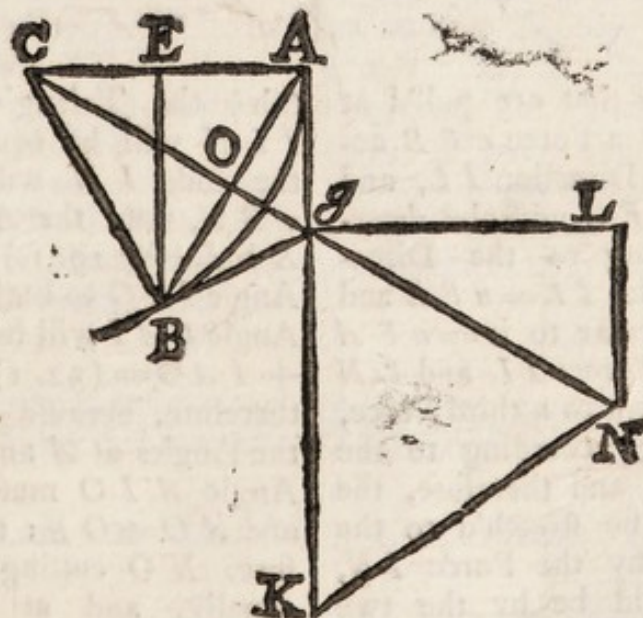
The Tension of the Fibre, or Force wherewith it is stretch'd by the Resistance Z , may be thus determin'd: The Tension of the Fibre, or the Force sustaining the Weight in the Point B , is the same as if the Weight Z were suspended by two Threads touching the Arches in the Point B ; and, in that Case, the Tension of the Thread BF is to the Weight Z as the Sine of the Angle $FB R$, or $EB R$, is to the Sine of the Angle $FB H$, or $EB D$, and consequently, the Tension, or Firmness of the Thread will be

$$Z \times \text{Sine } EBR$$

$$\frac{\text{Sine } EBD}{\text{Sine } EBR}$$

Now, call the absolute Force of Expansion that the elastick Fluid must have, to raise a given Weight to a determin'd Height, n ; the Pressure on any Part of the Thread will be as the Force of Expansion of the Fluid, and the Portion conjunctly: For, if the Portions of the Thread be taken equal, the Pressures on them will be as the Force of Expansion, or the Elasticity. And, if the Force of Expansion be the same, the Pressure is as the Portions on which it presses; and therefore, universally it is as the Force of Expansion and the Portion jointly, or as the Product of the two.

Let AB represent the circular Thread, Bb an indefinite small Portion of the same, and the Pressure on Bb will be $n \times Bb$, which suppose equal to BH : The Pressure BH can be resolv'd into two Forces, one whereof is as

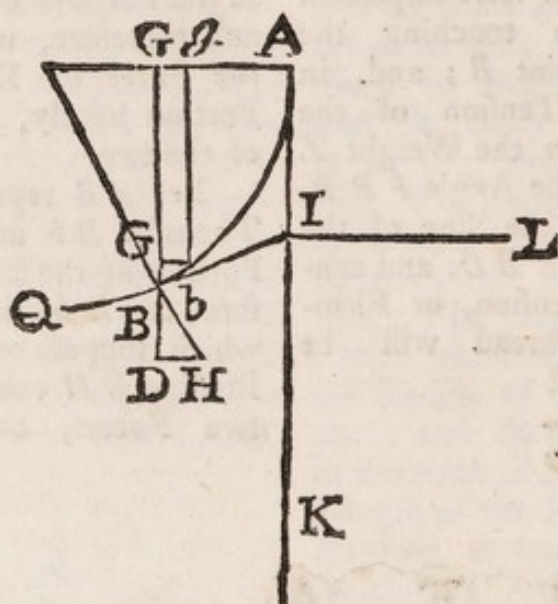


DH acting horizontally, or according to the Direction DH ; and the other as BD acting vertical-

ly, or, according to the vertical Direction BD ; and, because of the equi-angular Triangles GBb and

and BDH . $BG : DH :: Bb : BH :: Bb : n \times Bb (:: 1 : n) :: GB : DB$; therefore $DH = n BG$, and $BD = n Gb$; and therefore, the Sum of all the horizontal Forces will be equal to n multiply'd by all the BG 's, that is, n multiply'd by $BF = n \times BF$, and the Sum of all the vertical Forces is equal to n multiply'd by all the GB 's, that is, $= n AF$. Now, it is plain, that the Ten-

sion of the Fibre, in the Points *A* and *B*, is the same with the Tension of two Threads, Tangents in the Points *A* and *B* (where they are supposed to be fasten'd) that are drawn at their Point of Concourse *I*, by all the horizontal Forces, according to the Direction *IL*, and by all the vertical Forces, according to the Direction *IK*; and therefore, to determine the Tension of the Fibre, the Tension



of the Threads that are pull'd at the Point *I* by a Force $n F B$ according to the Direction *IL*, and by a Force $n F A$ must be determined according to the Direction *IK*. Take $IL = n F B$ and LN perpendicular to it $= n F A$ and the two Forces *IL* and *LN* will be equivalent to a third Force, as *IN*, acting according to the Direction *IN*; and therefore, the Threads will be stretch'd to the same Degree by the Force *IN*, that they would be by the two Forces *IL* and *LN*: and because $IL (n B F) : LN (n F A) :: BF : FA$, and the Angles at *L* and *F* equal (by the 6th of the

6th) the Triangles $BF A$ and $IL N$ will be equi-angular, and the Side IN will be equal to $n BA$, and the Angle $FAB = LNI$ (by 29. 1.) AIO ; add the Angle IAO to both, and the right Angle FAI will be equal to $AIO + IAO = (32. 1.) AOC$. And therefore, because $AI = IB$, and the Angles at A and B equal, the Angle AIO must be $= BIO$, and $AO = OB$; the Line, therefore, NO cutting the Line AB equally, and at right Angles, must pass through the Centre. Through N draw NK parallel to BI , meeting with AI produced in the Point K , then the Forces

by

by which the Threads are stretch'd will be as IK , and NK , the Angle $KIN = AIO = FAB = BIO = INK$. The Triangle, therefore, KIN is an Iſosceles Triangle, and equi-angular to the Triangular ABC , and $AB : AC :: NI : IK :: n AB : n AC$; and therefore, IK , or KN will be equal to $n \times AC$, that is, the Forces, by which the Threads are stretch'd, will be equal to the Radius of the Circle multiply'd by n .

Hence the Tension of the Fibre in the Points A and B , and so in all other of its Parts, is the same, and equal to the absolute Force of Elasticity multiply'd into the Radius of the Circle: but, the Tension of the Fibre was found before to be $Z \times \text{Sine } EBR$

$$\text{Sine } EBD, \text{ there-}$$

$$\text{fore, if we call the Radius } r,$$

$$Z \times \text{Sine } EBR$$

$$n r = \frac{\text{Sine } EBD}{Z \times \text{Sine } EBR} \text{ and } n =$$

$$\text{and } n = \frac{\text{Sine } EBD}{r \times \text{Sine } EBR} \text{ and } r \times$$

$\text{Sine } EBD$ will have the same Proportion to the $\text{Sine } EBR$ as Z to N . Hence it is plain, that no finite Force of Elasticity can ex-

tend the Fibre $AEBD$ to a compleat Circle; for, in that Case, the Sine of the Angle EBD being nothing, $r \times \text{Sine } EBD$ is nothing, and therefore, Z will be to n as nothing to something, or as a Finite to an Infinite.

The greatest Contraction of the Fibre, that can be, must always be less than 72728 of such Parts whereof the Arch AE is 100000; for, if the Threads were extended into compleat Circles, the Contraction would be only $\frac{72728}{100000}$ of AE , which it can never arrive to; therefore, the Contraction must be always less than $\frac{1}{2}$ of the Length of the Fibre. It is also plain, that when the Angle EBR is small, the Force of Elasticity bears but a small Proportion to the Resistance: For Example, when the Angle EBR is but $30'$ the Radius, or r multiplied into the Sine of the Angle EBD the Sine of one Degree, is to the Sine of the Angle EBR the Sine of $30'$ as Z to N , that is, $r \times 1745 : 872 :: Z : n$, that is, $Z : n :: 11459000 \times 1745 : 872 :: 19995955000 : 872 :: 22931141 : 1$, and consequently, a small Degree of Elasticity will produce a prodigious Energy in the Muscles.

A TABLE of the MUSCLES, from Dr. Keil.

Frontales,

They pull the Skin of the Fore-head upwards.

Occipitales,

They pull the Skin of the Hindhead upwards.

Attollens } Auricularum.
Deprimens }
Internus Malleoli,

It distends the Tympanum.

X

Ex

Externus Malleoli,
Obliquus Malleoli,
Musculus Stapedis,
Corrugator Supercilii,
Lectus Palpebræ Superioris,
Orbicularis Palpebrarum,

Attollens
Deprimens } *Oculorum.*
Abductor
Adductor
Obliquus Major,

Obliquus Minor,

Attollens
Dilatans } *Nares.*
Deprimens

Incisivus,
Triangularis,
Caninus,
Elevator Labii Inferioris, }
Quadratus,
Zygomaticus,

Orbicularis,
Buccinator,

Temporalis, }
Masseter, }
Pterigoidæus Internus,
Pterigoidæus Externus,
Quadratus,

Digastricus,
Peristaphilinus Internus,
Peristaphilinus Externus,
Styloglossus,
Genioglossus,
Ceratoglossus,
Geniohyoidæus,

Sternohyoidæus,

Mylohyoidæus,
Coracohyoidæus,
Stylohyoidæus,

Stylopharingæus,

It relaxes the *Tympanum.*

It moves the Stirrup.

It lifts up the upper Eye-lid.

It shuts both Eye-lids.

It pulls the Eye forwards, and obliquely downwards.

It pulls the Eye forwards, and obliquely downwards.

It pulls the upper Lip upwards.

It pulleth it downwards.

They pull the lower Lip upwards.

It pulleth it downwards.

It draws both Lips obliquely to either side.

It draws both Lips together.

It thrusts the Meat between our Teeth.

They pull the Jaw upwards.

It draws the Jaw to either Side.

It draws the Jaw forwards.

It pulleth the Jaw and the Cheeks downwards.

It pulleth the Jaw downwards.

It pulls the *Uvula* forwards.

It pulls the *Uvula* backwards.

It draws the Tongue upwards.

It pulls it out of the Mouth.

It pulls it into the Mouth.

It pulls the *Os Hyoides* and the Tongue upwards and forwards.

It pulleth the *Os Hyoides* downwards.

It pulls it obliquely upwards.

It pulls it obliquely downwards.

It pulls it to either Side, and somewhat upwards.

It pulleth up and dilateth the *Pharynx.*

Oesophagus,
Sternothyroidæus,
Hyothyroidæus,
Cricothyroidæus,
Cricoarytænoidæus Posticus.
Cricoarytænoidæus Lateralis.
Thyroarytænoidæus,
Arytænoidæus,
Splenius, }
Complexus, }
Rectus Major, }
Rectus Minor, }
Obliquus Inferior, }
Obliquus Superior, }
Mastoidæus, }
Rectus Internus Major, }
Rectus Internus Minor, }
Rectus Lateralis,
Intercostales Interni & Externi,
Subclavius,
Serratus Anticus Major,
Serratus Posticus Superior,
Triangularis,
Serratus Posticus Inferior, }
Sacrolumbaris, }

Diaphragma,

Obliquus Externus, }
Obliquus Internus, }
Transversalis, }
Rectus, }
Pyramidalis, }

Longissimus Dorfi,
Transversalis Dorfi,

Interspinalis,

Quadratus Lumborum,

Longus, }
Scalenus, }

Psoas Parvus,

Cremaster,

It straitens the *Pharynx*.
 It pulls the *Thyroides* downwards.
 It pulls the *Thyroides* upwards.

It dilates the *Glottis*.
 It contracts the *Glottis*.

They move the head backwards.

They nod the Head backwards.

They perform the Semi-circular Motion of the Head.

They nod the Head forwards.

It nods the Head to one side.

They pull the Ribs upwards in Inspiration.

They make the Motion of the Ribs downwards in Expiration the swifter.

Its Use is both in Inspiration and Expiration.

They compress all the parts contained in the lower Belly, assist the Motion of the Ribs downwards in Expiration, and help to bend the *Vertebræ* of the Loins forwards.

It keeps the Body erect.

It moves the Body obliquely backwards.

It draws the acute Processes nearer one another.

It draws the *Vertebræ* of the Loins to one Side.

They bend the *Vertebræ* of the Neck.

It helps to bend the *Vertebræ* of the Loins.

It draws up the Testicles in the Act of Generation.

Erectores Penis.
Transversalis Penis.
Acceleratores Urinæ.
Erectores Clitoridis.
Sphincter Vesicæ,

Levatores Ani,
Sphincter Ani,
Serratus Anticus Minor,

Trapezius,

Rhomboides,
Levator Scapulæ,
Deltoides,
Supra Spinatus,
Coracobrachialis,
Teres Major,
Latissimus Dorsi,
Pectoralis,
Infra Spinatus,
Transversalis,
Subscapularis.
Biceps,
Brachæus Internus,
Longus,
Brevis,
Brachæus Externus,
Anconæus,
Rotundus,
Quadratus,

Longus,
Brevis,

Cubitæus Internus,
Radixæus Internus,
Cubitæus Externus,
Radixæus Externus,
Palmaris,

Palmaris Brevis,

Sublimis,
Profundus,
Extensor Digitorum Communis.
Lumbricales,

It contracts the Neck of the Bladder, that the Urine may not run continually.

They draw up the *Anus*.

It shuts the *Anus*.

It draws the Shoulder-blade forwards.

It moves it upwards, backwards, and downwards.

It pulls it backwards.

It pulls it upwards.

They lift the Arm upwards.

They pull the Arm downwards.

It moves the Arm forwards.

They draw the Arm backwards.

They bend the Fore-Arm.

They extend the Fore-Arm.

They perform the Motion of *Pro-nation*, or they turn the Palm of the Hand downwards.

They perform the Motion of *Supi-nation*, or they turn the Palm of the Hand upwards.

They bend the Wrist.

They extend the Wrist.

It helps the Hand to grasp any Thing closely.

It makes the Palm of the Hand concave.

They bend the Fingers.

They assist in bending the first Joint of the Fingers.

Inter-

Interossei Interni,

Interossei Externi,

Flexor Pollicis Longus.

Flexor Pollicis Brevis.

Extensor Primi,

———*Secundi,*

———*Tertii Internodii Pollicis.*

Tenar,

Antitenar,

Abductor Indicis.

Extensor Indicis.

Hypotenar,

Extensor Auricularis.

Psoas

Iliacus,

Pectinæus,

Glutæus Major,

Glutæus Medius,

Glutæus Minor,

Triceps,

Pyriformis,

Gemini,

Quadratus,

Obturator Internus,

Obturator Externus,

Seminervosus,

Semimembranosus,

Biceps,

Gracilis,

Rectus,

Vastus Externus,

Vastus Internus,

Crureus,

Sartorius,

Poplitæus,

Membranosus,

Tibialis Anticus,

Peronæus Anticus

Gastrocnemii,

Solæus,

Plantaris,

They draw the Fingers to the Thumb.

They draw the Fingers from the Thumb.

It draws the Thumb from the Fingers.

It draws the Thumb to the Fingers.

It draws the little Finger from the rest.

They bend the Thigh.

They extend the Thigh.

It pulls the Thigh inwards.

They move the Thigh outwards.

They help to move the Thigh obliquely, and circularly.

They bend the Leg.

They extend the Leg.

It makes the Legs cross one another.

It turns the Leg somewhat inwards.

It turns it a little outwards.

They bend the Foot.

They extend the Foot.

Tibialis Posticus,
Peronæus Posticus,
Profundus,
Sublimis,
Lumbricalis,
Longus,
Brevis,
Flexor Pollicis.
Extensor Pollicis.
Tenar,

Antitenar,
Flexor Pollicis Longus,
Brevis.
Abductor Minimi Digiti.
Interossæi Interni,
Interossæi Externi,
Transversalis,

It moveth the Foot inwards.
 It moveth the Foot outwards.

They bend the four lesser Toes.

They extend the four lesser Toes.

It draws the great Toe from the rest.

It draws it to the rest.

They draw the Toes to the great Toe.

They draw them from the great Toe.

It brings all the Toes close to one another.

In all 446 single M U S C L E S in the B O D Y.

Musick: Its Effects upon human Bodies, is to be understood by those only who are apprised of the Structure of an animal Fibre, (which see under *Fibre*.) For, according to that Contexture, it is very plain, that the least Stroke imaginable upon it, must move its component *Machinulae* in all their Parts; every Wave, therefore, or Undulation of the Air, which is made by a musical Instrument, gives the Fibres of the whole Body, more or less, according to their Degrees of Tension, correspondent Concussions, whereby all the *Machinulae* are successively moved, from one to another, throughout the whole Thread: and consequently, the Spirits are not only raised, or made finer, but the other animal Fluids are also more briskly agitated, and their preternatural Cohesions and Viscidities destroy'd. And this Advantage has Musick above any

other Exercise, that those Concussions, made upon the Fibres thereby, are short, quick, and easy; whereupon the nervous Fluid is not only more briskly agitated, but also the natural Contextures of all the animal Threads are better preserved, by their being never overstrained hereby, as they frequently are by other Exercises: And, upon this View, the extraordinary Effects of Musick, upon many Distempers, ceases to be a Wonder; and it is rather to be admired, that it is not much more brought into Use. See *Poison*.

Myloglossum, from *μύλον*, *Mola*, or *Dentes molares*, the Grinders, and *γλῶσσα*, *Lingua*, the Tongue: A Pair of Muscles is thus called, because they arise about the Backside of the grinding Teeth, and are inserted into the Ligament of the Tongue; they help to pull it upwards. See *Tongue*.

Mylohyoidæus. See *Tongue*.

Myo-

Myologia, from *μῦς*, *Musculus*, a Muscle, and *λέγω*, *dico*, to tell; is a description of the Muscles.

Myopia, and

Myopiafis, and

Myops, from *μῦς*, *Mus*, a Mouse, and *ὤψ*, *Oculus*, an Eye, Mouse-ey'd, or Pur-blind, is when the Eye is so convex, that the Rays unite, before they come to the *Retina*; which makes the Eye also look small, whence the Name.

Myotomia, from *μῦς*, *Musculus*, a Muscle, and *τέμνω*, *feco*, to cut; is a Dissection of the Muscles.

Myrrhe, a Gum of admirable medicinal Vertues, and particularly in all Cases of Corruption or Mortification; whence it is of great Use in the Art of Embalming. It flows, or is said to flow from a particular Tree in *Arabia*. There are various Kinds of it,

one being so fat and unctuous, that it cannot be reduced to Powder, before it is well dry'd on the Fire. The Antients greatly perplexed themselves to find out a thorough Solvent for this Gum; but all to no Purpose. Our present happy Chemistry affords us more Ways than one to effect it perfectly, and that to very great Advantage. We can now expeditiously make Tinctures, &c. thereof; without being any ways beholden to the tedious Method of *Helmont*, and convert it into any Form we please, so as to render it soluble in the Stomach, and miscible with the Juices of the Body: A valuable Secret, of which Antiquity was not Master.

Myrtiformes Glandulæ, from *Myrta*, Myrtle, and *Forma*, Shape; are already described. See *Generation Parts of, proper to Women*.



N.

N^o. In Prescription is often used to signify the Number of Things, as *Caryophyllorum* N^o vi. is six Cloves.

Nævi, signifies those Marks that are made upon the *Fætus*, by the Imagination of the Mother, in longing for any Thing.

Nails: They seem to be of the same Nature as the Hoofs of other Animals, which are nothing else but a Number of small Husks, which answer to so many *Papillæ* of the Skin. From whence may be concluded, that the Nails are nothing but the Covers or Sheaths

of the *Papillæ Pyramidales* of the Skin on the Extremities of the Fingers and Toes, which dry, harden, and lie upon one another. Their Use is to defend the Ends of the Fingers in handling any hard, and rugged Bodies.

Narcoticks: Under this Term is included all that Part of the *Materia Medica*, which any way produces Sleep, whether called by this Name, or *Hypnoticks*, or *Opiates*. But, although many of this Tribe stand, with some Authors, in the Rank of Poisons, yet we shall not here enter into

the Controversies, whether such things can be medicinal, or, whether a Medicine can poison; because it is certain, there is Truth on both sides the Debate. These are Instruments, whose Agency lie very remote from the reach of our Senses, as wonderful Effects are often produced almost from unheeded Causes.

To understand the Manner of Operation of these medicinal Simples, and to help us to ascertain their Uses in many Cases, we should be before-hand rightly apprised of their Natures, and Ways of Acting. And, in order hereunto, it is necessary, besides some other *Præcognita*, to define distinctly what Sleep is, or rather, (to avoid Confusion and Dispute about Words) what Difference there is between an animal Body when asleep, and when awake.

First then, there is no one but knows, that in Sleep there is a Cessation from Action. When waking, we walk, dispute, move this, or that Limb, &c. but in natural and undisturbed Rest, there is nothing of all these: That is, whereas, being awake, we do perform several Motions, by the voluntary Contractions of our Muscles; when asleep, those Muscles only are contracted, whose Action is, in a Manner, involuntary, or to which the Mind has so constantly determined the Spirits, that it does it by a Habit, without the Intervention of the reasoning Faculty: Such are those of the Heart and Breast. So that there is, at this Time, a Kind of Relaxation, or Looseness of the moving Fibres of the several Members; or, at least, such a quiet Position and State of

them, by which all the Antagonist-Muscles are in an *Æquilibrium* and Equality of Action, not overpowering one another. For this, indeed, seems to be one great Design of Sleep, to recover to the Parts, over-stretched by Labour, their former Force: And, therefore, we do naturally, when composing ourselves to Rest, put our Body into that Posture, which does most favour the particularly weary'd Limbs, and conduce to this End.

In the next Place, it is very plain, that there is, in Sleep, not only a Rest, and a Suspension from acting most of our bodily Organs, but even of our thinking Faculty too: That is, a ceasing from such Thoughts, as, when waking, we are exercised about, which we do reflect upon, and will, to employ our Mind with. For, though Dreams are Thoughts, yet they are imperfect, and incoherent ones, and are, indeed, either so faint and languid Representations, as to be consistent with our Sleep, as some may be; or else, if they be strong and lively, they are, as every one knows, the Interruption and Disturbance of it. From hence it will follow, that the Motion of the arterial Fluid must be, *cæteris paribus*, more sedate, even, and regular, in the Time of Sleeping, than Waking. For, besides the various Alterations, which, in the latter State, this receives from the several Passions of the Mind, the very Contractions of the Muscles themselves, in Exercises of the Body, do differently forward its Course; whereas, in Sleep, the Force of the Heart and pectoral Muscles, being more constant and uniform, gives it a more calm, and

and equally continued Impulse. Hence also, it will come to pass, that the Influx of the Liquor of the Nerves into the Organs of the Body, as also its Reflux towards the Brain, is, in Sleep, either none, or very inconsiderable: That is, that this Fluid has, at this Time, but little or no Motion. For 'tis muscular Action and Sensation, that require it to be thus determined, this Way, or that, which are now hardly any. And yet, by the Arrival of Blood at the Brain, this Juice will still be separated there, fit to be deprived into its Canals or Tubes. So that by this Means, there will be a Kind of Accumulation, or laying up in store, of Spirits, for the Offices and Requirements of Waking.

Thus we may, in short, look upon the Time of Watching, as the Time of wearing out, or the Destruction of the animal Fabrick; and the Time of Sleep, as that in which it is repaired and recruited; not only upon Account of what we have just mentioned concerning the nervous Liquor, but also, with respect to all other Parts, as well fluid as solid. For, Action does necessarily, by Degrees, impair the Springs and Organs; and in Motion, something is continually abraded, and struck off from the detraçtile Fibres, which cannot otherwise be restored, than by their being at Rest from Tension. Besides, that such a regular and steady Course of the Blood, as has been observed to be in Sleep, is, by far, more fit and proper for Nutrition, or an Apposition of Parts to the Vessels, which an uneven Hurry of it is more apt to tear off and wash away

The Case being thus, it is very plain, that whatsoever can induce such a Disposition on the Fluids, and muscular Parts of the Body, as this we have described, will cause Sleepiness. And, in like Manner, when any Thing interposes and hinders this Composedness and Tranquillity, the removing the Impediment will be the cause of Sleep; inasmuch as this is only reducing the Animal OEconomy to its right State, in which, by natural Order, there must be a Succession of Sleeping and Waking. Thus it appears, how necessarily continued Exercises cause Sleep, since these do exhaust the Juice of the Nerves; that is, both lessen its Influx into the Organs of Motion, and incline the Mind not to determine it any longer that Way, upon the Account of the Pain and Uneasiness, with which too violent a Tension of the Parts is always attended; which, therefore, we must desire to relax, or lay to Rest.

That Sleepiness which follows, upon a Fulness of the Stomach, after Eating or Drinking, is owing to a different Cause; and does, indeed, so nearly fall in with the Effects of Opiate-Medicines, that it requires a particular Consideration.

As Hunger, or the Emptiness of the Stomach, is a painful Sensation; so the satisfying or removing of this is a pleasing and an agreeable one. Now, all Pain is a *Stimulus* upon the Part affected; and this, we all know, being attended with Contractions of the pained Membranes, causes a greater Afflux than ordinary of the nervous Juice that Way. On the other Hand, Pleasure, or a de-

delightful Sensation in any Part, is accompanied with a smooth Undulation, and easy Reflux of the Liquor of the Nerves towards the Brain. This is, as it were, the Entertainment of the Mind, with which being taken up, it does not determine the Spirits to the Organs of Motion: That is, there is such a Relaxation of the muscular Fibres, and such a Disposition of the nervous Fluid, as we have observed to be necessary to Sleep. And this is the Reason of that Chilliness in the Limbs, which is commonly complained of after a good Meal.

If it seem strange, that a Pleasure in the Stomach should so powerfully influence the Mind, let it be considered, on the other Hand, how violent Effects an uneasy and disagreeable Sense in the same Parts does produce; what a terrible Agony two or three Grains of *Crocus Metallorum* throws the whole Fabrick into; how readily the Fluid of the Nerves is, with a more than ordinary *Impetus*, determined, and commanded into the Muscles of the Stomach and *Abdomen*, in order to throw off the Enemy, and remove the ungrateful Sensation.

Now, the Consequences, which are ascribed to a pleasing Sense of this Part, are only just the contrary of these, which the opposite Affection of Pain induces. And, indeed, Pleasure and Pain are two great Springs of Action in the Animal OEconomy. The Changes they make in the Fabrick, are the Causes of many Effects, which seem surprizing, because we do not regard the Mechanism by which they are produced: But, these must be more considerable

in the Stomach, than any where else; this Part being, for many wise Purposes, of so acute a Feeling, that some Philosophers have for this Reason, thought it to be the Seat of the Soul.

Besides these Considerations, it may be taken Notice, that the Stomach, being distended with Food, presses upon the descending Trunk of the *Aorta*, and thus causes a greater Fulness of the Vessels in the upper Parts; whereupon the Brain is loaded, or the Derivation of Spirits into the Nerves diminished, upon which Inactivity or Drowsiness ensues. From hence proceed those Flushings in the Face, Redness, &c. after plentiful Eating and Drinking, most visible in those whose Vessels are lax and weak, as in exhausted and hectick Persons they more especially are. Thus we may, without the Assistance of the new Chyle entering into the Vessels, account for that Inclination to Sleep, which follows upon a full Stomach: Though we must also allow the Distension, from this, to be a considerable Cause of the same Effect. But, this does not happen immediately, nay, sometimes, perhaps, not within two or three Hours after Eating; and the sudden Drowsiness must (as well as the present Refreshment and Reviving which Meat gives) be chiefly owing to some more speedy Alteration.

Now, to apply this more strictly, it may be necessary to consider yet more nearly the Effects of an *Opiate* or *Narcotick*; first upon the Stomach, and afterwards, when they have passed the *Primæ Viæ*, upon the arterial Fluid itself.

An agreeable Sensation produced

duc'd in the Stomach, together with a Distention of its Membranes, has been already observ'd to be the Cause of that Sleepiness, to which we are so inclinable after Eating. The one of these engages the Mind, the other acts upon the Body. For, Pleasure amuses the Soul, as it were, so that it does not think, or exercise itself about any outward Objects; that is, it is inclined to Rest, and the Fulness of the Vessels in the Brain checks and hinders, in some Measure, the Derivation of the nervous Juice into the Organs. Now, they who take a moderate Dose of an *Opiate*, especially, if not long accustomed to such Things, are so transported with the pleasing Sense it induces, that they are, as they often express themselves, in Heaven; and, though they do not always sleep, (which proceeds from the Presentation of pleasing Images to the Mind, being so strong, that, like Dreams, they do over-engage the Fancy, and so interrupt the state of Rest) yet they do, however, enjoy so perfect an Indolence and Quiet, that no Happiness in the World can surpass the Charms of so agreeable an Extasy.

Thus we have, from these Medicines, but in a far more eminent Degree, all those Effects which were observed to follow upon that grateful Sense in the Stomach, which a moderate Fulness produces. For, no Bodies are so fit and able, pleasingly, to affect our sensible Membranes, as those which consist of volatile Parts, whose Activity is tempered and allayed, by the Smoothness of some which are lubricating and oily: For, they lightly rarefy the

Juices of the Stomach, and cause a pleasant Titillation of its nervous Coat, whereby there is induced an agreeable Plenitude, and the Mind is entertained with Ideas of Satisfaction and Delight. And thus we easily see, upon what Mechanism the other Vertues of *Opiates* do depend: For, their easing Pains, checking Evacuations, &c. proceed not only from the Mind's being taken up with a pleasing Sense, whereby it is diverted from a disagreeable one; but all Pain being attended with a Contraction of the Part, the Relaxation of the Fibres, which they cause, eludes and destroys the Force of the *Stimulus*.

In like Manner, in immoderate Secretions, there is most commonly an Irritation of the Organs, the Removal of which will abate the Discharge. And herein lies the incrassating Quality of these Medicines, in that, the twitching Sense upon the Membranes of the Lungs, Bowels, &c. being lessened, the sharp Humour is suffered to lodge there in a greater Quantity, before it is so troublesome, to be thrown off and expelled: It being all one, as if there were no Irritation of the Part, if the uneasy Sense thereof be not regarded by the Mind. These Effects will be heightened by the Mixture of the *Narcotick* Particles with the Blood; which is hereupon rarefy'd, and distends its Vessels, especially, those of the Brain: And thus does still, to a greater Degree, lessen the Influx of the nervous Fluid to the Parts, by pressing upon the *Tubuli*, or little Canals, through which it is derived. This is the Reason of that difficulty of Breathing, which they do, for a Time, experience, who

who take these Kind of Medicines ; this Symptom being inseparable from the Rarefaction of the Blood in the Lungs.

From hence it appears, that the Action of these Medicines, and particularly, that of *Opium*, is very analogous to that of other volatile Spirits ; only, that a small Portion of the former has a Force equal to that of a greater Quantity of the latter. And this is very evident, in those who accustom themselves to take large Doses of *Opium* ; as the *Turks* and *Persians* do, to that Degree, that it is no uncommon Thing there to eat a Dram, or two, at a Time ; for, the Effects of it, in them, are no other than downwright Drunkenness : Upon which Account, it is a common Saying with them, and on the same Occasion, *He has eat Opium* ; as with us, *He has drank too much Wine*. Neither, indeed, do they bear such large Quantities of it, otherwise than Tipplers will a great deal of Brandy ; that is, by habituating themselves to it, by Degrees, beginning with small Doses, and requiring still more and more, to raise themselves to the same Pitch. Just as *Galen* tells of a Woman at *Athens*, who, by a gradual Use, had brought herself to take, without any Hurt, a considerable Quantity of Hemlock : Which Instance is the more to our Purpose, because *Nic. Fontanus* knew one, who, being recovered of the Plague, and wanting Sleep, did, with very good Effect, eat Hemlock for some Time ; 'till falling ill again of a Fever, and, having left off the Use of this Remedy, he endeavoured to procure Rest, by repeated Doses of *Opium*, which (Nature having been accustomed

to a stronger Alterative) had no Operation, until the Help of Hemlock was again called in, with the desired Success.

It is a sufficient Confirmation of all this Reasoning, that *Prosper Alpinus* observed amongst the *Egyptians*, those who had been accustomed to *Opium*, and were faint and languid, for Want of it, (as Drinkers are, if they have not their Liquors) to be recovered, and put into the same State of Indolence and Pleasure, by large Doses of *Cretian Wine*, made hotter, by the Infusion of Pepper, and the like strong Aromatics. Nor is it, perhaps, amiss to remark, that in *Maniacal* People, as is frequently observed, a quadruple Dose of an Opiate will scarcely produce any considerable Effect. Now, in Persons so affected, the Mind is deeply engaged, and taken up with some Images, or other, as, Love, Anger, &c. so that it is not to be so easily moved or diverted, by those pleasing Representations, which it would attend to at another Time, and upon which the Virtues of these Medicines do, in a great Measure, depend. Besides this, those who are *Maniacal*, do, to a Wonder, bear the Injuries of Cold, Hunger, &c. and have a prodigious Degree of muscular Force : which argues the Texture of their Blood to be very strong, and the Cohesion of its Globules great : So that the spirituous Parts of an Opiate cannot make that Disjunction and Rarefaction of this Fluid in them, which it does in ordinary Bodies and Constitutions.

How far this Theory is improveable into Practice, all such are Judges, who have a true Acquaintance

quaintance with the Animal OEconomy. And, because many medicinal Simples, under this Division, have often Effects, which are termed *deleterious* and *poisonous*, infomuch as to kill, and that very suddenly; it may be worth While to inform ourselves, from the same Instructor, who has conducted us hitherto on this Head, how such Instruments act, in bringing about those fatal Consequences. For, the most gentle of this *Tribe*, in an Over-Dose, have the same Effects as a Poison, and prove equally destructive. *Opium*, in too great a quantity, will inflame the Stomach, and rarefy the Blood to such a Degree, that the Vessels cannot again recover their Tone; whereupon Apoplectick Symptoms, &c. will ensue.

To be convinced of this, Dr. Mead tells us, that he forced into the Stomach of a small Dog about half a Dram of crude *Opium*, dissolved in boiling Water. He quickly vomited it up, with a great Quantity of frothy Spittle; but repeating the Trial, by holding up his Head, and beating him, the Doctor made him retain three or four Doses, intermitting between each, about a Quarter of an Hour. When the Dog had thus taken, as near as he could guess, about two Drams, he watched him an Hour, when he began to sleep; but presently started up with Convulsions, fell into universal Tremblings, his Head constantly twitched and shook; he breathed short, and with Labour, and, at length, lost entirely the Use of his hinder-Legs, and then, of the fore-ones, which were stiff and rigid, like Sticks. As he lay snorting, the

Doctor, to hasten his End, was giving him more of the Solution; but, on a sudden, his Limbs grew limber, and he died. Upon opening his Stomach, it was found wonderfully distended, though empty of every Thing but some Water and *Opium*, together with some Parcels of frothy *Mucus* swimming in it: The Inside was as clean, as if scraped, and washed from all the Slime of the Glands, with some Redness here and there, as in a beginning Inflammation. The *Pylorus* was contracted. The Blood-Vessels of the Brain were very full; and he took out a large Grume of concremented Blood from the upper Part of it, cutting into the *Sinus Longitudinalis*, as is not uncommon in Apoplectick Carcases; but found no extravasated *Serum* in the Ventricles, nor among any of the Membranes.

And thus, from the Effects of an Over-Dose of an Opiate, may we conceive how many, under this Class, are so powerful, in their Narcotick Qualities, as to prove deadly, in very small Quantities; and are, therefore, not safely admitted into Practice. Some of them consist of such hot, acrid, and corrosive Parts, as by rarefying the Juices of the Stomach, and wounding of its nervous Membranes, are the Cause of all those Disorders, which do immediately follow. For, upon the Sense of a violent Irritation and Pain, the Fluid of the Nerves is immediately, in large Quantities, determined to the Part affected; and this, if the *Stimulus* is not over-great, will be only to such a Degree as is sufficient, by contracting the

the Fibres of the Stomach, and Muscles of the *Abdomen*, to throw off the Cause of the disagreeable Sensation: But, the uneasy Twitching being too terrible to be borne, the Mind, by a Kind of Surprise, does, with Haste and Fury, as it were, command the Spirits thither. Thus, the Business is over-done, and the Action of the Fibres become so strong, that the Orifices of the Stomach are quite closed; so that, instead of discharging the noxious Matter, the Torment is made greater, and the whole OEconomy put into Confusion. The Instance of the Child, in *Wepfer*, which, in such an Agony, made Water, to the Height of five or six Foot, with a surprizing Strength and Violence, is a Demonstration of this forcible Contraction of the Muscles. Nor is it any Wonder, if, in these Circumstances, all Sense be lost, Blood gush out at the Ears, Nostrils, &c. the Parts being all torn and broke, by the Violence of the Convulsions; which, tho' they begin in the Muscles of the Belly, must, at last, prevail in the Members too, 'till the whole Fabrick is shocked and overturned; and some corrosive Salts, perhaps, getting into the Blood, and, by the Rarefaction of it, distending the Vessels, the membranous Coats of them being already over-stretched, will the more easily give Way, and let out their Fluid.

And, besides the irritating saline Particles in the Composition of some of this Kind, many of them abound with an extremely fetid and offensive Sulphur; which gives such a disagreeable and uneasy Sensation to the

Nerves, as suffocates, in a Manner, the Spirits, and deadens their Motions.

Nares, the Nostrils. See *Nasus*.

Nasalia, from *Nasus*, the Nose; the same as *Errhines*.

Nasi Os. See *Maxilla superior*.

Nasus, the Nose. This may be divided into two Parts, the external, and the internal. The external Part is covered with the Skin, and some Muscles; which see under their proper Names. Its upper Part consists of two Bones, closely joined together on their upper Side. Its lower Part is made of four Cartilages, of which the first two are fixed to the lower Ends of the foresaid Bones; they are also joined together on the upper Side: They are pretty broad, and, as they approach the Tip of the Nose, they grow thinner, and softer. The other two lie upon the lower Ends of the first two, to which they are ty'd by a Membrane; they are called *Alæ Narium*. The Cavity, made by these Bones and four Cartilages, is divided in its Middle into two Nostrils, by a Partition, of which the upper End is bony, and the lower End cartilaginous. The fleshy Extremity of this Cartilage is called *Columna*. The upper End of each Side of this Cavity divides into two, of which one goes up to the *Os Spongiosum*, the other goes down into the *Fauces*, and opens behind the Palate, by which Means we breathe through our Nostrils. At the lower End of this Cavity there are two small Holes, which pierce the Bone of the Palate, and open in one behind the *Dentes incisivi*; they carry the thin Rheum of the Nostrils

Nostrils into the Mouth. The Cavity is covered by a pretty thick, and glandulous Membrane : Its Glands separate that Matter, which we call *Mucus*, in the Nostrils. On the lower End of this Membrane, there grow several Hairs called *Vibrissæ*, they, with the *Mucus*, which the Glands separate, stop any Filth from ascending too far into the Nostrils.

By the internal Part of the Nose, is understood the immediate Organ of Smelling ; it lies in the upper Part of the Cavity of the Nostrils ; it is made of the *Os Cribriforme*, and its Productions, the *Os Spongiosum*, of which each *Lamina* is covered with a very fine Membrane, upon which the Fibres of the Olfactory Nerve, which passes the Holes of the *Os Cribriforme*, and the Fibres of the first Branch of the fifth Pair, which come from the Orbit, are spread. In this Membrane there are many small Glands, which separate an Humour that moistens it, and stops the Exhalations of odoriferous Bodies, which make their Impressions upon the Olfactory Nerves that are spread upon it. Hounds, and other Beasts, which have a more exquisite Smell than Men, have also many more *Laminæ* covered with such a Membrane. There are several Conduits which open between these *Laminæ*. The first and second are the *Ductus Lachrymales*. The third and fourth come from the *Sinus Frontalis*. The fifth and sixth come from the Nut of the second Bone of the upper Jaw. The seventh and eighth come from the Cells of the *Os Spongiosum* ; they pierce the Membrane which covers the

first or uppermost *Lamina* : And the ninth and tenth come from the *Sinus* in the *Os Sphenoides*. All these Conduits carry the Liquor, which is separated, in their Cavities, into the Nostrils, for the moistening its Membranes, which otherwise would dry too much, by the Air breathed through the Nostrils.

The Vessels of the Nose are Arteries from the *Carotidales*, which pass with the Olfactory Nerve, and they are distributed into the internal Nose. The external *Carotidal*, the Jugular, and the second Branch of the fifth Pair, give Arteries, Veins, and Nerves to the external Nose. Some give an Account, why the Smell of Bodies, which consist of acrimonious Parts, draws Tears from the Eyes ; and, why the Want of Taste does ordinarily accompany the Want of Smelling, by the Communication of the Branches of the fifth Pair of Nerves, which are distributed through those Organs of Sensation.

Nates Cerebri. See Brain.

Natural Faculty, is that Power arising from the Blood's Circulation, which is conspicuous in all the Secretions performed within the Body, that Secretion alone excepted, which is made at the Origin of the Nerves.

Natural Functions, are those which convert the Aliment into the Substance of the Body, and, therefore, depend upon the *Viscera*, Vessels, and Humours, that receive, detain, move, change, mix, separate, apply, discharge, and consume.

Nature, is a Word used in divers Significations. More strictly it is taken for a peculiar Disposition of Parts in some particular Body :

Body : As we say, it is the Nature of Fish to live in the Water. And again, it is taken more largely for the universal Disposition of all Bodies : And, in this Sense, it is nothing else but the Divine Providence, forasmuch as that governs and directs all Things by certain Rules and Laws, accommodated to their several Conditions of Existence. Sometimes it is taken for the essential Properties of some Things, with the Attributes belonging thereunto ; as we say, it is in the Nature of God to be good, of a Soul to think, or of a Stone to gravitate. And lastly, it is sometimes used for the System of the Universe, and the whole visible and created World.

Laws of Nature, are those Laws of Motion, by which all natural Bodies are commonly governed in all their Actions upon one another, and which they inviolably observe in all the Changes that happen in the natural State of Things ; they are reducible to these.

I. *All Bodies persevere in the same State of Rest, or of moving forward in a strait Line, unless forced out of that State by some outward impress'd Violence ; that is, all Bodies at Rest, will naturally, and of themselves, for ever continue in Rest, unless some external Cause put them in Motion : And all Bodies in Motion will naturally move forwards for ever in the same strait Line, unless they are stopped by some opposite Force, or turned out of their Course by some differently directed Violence.*

To shew how inviolably this Law is observed by natural A-

gents, we need only consider, it never has been observed, that any Body did, of itself, bring itself from Rest to Motion, nor that ever any Body in Motion, of itself, altered its Course ; but that where-ever such Changes happened, there were always evident Causes. If Bodies changed their Places, of themselves, all Things would run into Confusion ; nor would there be any certain Means to regulate the Motions of the Universe. We are certain, *Projectiles* would for ever move on in the same right Line, did not the Air, their own Gravity, or the Ruggedness of the Plane on which they move, stop their Motion, or, did not some Body with a different Direction alter their Course. A Top, whose Parts, by their Cohesion, hinder one another's rectilinear Motions, would never cease to turn round, did not the Air gradually impair its Motion. Natural Bodies consist of a Mass of Matter, which, by itself, can never alter its State ; and, if Bodies are once at Rest, they must continue so, unless some new Force put them in Motion. If in Motion, the same Energy will continue them in Motion, and drive them forwards in the same Directions.

Moreover, there is in Matter a passive Principle, which Sir Isaac Newton very well expresses, by the *Vis Inertiae*, whereby Bodies resist, to the utmost of their Power, any Change or Alteration of their State, whatever it be, either of Rest, Motion, or its Direction ; and this Resistance is always equal in the same Body, and in different Bodies is proportional to the Quantity of Matter they contain. There is required

as much Force to stop a Body in Motion, as is required to put it in Motion, and *è contra*: And, therefore, since the same Body equally resists the contrary equal Changes of its State, this Resistance will operate as powerfully to keep a Body in Motion, as to keep it at Rest; and consequently, of itself, it can never change its State of Rest, Motion, or Direction; for, to change its Direction is the same thing as to move, of itself, another Way. Matter then, of itself, is so far indifferent to Motion, or Rest, that it is no more inclined to the one than to the other, and does no less resist a Change from Rest to Motion, than from Motion to Rest. This *Vis Inertiæ* is no where more conspicuous, than in the sudden Motion of a Vessel full of Liquor upon a horizontal Plane; at first, while the Vessel is moving along the Plane, the Liquor seems to move with a Direction contrary to that of the Vessel, the Water rising on the Hinder-Side of the Vessel. Not that there is really any such Motion impress'd upon the Liquor, but that, by the *Vis Inertiæ*, the Water endeavouring to continue in its State of Rest, the Vessel cannot, immediately, communicate its Motion to it, by reason of its Bulk and fluid State: but the Liquor perseveres in its State of Rest, whilst the Vessel makes forwards, and so seems to move a contrary Way. But, when once the Liquor has the Motion of the Vessel entirely communicated to it, and begins to move with a Velocity equal to that of the Vessel, if the Vessel be suddenly stopped, the Liquor continues its Motion, and dashes over the Sides of the Vessel. This passive

Principle, or *Vis Inertiæ*, is essential to Matter, because it neither can be deprived of it, nor intended, or remitted in the same Body, but is always proportional to the Quantity of Matter Bodies contain.

Corol. 1. Hence it is evident, that no Particle of Matter, nor any Combination of Particles, that is, no Body can either move, of themselves, or of themselves alter the Direction of their Motion: Matter is not endowed with Self-Motion, nor with a Power to alter the Course in which it is put, it is merely passive, and must for ever, of itself, continue in that State and that Course that it is settled in; and, if it can't move of itself, it can never alter its Course of itself, when in Motion; for to alter its Course, of itself, is only to move, of itself, after a particular Manner.

Corol. 2. Hence it is evident, that no Body put in Motion, will naturally, and of itself, move in a curve Line. All Motion is naturally forward in the same strait Line with the Direction of the moving Force; but, whatever moves in a curve Line, must in every Point alter its Direction, and therefore, naturally of itself, no Body can move in a curve Line.

Corol. 3. Hence the great Bodies of this Universe, the Planets, their Satellites, and the Comets, do not naturally, and of themselves (though at first put in Motion) move in their respective Orbits, which are curve Lines returning into themselves, but are kept in them by some attractive Force, which, if once suspended,

they would for ever run out in right Lines ; and consequently, the Motions of these great Bodies in their Orbits do absolutely depend upon this attractive Force, whencesoever it arises.

Corol. 4. Hence neither Motion, nor Rest (I mean, not one of them particularly) is essential to Matter ; *i. e.* Matter is indifferent, as to either of these particularly, and does as much resist its being changed from Rest to Motion, as it does the being changed from Motion to Rest. And, as any Force will imprint some Degree of Motion on a quiescent Body, so the same Degree of Force, impress'd at the same Time with a contrary Direction, will bring it Rest again ; but, it is not necessary to the Being of Matter, that it be in Rest or Motion : For, Matter will be still Matter, in whichever of these States it be. In a Word, since the formerly mention'd passive Principle, or *Vis Inertiae*, is essential to Matter, it thereby becomes indifferent, as to Motion or Rest, and is equally susceptible of either, according as the extrinsick Force urges it.

Corol. 5. Hence the Necessity of a *Vacuum*, or Space distinct from Matter, is clearly demonstrable : For, since, by their *Vis Inertiae*, all Bodies resist, to the utmost of their Power, any Change or Alteration of their State, whether of Motion or Rest ; and since the Resistance in the same Body is always equal, or the same, and in different Bodies is proportionable to the Quantity of Matter they contain ; and since, consequently, if two Bodies containing equal Quantities of Matter, and moving

with equal Celerities in contrary Directions, so that they impinge directly upon one another, will certainly both rest or stop at the Point of their Concourse ; as also, since it is demonstrable, that two Bodies moving contrariwise with equal Celerities, and both resting, are equally heavy ; it necessarily follows, that two Bodies, containing equal Quantities of Matter, are equally heavy : And, therefore, were there no Vacuities in Bodies, two Spheres of equal Diameters should contain equal Quantities of Matter, and, consequently, be equally heavy, *i. e.* two Spheres of equal Diameters, one of Gold, another of Wood, should have the same specifick Gravities : which being contrary to Experience, there is a Necessity of admitting Vacuities in the latter Sphere, to answer the Difference of their Gravities.

It is true, it may be here answered, that one of the equal Bodies may be supposed to be more porous than the other, and the Pores to be pervaded by a subtile Fluid, which, passing freely through the Bodies, is not concerned in the Impulse. And, to obviate this Objection, and, consequently, to make this Proof of the Necessity of a *Vacuum* amount to a Demonstration, Sir Isaac Newton has shewn, from many repeated Experiments by *Pendulums*, in Air, Water, and Mercury ; and more exactly, by Experiments on heavy Bodies falling in Air and Water ; that the Resistance of fluid Bodies is always proportional to their Densities, that is, to the Quantities of Matter they contain, or their *Vires Inertiae*. The Resistance in Fluids arises from their greater pressing on

on the Fore, than Hind-Part of the Bodies moving in them; and this must be always in all Fluids proportionable to the Quantity of Matter they contain, which presses on these Sides, that is, their Density. Bodies moving in Fluids press upon, and excite a Motion in the Fluids in their Passage; and this Motion, thus impress'd, arises from the Excess of the Pressure of the Fluid upon the Fore-part, above that Pressure on the Hind-part of the moving Bodies: and this Excess of Pressure of Bodies in Fluids will not only raise a Motion in them, but will also act on the Bodies themselves, by retarding their Motion, according as it is greater or less, whence the Resistances of Fluids arise; wherefore, the Resistances of Fluids are as the Quantities of Matter they contain, or their Densities, which alone can make the Excess greater or lesser. It is true, there is a Resistance in Fluids, which may arise from their Elasticity, Glutinousness, and the Friction of their Parts, &c. This Resistance may be less'n'd, and, in a great Measure, remov'd by the Change of the Figure and Size of their Parts. But these Considerations have no Place in any of the Fluids of our System, wherein Experiments have been made: it having been always found, that their Resistances were proportional to their Densities. So that no Subtilization, Division of Parts, or Refining, can alter their Resistances, these depending entirely on their Densities, or *Vires Inertiæ*, that is, the Quantities of Matter they contain; and the most subtile *Æther* would give the same Resistance to a Projectile, as Mercury, if the Density or Quantity of Matter were the same in the

first as the last: For, that being supposed, the Excess of the Pressure or Weight on the Fore-part, above that on the Hind-part of the Projectile, would be the same in both, on which alone the Resistances of both depend; since it is its Weight alone, that is, Matter, that can produce Pressure in inanimate Bodies, *Vide Newt. Schol. Prop. XL. lib. 11. 2d Edit.* From which it is plain, that if Bodies be ever so porous, and fill'd with Fluids ever so subtile, yet, if there be no Vacuities without Matter entirely, these porous Bodies must be equally heavy with the most compact ones, since the Fluids, required to fill these Pores, must be equally heavy with the solid Body, and both must contain an equal Quantity of Matter, if there be no Vacuities; all Fluids resisting, that is, indeed, weighing, in Proportion to the Quantities of Matter they contain. If, therefore, there be no Vacuities, all Bodies must be equally heavy; which being contrary to Experience, there is a Necessity of admitting Vacuities, to account for the different Weights of Bodies.

II. *The Changes made in the Motions of Bodies are always proportional to the impressed moving Force, and are produced in the same Direction with that of the moving Force.*

Effects are always proportionable to their adequate Causes; and, if any Degree of Force produce any Degree of Motion, a double Degree of the same Force will produce a double Degree of Motion, and a triple a triple, and so on: And this Motion must proceed in the same Direction with

that of the moving Force, since from this only the Motion arises; and because, by the former Law, Bodies in Motion cannot change their Direction, of themselves, so that unless some new Force alter its Course, the Body must proceed in the same Direction with that of the moving Force. And, if the Body was before in Motion, the Motion arising from this impress'd Force, if in the same Direction, does so much increase the former Motion; if it has a contrary Direction, it destroys a Part of the former Motion, equal to that which is impress'd; when it has a Direction oblique to that of the former Motion, it is either added to, or subtracted from the former Motion, according as the Motion, arising from a Composition of those two, is determined.

Corol. Hence it is evident, that, in the present Constitution of Things, there can be no perpetual Motion. By a perpetual Motion, I mean, an uninterrupted Communication of the same Degree of Motion, from one Part of Matter to another in a Circle: not as Bodies put in Motion do for ever continue in the same, except so far as they are resisted or stopped by other Bodies; but a Circulation of the same Quantity of Motion, so that it perpetually returns undiminished upon the *first Mover*. For, by this Law, the Motion produc'd is but proportionable to the generating Force; and all Motions on this Globe being performed in a resisting Fluid, *viz.* the Air, a considerable Quantity of the Motion must be spent in the Communication, on this *Medium*, and consequently, it is impossible the same Quantity of Motion should return

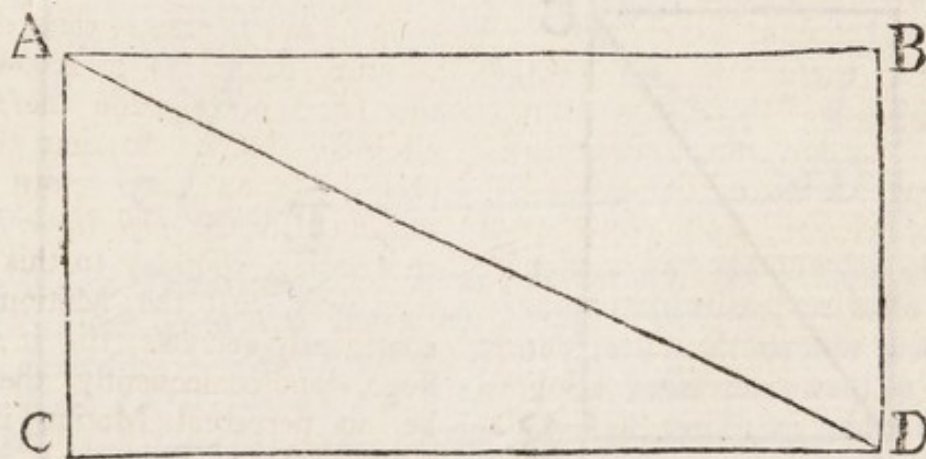
undiminished upon the *first Mover*, which is necessary toward a perpetual Motion. Moreover, the Nature of material Organs is such, that there is no avoiding a greater or lesser Degree of Friction, tho' the Machine be formed according to the exactest Principles of Geometry and Mechanicks, there being no perfect Congruity, nor exact Smoothness in Nature; the Manner of the Cohesion of Bodies, the small Proportion the solid Matter bears to the Vacuities in them, and the Nature of the constituent Particles of Bodies, not admitting the same. Besides, how very imperfect our most finished mechanick Performances are, an ordinary *Microscope* will easily discover. Now, these Things must very considerably diminish the communicated Force, so that it is impossible there should be a perpetual Motion, unless the communicated Force were so much greater than the generating Force, as to recompense the Diminution made therein by all these Causes, so that the impress'd Motion may return undiminished to the *first Mover*. But that being contrary to this Law, it is clear, that the Motion must continually decrease, till it at last stops, and consequently, there can be no perpetual Motion in the present State of Things.

III. *Repulse or Re-action is always equal to Impulse or Action, or the Action of two Bodies upon one another is always equal, but with a contrary Direction, i. e. The same Force, with which one Body strikes upon another, is returned upon the first by that other: but these Forces are impressed with contrary Directions.*

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Whatever presses or draws another, is as much press'd or drawn by that other; if one presses a Stone with his Finger, the Stone presses his Finger again. If an Horse draw forward a Stone by a Rope, the Stone does equally draw back the Horse; for the Rope, being equally distended both Ways, acts upon both equally. If one strike an Anvil with an Hammer, the Anvil strikes the Hammer with equal Force. The Steel draws the Magnet as much as the Magnet does the Steel, as is evident, by making both swim in Water. So in pulling a Barge to Land by a Rope, the Bank pulls the Barge as much as the Barge does the Bank: And, in the Descent of heavy Bodies, the Stone attracts the Earth as much as the Earth does the Stone, *i. e.* the Earth gravitates towards the Stone, as much as the

Stone does toward the Earth. And the Motions, produced by both these Gravitations, are equal in both, only the Stone is altogether inconsiderable, in respect of the Bulk of the Earth; and consequently, the Velocity of the Earth's Motion toward the Stone is inconsiderable, in respect of the Stone's Motion toward the Earth; and therefore, the Motion of the Earth toward the Stone is insensible. And universally in all the Actions of Bodies, if a Body act on another, and change its Motion any Manner of Way, that other will make the same Change in the Motion of this Body with a contrary Direction, so that by these Actions there are made equal Changes, not of the Velocities, but of the Motion; for, the Changes made on the Velocities, in contrary Directions, are in a reciprocal Proportion to the Bodies.



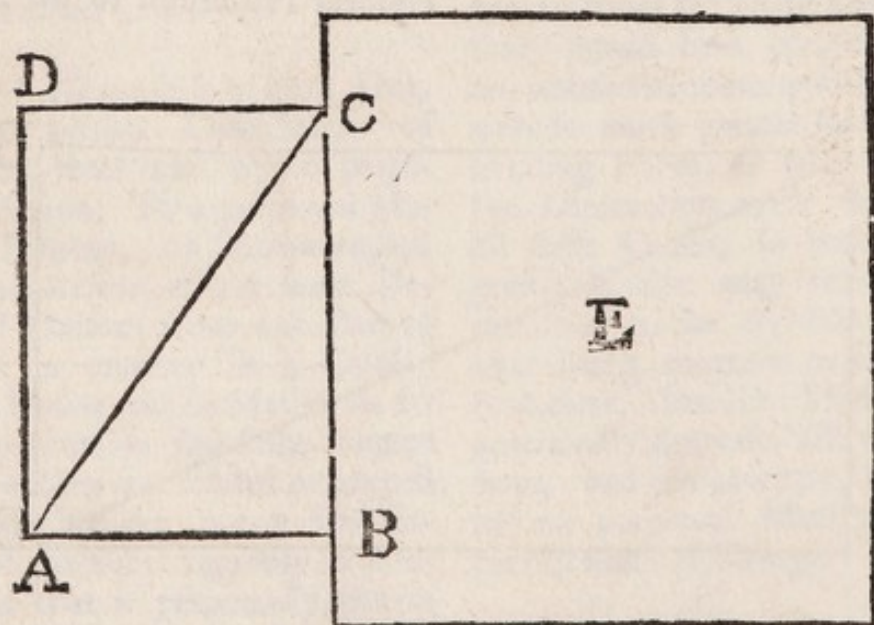
Corol. 1. If a Body, *A*, be impelled by two different Forces, one in the Direction *AB*, with the Velocity *M*; another in the Direction *AC*, with the Velocity *N*; make *AB* to *AC*, as *M* to *N*; compleat the Parallelogram *ABCD*, the Diagonal of which is *AD*. The Composition of both these

Forces will make the Body describe the Diagonal *AD*, and in the same Time as it would have described either of the Sides; for, because the Force, whose Velocity is *N*, acts in the Direction *AC*, parallel to *BD*, it will not in the least hinder or destroy the Velocity in the other Force, by which it tends to
the

the Line BD . Wherefore, the Body will reach BD in the same Time, whether the Force, whose Velocity is N , be impress'd or not; and therefore, in the End of this Time, it must be found somewhere in BD : In like Manner, the Force, whose Velocity is M , acts in the Direction AB , parallel to CD , and therefore will not hinder the Velocity in the other Force in proceeding to CD , and the Body will reach CD in the same Time, whether the Force, whose Velocity is M , act or not; and consequently, in the End of the same Time, it must be somewhere in CD , but it cannot be found in BD and CD both, but at the Point D ; therefore, &c.

Corol. 2. From these Laws, and their necessary Consequences, all

the Rules of Bodies, ascending or descending in vertical Lines, may be deduced; as also, the Rules of the Congresses and Reflections of two Bodies, as the Geometricians have shewn. From the preceding *Corollary*, the Method of compounding and resolving Motions in any given Directions may be drawn: For Example, (see the former Figure) the Composition of the direct Force AD , of any oblique ones, such as AB and BD , as also the Resolution of the direct Force into any oblique ones, such as AB , and BD , and likewise the *Ratio* of an oblique Force to move a Body, to that of the same Force coming with a perpendicular Direction to move the same Body; for Example (see the following Figure) let an oblique Force, as AC , be impress'd



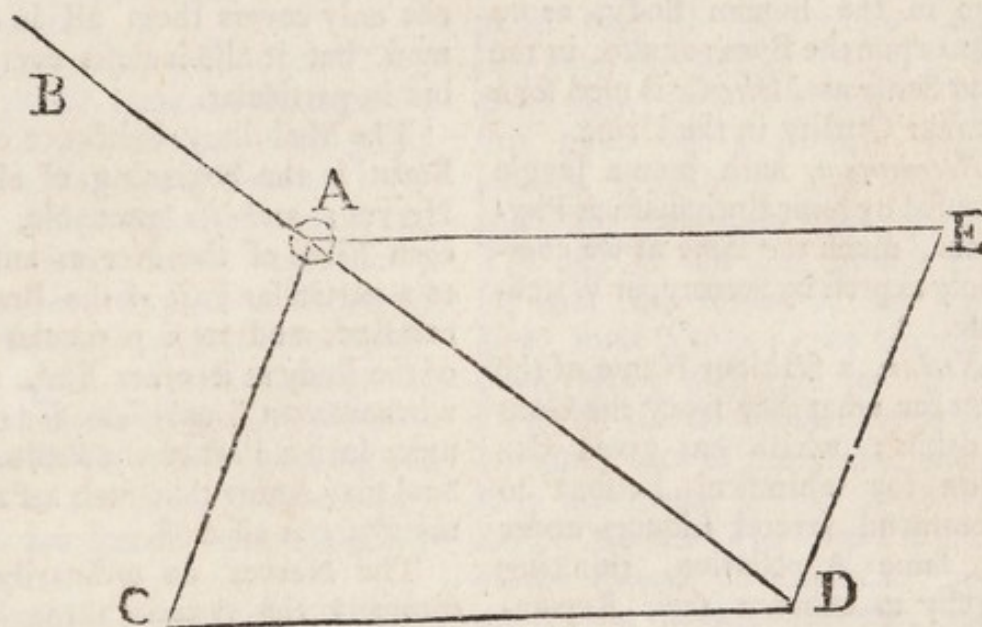
upon the Body E in C , at the Point C erect a Perpendicular CD , and from A let fall a Perpendicular upon CD , and another upon CB ; then, by the former *Corollary*, the Force AC may be resolved into the two Forces AD and AB , of which only AB has any Energy

to move the Body E ; wherefore, the oblique Force AC is to the same Force coming with a perpendicular Direction, as AB to AC , or as the Sine of the Angle of Incidence AB to the *Radius* AC . The same is true of the Energy of an oblique Stroke upon the Body E ,
to

to that of the same striking perpendicularly.

From the same preceding Corollary, it follows, that if a Body *A* be impelled or drawn by three different Forces in three different Directions, *AB*, *AE*, *AC*, so that the Body yields to none of them, but continues in *Equilibrio*, these three Powers are to one another, as three right Lines drawn parallel to their Directions, and terminated by their mutual Concourses. If *AD* represent the Force by which

the Body *A* is impell'd from *A* to *B*, then will the same *AD* represent the contrary equal Force, whereby it is impell'd from *A* to *D*. But, by the former Corollary, a Force, as *AD*, impelling from *A* to *D*, is equipollent to two others, acting in the Directions *AC*, *AE*; to which the other, impelling from *A* to *D*, is as *AD* to *AC*, and *AE* or *AC*, respectively. So likewise, two Forces acting in the Directions *AC*, *AE*, and being equipollent to the Force act-



ing in the Directions *AD*, from *A* to *D* will be to the Force acting according to the Direction *AD*, from *A* to *D*, as *AC*, *AE* to *AD*: and therefore, the Forces acting in the Directions *AC* and *AE*, and equipollent to the Force acting in the Direction *AD*, are to this Force acting in the Direction *AD*, as *AC*, *AE*, or *CD* to *AD*; that is, if a Body be urged by three different equipollent Powers in the Directions *AB*, *AC*, *AE*, these three Forces shall be to one another, as *AD*, *AC*, *ACD* respectively, *q. e. d.* And this single Proposition is the Foun-

dation of all the Mechanicks, as several Geometricians have expressly shewn; so that it is plain, these three Laws do virtually comprehend all the Rules of Mechanism; and consequently, if any Appearance contradict these Laws, or their necessary Consequences, it is not to be mechanically accounted for.

Naviculare Os, is the third Bone in the Foot, and lies between the *Astragalus* and the three *Ossa Cuneiformia*; thus called from *Navis*, a Ship, which it has some Resemblance to in its Shape: For which Reason likewise, it is sometimes called

called *Cymbiforme*, from *Cymba*, a Boat, and *Forma*, Shape. It has behind it a large *Sinus*, which receives the fore convex Head of the first ; and, before it is convex, distinguished into three Heads, which are received into the *Sinus's* of the *Ossa Cuneiformia*.

Nausea. Loathing ; a Symptom well known to attend many Disorders of the Stomach ; and the Cure must, therefore, have Regard to the Cause.

Nebula, strictly signifying a Cloud, is figuratively apply'd to Appearances, having Likeness thereunto in the human Body, as to Films upon the Eyes ; as also, in the same Sense as *Molecula* is used for a peculiar Quality in the Urine.

Necromancy, hath been a Juggle espoused by some Enthusiastick Physicians, much the same as we commonly express by Sorcery, or Witchcraft.

Nectar, a fictitious Name of the Poets for what they fancy the Gods to drink ; which has given Occasion for whimsical Persons to recommend several Liquors under the same Appellation, thinking thereby to enhance their Reputation.

Nenuphar, or *Nenuphar*, an obsolete Term for Water-Lilies ; whence the Oil made of them is, by some Writers, called *Oleum Nenupharinum*.

Nepenthe, was a Name first given to an Opiate or Laudanum, by *Theodorus Zwingerus* from the great Opinion he had of its giving Ease in all Manner of Pain ; the Word importing as much, from the Privative *ν*, *non* or *absque*, without, and *πένθος*, *Luctus*, Sorrow.

Nephritis, or

Nephriticus Dolor, from *νεφρός*,

Ren, a Kidney ; is the Distemper called the *Stone* ; because that Part is reckoned to be principally the Seat, or in Fault. Hence,

Nephriticus, sometimes signifies a Patient in such a Circumstance. And,

Nephriticks, are those Medicines which are good against such a Distemper, by their Power in dissolving or breaking stony Concretions in those Parts.

Nerve. A Nerve is a long and small Bundle of very fine Pipes or hollow Fibres, wrapp'd up in the *Dura* and *Pia Mater* ; which last not only covers them all in common, but it also incloses every Fibre in particular.

The Medullary Substance of the Brain is the beginning of all the Nerves ; and 'tis probable, that each Fibre of the Nerves answers to a particular Part of the Brain at one End, and to a particular Part of the Body at its other End, that, whenever an Impression is made upon such a Part of the Brain, the Soul may know that such a Part of the Body is affected.

The Nerves do ordinarily accompany the Arteries through all the Body, that the animal Spirits may be kept warm, and moving, by the continual Heat and Pulse of the Arteries. They have also Blood-Vessels, as the other Parts of the Body : these Vessels are not only spread upon their Coats, but they run also amongst their medullary Fibres, as may be seen amongst the Fibres of the *Retina*. Wherever any Nerve sends out a Branch, or receives one from another, or where two Nerves join together, there is generally a *Ganglio*, or *Plexus*, either less or more, as may be seen at the Beginning of all the Nerves of the *Medulla*
Spi.

Spinalis, and in other Places of the Body.

The Nerves are divided into those which come immediately out of the Skull, and those which come out between the *Vertebræ*. The first Sort come from the *Medulla Oblongata*, which has been already described, and they are ten Pair.

The first Pair are called *Nervi Olfactorii*. They arise from the Basis of the *Corpora Striata*, and, passing through the little Holes of the *Os Cribriforme*, are spread on the Membrane which covers the *Os Spongiosum*.

The second are called *Optici*. They arise, partly from the Extremities of the *Corpora Striata*, and partly from the *Thalami Nervorum Opticorum*, which last they almost embrace; from thence approaching one another, they unite above the *Cella Turcica*, and immediately dividing again, they pass through the foremost Holes of the *Os Sphenoides* into the Orbit, where piercing the Globe of the Eye, the medullary Fibres are spread upon the glassy Humour.

The third are called *Oculorum Motores*. They arise from the *Medulla Oblongata* on each Side of the *Infundibulum*, and the carotidal Arteries lie between them; from thence passing through the *Foramina Lacera* of the *Os Sphenoides*, they give a Branch, which, with a Branch of the fifth Pair, forms a considerable *Plexus*, which sends out several Twigs which embrace the Optick Nerve, and are spent on the Tunics of the Eye. They give a Branch to the Muscles, called *Attollens*, *Deprimens* and *Obliquus Minor* of the Globe.

The fourth Pair are called *Pathetici*, that arise from a small me-

dullary Cord that is behind the *Testes*; they go down upon the sides of the *Medulla Oblongata*; and passing under the *Dura Mater* by the sides of the *Cella Turcica*, they grow through the *Foramina Lacera*, and are wholly spent on the *Obliquus Major*.

The fifth Pair rise from the Fore-Part of the *Processus Annularis*. They are the biggest Pair of the Brain. They give Nerves to the *Dura Mater*. Each of them divides into three Branches, of which the foremost is called *Ramus Ophthalmicus*; because it passes through the *Foramen Lacrum* into the Orbit, where it divides into two Branches. The first sends out a Branch which joins a Branch of the *Motores*, and forms the *Plexus Ophthalmicus*. The rest of this first Branch passes over the Globe of the Eye, gives some Twigs to the *Glandula Lacrymalis*, and goes out at the Hole of the *Os Frontis* above the Circumference of the Orbit, where it is distributed in the Skin and frontal Muscles. The second Branch of the *Ramus Ophthalmicus* goes under the Muscle *Superbus*, and passes out at the Hole called *Orbiter Internus*, and is distributed in the internal Nose.

The second Branch of the fifth Pair, which passes out at the third Hole of the *Os Sphenoides*, divides into three Branches, of which one pierces the hind Side of the *Os Maxillare*, and gives Twigs to the Teeth of the upper Jaw; all the rest of it comes out at the Hole in the Fore-side of the same Bone, under the Orbit, and is distributed into the Cheeks and Nose. Another passes under the *Processus Zygomaticus*, and is distributed in the temporal Muscle. And the third is distributed in the

the Palate and Muscles of the *Pharynx*.

The third Branch of the fifth Pair passes through another Hole of the *Os Sphenoides*, and then it divides into two Branches; the first of which is again divided into four Branches, of which the first passes between the *Condyle* and the *Corone* of the lower Jaw, to the *Masseter*. The second is distributed in the *Crotaphites*. The third passes under the *Processus Zygomaticus* to the *Buccinator*, Glands of the Cheeks, and upper Lip. And the fourth passes from behind the *Condyle* of the lower Jaw, where it joins the *Portio dura*, over the Jaw, and is distributed in the Face. The second Branch is divided into three others: The first passes between the *Pterigoidæus Externus* and *Internus*: and, towards the Angle of the lower Jaw, it sends out a Branch which makes the *Chorda Tympani*, which goes also to the Muscles of the *Malleolus*, and then it joins the *Portio dura* before it comes out of the *Cranium*; the rest is spread on the Chin. The second goes along the Sides of the Tongue, and sends out several Branches which join the ninth Pair. It gives also some Twigs to the *Glandulæ Sublinguales*, to the Muscles of the Tongue and *Os Hyoides*. The third goes to the Teeth of the lower Jaw by the Holes in its In-side.

The sixth Pair of Nerves rise from the Sides of the *Processus Annularis*. This is a small Nerve which passes strait through the *Foramen Lacerum*, and is wholly spent on the *Musculus Abducens*. But, a little before it enters the Orbit, it casts back a Branch which alone makes the Root of the Intercostal Nerve. It passes out of the Skull by the same Passage the Carotid Artery enters. As soon as it is

come out of the Skull, it, with a Branch of the tenth Pair, and with the first and second *Vertebræ* of the Neck, forms a large *Plexus* called *Cervicalis*. Below this, it receives a Branch made of a Twig of the tenth Pair, and of the first of the Neck. As it descends, above the *Musculus Scalenus*, and, below the eighth Pair, it receives a Branch from each of the vertebral Nerves. When it comes to the *Clavicula*, it divides into two Branches, of which one passes above the Axillary Artery, and the other under it, and then they immediately join again. They, with a Branch of the first Pair of the Back, form a pretty large *Plexus* at this Place; and sometimes before (for it observes no Regularity) it casts out a Branch, which with a Branch of the eighth Pair forms the *Plexus Cardiacus*: then it goes down the Cavity of the *Thorax*, under the *Pleura*, near the *Vertebræ*; and, as it passes by, it receives a Branch from every Pair of the Back, by which it grows bigger and bigger. As it goes out of the *Thorax*, it divides into several Branches, of which the three Superior in the right Side form the *Plexus Hepaticus*, and in the left the *Plexus Splenicus*. These *Plexus's* furnish Nerves to the Kidnies, to the *Pancreas*, to the Caul, to the lower Part of the Stomach, to the Spleen, to the Liver, Mesentery, and the Intestines; and their Branches form a large Net upon the mesenterick Arteries, called *Plexus mesentericus*. The inferior Branches, as they go down upon the *Vertebræ* of the Loins receive a Branch from the first of the Loins, and they send out Branches which join those of the superior Branches which go to the Guts, and which form the Net upon the mesenterick Arteries.

Then

Then they go down into the *Bafon*, and form a large *Plexus* above the *Strait Gut* to which it gives *Nerves*; as also to the *Bladder*, *Vesiculæ Seminales* and *Prostratæ* in Men, and to the *Womb* and *Vagina* in Women.

The seventh Pair is the *Nervus Auditorius*. It arises from the hind Part of the *Processus Annulares*. It enters the Hole of the inner Process of the *Os Petrosum*. It divides into two Branches; that, which is soft, is called *Portio Mollis*, and it is distributed, into the *Labyrinth*, *Cochlea* and *Membranes* which cover the Cavities of the Ear. That, which is hard, is called *Portio Dura*; it goes out of the Ear by that Hole which is between the *Processus Mastoideus* and *Styloides*; it divides into two Branches, of which one goes to the Muscles of the Tongue, or *Os Hyoides*, and it gives a small Branch to the eighth Pair. The other is distributed in the external Ear, Nose, Lips, and Cheeks.

The eighth Pair is the *Par Vagus*: It rises from the Sides of the *Medulla Oblongata* behind the *Processus Annularis*, by several Threads which join together and go out by the same Hole that the *Sinus Laterales* discharge themselves into the *Jugulares*. It is joined by a Branch of the *Nervus Spinalis*, or *Accessorius Willisii*, and by a small Branch of the *Portio Dura*. Immediately after it comes out of the Skull, it gives a small Branch to the *Larynx*, as it goes down the Neck, above the *Intercostal Nerve*, by the Side of the *Internal Carotid*. At the *Axillary Artery*, it casts back the recurrent Nerves, of which the right embraces the *Axillary Artery*, and the left the *Aorta*. These two Branches ascend on each Side of the *Trachea Arteria* to the *Larynx*, where they are spent on the Mus-

cles of the *Larynx*, and *Membranes* of the *Trachea*.

Then the eighth Pair, after it has entered the Cavity of the *Thorax*, sends out two Branches, which, with the Branches of the two *Intercostals*, form, a little above the Heart, between the *Aorta* and *Trachea*, the *Plexus Cardiacus*, which gives a great Number of small Branches to the *Pericardium* and Heart; particularly very many creep along the *Aorta* to the left Ventricle. The eighth Pair gives also several Branches to the Lungs, which accompanying the *Bronchi*, then it descends upon the *Oesophagus*, and is spread upon the Stomach, and some Twigs go to the concave Side of the Liver, as has been said already.

With this Nerve, it is usual to describe another, which passes out of the Skull at the same Hole with it. It is called *Nervus Accessorius Willisii*. It arises from the *Medulla Spinalis*, about the Beginning of the sixth Pair of the Neck. As it ascends to the Head, it receives on each Side a Twig from the first five Pair of Nerves of the Neck, as they rise from the *Medulla Spinalis*. Then it enters the Skull, and passes out of it again with the eighth Pair, and is wholly spent upon the *Musculus Trapezius*.

The ninth Pair rises from the *Processus Olivares* of the *Medulla Oblongata*. It passes out of the Skull by its own proper Hole in the *Os Occipitis*. As it passes to the Tongue, it gives some Branches to the Muscles of the *Os Hyoides*, but its Trunk is distributed in the Body of the Tongue, and its Extremities from the *Papillæ Rotundæ* of the Tongue.

The tenth Pair rises by several small Threads, from the Beginning of the *Medulla Spinalis*; then ascending

ing a little, it goes out at the same Hole of the *Dura Mater*, at which the vertebral Artery enters, passing between the Protuberance of the *Occiput* and the first *Vertebra* in the *Sinus*, which we have observed in this *Vertebra*. Then it gives a Branch to the first Pair of the Neck which goes to the *Plexus Cervicalis*. It gives another to the second Pair, and a third to the Intercostal Nerve, and then it is all spent on the oblique Muscles of the Head.

The Nerves which come out between the *Vertebrae* are thirty Pair. They arise from the *Spinalis Medulla*, which (as we said before) is a Continuation of the *Substantia Medullaris*, or *Medulla Oblongata* of the Brain, contained in the great Holes of the *Vertebrae*. Its internal Substance is mixed in several Places with a Substance like the cortical Substance of the Brain (as *Malpighius* has observed.) From the first *Vertebra* of the Neck to the first of the Loins, it is divided by the *Pia Mater* into the right and left Side, not quite through its Middle, but the Depth of a Line or two in its fore and hind Part. From the first of the Loins to its Extremity, it is divided into a great Number of Fibres, which separate from one another, if they be shaken in warm Water. This Part, because of its Resemblance, is called *Cauda Equina*. 'Tis covered by four Membranes, of which the first is that which lines the great Holes of the *Vertebrae*. The second is the *Dura Mater*, which has two *Sinus's* one on each Side of the *Medulla*: They reach from the *Occiput* to the last of the *Os Sacrum*. The third is the *Pia Mater*. And the fourth, called *Arachnoides*, is a very fine Membrane, which contains only the Bundles of Fibres which make the vertebral Nerves.

All the Nerves, as they rise out of the *Medulla Spinalis*, are by the *Pia Mater* divided into two Planes, which lie one above the other; and, as soon as the Nerves are come out of the *Vertebrae*, they send a Branch to one another, where they make a little *Ganglio*.

The Nerves of the *Vertebrae* are thirty Pair; seven of the Neck, twelve of the Back, five of the Loins, and six of the *Os Sacrum*. They come out at the Holes in the Sides of the Bodies of the *Vertebrae*, which are taken notice of in the Preparations of those for a Skeleton.

The first Pair of the Neck is spread in the Muscles of the Head and Neck. It joins a Branch of the tenth Pair, which goes to the *Plexus Cervicalis*, and it gives another Branch to the Intercostal Pair below the *Plexus*.

The second Pair of the Neck gives also Nerves to the Muscles of the Head and Neck, and to the external Ear and Skin of the Face.

The third gives some Branches to the Neck and Head. It sends out the *Nervus Diaphragmaticus*, being joined by a Branch from the fourth Pair. This Nerve goes straight down the Cavity of the *Thorax*, and is spread on the Midriff.

The fourth, fifth, sixth, and seventh, give some Branches to the Muscles of the Neck and Head; but their greatest Branches, together with a Branch of the first of the Back, enter the Arms. As soon as they enter, they join all together, and then they immediately divide into five Branches. The first and innermost goes all to the Skin, which covers the inner and Forepart of the Arm. The second goes down by the inner Protuberance of

of the *Humerus*, by the Benders of the Fingers; and in the Palm of the Hand it divides into five Branches, of which one goes to each Side of the little and ring Finger, and the fifth to the external Side of the middle Finger. The third accompanies the Artery between the *Sublimis* and the *Profundus*: It divides also into five Branches, of which one goes to each Side of the Thumb and Fore-Finger, and the fifth to the internal Side of the middle Finger. The fourth passes under the *Biceps* to the outer side of the Arm, and back of the Hands, to be distributed in the Fingers, as the foregoing. The fifth is spent on the Muscles on the Inside of the Arm. All these Nerves, except the first, give Branches to the Muscles as they pass by.

The first Pair of the twelve Pair of the Back gives a Branch, as is said, to the Arms. The twelfth Pair is dispersed in the Muscles of the lower Belly, and all the rest run along the *Sinus* in the under Side of each Rib, giving Nerves to all the Muscles that lie upon the Ribs and *Vertebrae*.

The first and second Pair of the Loins give Nerves to the Muscles of the lower Belly, to the *Inguen*, to the Yard, and to the Parts contained in the Bason. The third and fourth give some Branches to the same Parts; but their Trunks join and make the *Nervus Anterior Femoris*, which is dispersed in the Fore-part of the Thigh. This Nerve sends a Branch through the Hole in the *Ischium*, which is spent in the *Triceps*. The last of the Loins, with a Branch of the fourth, enter the Thigh.

The Nerves of the *Os Sacrum* come not out at the Holes on its Back-side, but at those in its Fore-

side; and the last comes out between the Extremity of the *Os Sacrum* and the *Os Coccygis*.

The first four Pair of the *Os Sacrum* give some Twigs to the Parts in the Bason; but their great Branches, with the last, and a Branch of the fourth of the Loins, make the *Nervus Sciaticus*, which is the greatest Nerve in the whole Body. As this Nerve passes between the *Gracilis Posterior* and the *Semi-membranosus*, it gives a Branch to the Skin. When it comes to the Ham, it divides in two, of which one goes along the *Perone* to the upper Part of the Foot, and gives a Branch in both Sides of each Toe. The other passes under the *Gemelli* by the inner Ankle, and is distributed in like manner to the Toes in their under Side.

The fifth and sixth of the *Os Sacrum* are very small; they are dispersed in the Sphincter, and Bladder, and natural Parts.

Nervines, Remedies for Disorders of the Nerves.

Nervous Fluid. See *Brain*.

Neuroticks, from *νεῦρον*, *Nervus* a Nerve: the same as *Nervines*. Hence,

Neurologia, is a Description of the Nerves: And,

Neurotomy, the Anatomy of the Nerves: And,

Neurotomus, the Anatomist who is so employed.

Nictitans Membrana, the winking Membrane, is a thin Membrane which several Creatures have to cover their Eyes with, and shelter them from Dust, and guard them from Thorns, or exclude Part of the Light when it is too strong: for it is so thin, that they can see indifferently through it.

Nidus, a Nest, is, in a figurative Sense, sometimes used to express the Seat

Seat of a Disease, especially when it is confined to any particular Part.

Nibili Album, the same as *Pompholyx*, which see.

Nipple. See *Breasts*.

Nisus, is a Term used much, of late, in Philosophy and Mechanicks, for an Inclination of one Body towards another, as *Nisus in Contactum*, the same as Attraction.

Noctiluca, from *Nox*, Night, and *luceo*, to shine, are all such Bodies as shine, or give Light in the dark.

Nodulus, or *Nodus*, a Nodule, or little Bag. Suitable Ingredients are thus disposed of, to be suspended in Juleps, Apozems, Diet-Drinks, &c. *Nodus* is also sometimes used in the same Sense, as *Ganglio*; which see.

Noli-me-tangere, touch me not, is a tetters Eruption, thus called, from its Soreness, or Difficulty of Cure; but either seems upon so whimsical a Foundation, that it is not much Matter which.

Non-Naturals. Physicians reckon these to be six, *viz.* Air, Meat and Drink, Sleep and Watching, Motion and Rest, Retention and Excretion, and the Passions of the Mind. See these explained in *Sanctorius's Medicina Statica*, and *Wainwright's Non-Naturals*.

Non-organical, or *in-organical*, is used for a Part that is not fitted, of itself, to perform any Action, as a Tendon, Gristle, Bone, &c.

Nose. See *Nasus*.

Notæ Maternæ, Mother's Spots, the same as *Nævus*; which see.

Nothæ Costæ, or *falsæ*, false or bastard Ribs. See *Costæ*.

Nothus, is also sometimes used for the back Part of the Chest.

Nubecula, and *Nubes*, Clouds. See *Enæorema*.

Nucha, the hinder Part or Nape of the Neck; called also *Cervix*, which see.

Nuciferous, from *Nux*, a Nut, and *fero*, to bear: Botanists call all Trees thus which bear Nuts.

Nucleus, signifies properly the Kernel of a Nut; whence, in a figurative Sense, enucleate is used to express unfolding or explaining any Thing to its most remote Difficulties or Abstrusities.

Nutrimētum, Nourishment, is what supplies

Nutrition. What comes under this Term, is two-fold: First, all that passes in the first Scene, from Mastication to the Chyle's Entry into the Blood, is thus called. And, Secondly, The Apposition of new Parts in the Room of those wore off by Action. The first is thus carry'd on: The Parts of Food being divided by Mastication, and moisten'd with Spittle, that it may be rendered softer, in order to undergo a further Commination, is thrust down into the Stomach; wherein, by the Assistance of the continual Motion arising from the musculous Tunicks of the Stomach, and of Respiration, by which the Diaphragm alternately presses the Stomach downwards, the Parts of the Food softened by the Spittle, and other serious Liquors from the Glands, is shook about, ground, and divided into yet smaller Parts, until it acquires such a Fineness as is requisite, together with the glandulous Fluids, and Liquors drank down, for the composing that which is called Chyle. But here is to be taken Notice, that the Parts of the Food are not dissolved into essential Parts, as some call them, or Elements, whether chymical, or any other, by the Assistance of any Ferment in the Stomach; that is to say, by a Separation of some Parts of different Kinds combin'd together, and an Union of other Parts be-

before in Separation, as it happens in all Fermentation of Wine, where-
in tartarous Particles, before united
with others, are separated ; and Par-
ticles of Phlegm and Oil, before in
Separation, are brought nearer to-
gether, and form a true Spirit. But
by the Concoction that is perform'd
in the Stomach, the Food is divided
into integral Parts, not differing
from what they were before, but in
obtaining lesser Bulk ; in the same
Manner altogether as Coral is
ground upon a Marble with Water,
and reduced into an impalpable
Powder, whose Parts are only small
Pieces of Coral, and not any Prin-
ciples into which Coral is resolved.
For the Proof of this, there is not
Need of any other Argument, than
that in the Stomach and Intestines
of the larger Fish, which devour
and digest the lesser, the Chyle is
nothing else but a Liquor fill'd with
the Fibres of the devoured Fish, as
is easy to be discerned with a Mi-
croscope ; or the small Parts of
Fibres no Way differing from the
larger, (that is, indigested Pieces of
Flesh) but in Magnitude. The
Chyle thus elaborated in the Sto-
mach by its alternate Contractions,
and the Force of the neighbouring
Muscles, is thrown out into the Inte-
stines ; at its Entrance into which, it
is diluted with a Bile and pancrea-
tick Juice : Which Liquors undergo
no Manner of Effervescence with
the Chyle, or with one another, but
are smoothly and quietly mixed
therewith, and with each other, as
appears by many Experiments ; but,
by their Means, the Chyle is ren-
dered more fluid. Hence it is, that
the Parts of the Food, in some
Measure dissolved by the Motion of
the Stomach, but not sufficiently
separated from each other, through
Want of a due Quantity of Fluid,

every one yet being, in some Mea-
sure, in Contact with one another,
pass over the *Pylorus* into the Guts ;
and when these greater or less di-
gested Particles cannot, by reason
of their Magnitudes be strained in
any considerable Quantity into the
Lacteals, they are yet thrust fur-
ther into the intestinal Tube, and
therein putrefy, since they are out
of the Verge of Circulation, which
commences at the Lacteals : For
all Things, as the Flesh of dead
Creatures, Herbs, &c. which are
capable of Putrefaction out of the
Animal, are capable of Digestion
in it. Hence it follows, that Di-
gestion is much more effectually
and expeditiously performed in the
Day-time, or when we are awake,
than in the Night, or during Sleep ;
because, while we wake, we breathe
thicker, and the Diaphragm and
Muscles of the Abdomen, and e-
ven the whole Body is more exer-
cised, and the Stomach is oftener
compressed. It also follows, that
by gentle walking, or while we
exercise ourselves in any moderate
Motion, Digestion is more effectually
and expeditiously performed,
than while we sit in Idleness and
without Motion ; and still much
better, than when we sit hard at
Study, because by this the Mind is
so diverted, that our Respiration
then is rarer, even than in our
Sleep, and the Muscles are thereby
less contracted. And, that we di-
gest better in Winter than in Sum-
mer, is also a Confirmation hereof ;
because in the Winter, to drive a-
way the Sense of Cold, we are of-
tener put upon Exercises, and great-
er Activity of Body, than in the
Summer-Season : As likewise, be-
cause the Muscles and solid Parts
are more tense, and consequently,
stronger in their Contraction and

Attritions. But, as for any Ferment in the Stomach, whether it be Spittle or Serum, ouzing out from the Glands of the Stomach, it cannot contribute any Thing to the Digestion of the Food, any further than by softening it, whereby it is capable of being further divided. Neither do any Liquors flow into the Stomach, in order to promote Digestion; but Digestion, that is, the Motion of Swallowing, Chewing, and of the Stomach, are the Cause why these Liquors are press'd out, and that they drain into the Stomach. For, that those Liquors contribute nothing to Digestion, is manifest from hence, that if Herbs or Meat be mixed with them in any convenient Place, as warm as the Stomach, but without Motion, they will never be changed into Chyle; so that it is astonishing, that any should ascribe to the Serum of the Blood as it is excern'd by the Glands, a Faculty of changing solid Meats into a Form of Chyle, when it is evident, that Serum is not a fit *Mensstruum* for the Solution of Bread, Meat, or Herbs. But this whole Affair will be much better understood, from considering *Boyle's Machine* for Digestion, describ'd by *Papin*; (see *Digester*) wherein, without the Help of any Ferment, but, by the Assistance only of Warmth, and the Pressure of rarefy'd Air confin'd, Bones and Flesh, with the Addition of a small Portion of Water, are turned into a Jelly; where nothing is wanting to its being made real Chyle, but the rough Superficies of a Body to grind, and often shake it about.

The Chyle, being thus made, washes over the *Pylorus* into the intestinal Tube, where by its Peristaltick Motion (which see) and by the Pressure of the Diaphragm, and

the Muscles of the Abdomen, the thinner Parts are strain'd thro' the narrow Orifices of the lacteal Veins, while the grosser Parts continue their Progress downwards until they are quite ejected by Stool. What passes through the Lacteals is carry'd by them into the Glands of the Mesentery; where they receive a fine thin Lymph, from the Lymphaticks, whereby the Chyle is diluted so as to pass easier the rest of its Course: For beyond the first Glands they unite in larger Canals, and those in still larger, until at last it arrives to the common Receptacle, which is a kind of Basin formed for it by the Union of the lacteal and lymphatick Vessels. From thence in one Duct it ascends into the *Thorax*; and sometimes dividing about the Heart, it immediately unites again; and creeping along the Gullet, it passes on to the left Subclavian Vein, where by one or two Mouths it pours in its Contents, and there mixes with the venal Blood returning from all Parts of the Body.

But in the second Acceptation of this Term, wherein it is understood of the Blood's nourishing all the Parts of the Body, such Kind of Nutrition is performed by a secretory Duct, arising from the Termination of an Artery, and carrying a suitable Portion of the Blood to every Part to be nourished; so that every Point in the Body must be a Termination of a secretory Duct through which a proper Part of the Blood is brought, in order to supply that Part of the Body. For further Satisfaction herein, turn to *Accretion*, *Digestion*, and *Sanguification*.

Nyctalops, νυκταλωπία, is said of those who see better in the Night than Day-time.

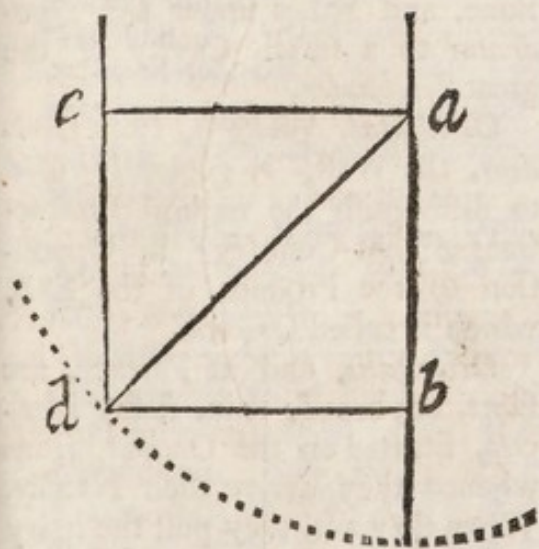
Nymphæ. See *Generation Parts of, proper to Women*.

O.

O*besity*. Fatness or Corpulency, from *Obesus*, or *Obesitas*.

Oblefion, from *ob*, against, and *laedo*, to hurt, is an Injury done to any Part.

Oblique, slantways, is a Term much used in Mechanicks, to signify Directions that deviate from perpendicular to parallel, the Percussions of all Bodies being much influenced, according to the Degree or Obliquity in which the moving Body is directed: a perpendicular Incidence (which see) giving the greatest Stroke, and such Strokes decreasing in Proportion to the moving Body's Deflection from such a Direction. The *Ratio*, which an oblique Stroke bears to a perpendicular one, may, by this Diagram, be easily understood to be, as the *Sign of the Angle of Incidence is to the Radius*. Let



ab be the Sine of any Body on which an oblique Force falls, with the Direction *da*; draw *dc* at

right Angles to *db*, a Perpendicular let fall from *d* to the Body to be mov'd, and make *ad* the Radius of a Circle: 'tis plain, that the oblique Force *da*, by the Laws of Composition and Resolution of Motions, will be resolved into the two Forces *dc*, and *bd*; of which *dc*, being parallel to *ab*, hath no Energy or Force to move that Body, and consequently, *db* expresses all the Power of the Stroke or Impulse on the Body to be mov'd: but *db* is the right Side of the Angle of Incidence *dab*; wherefore, the oblique Force *da*, to one falling perpendicularly, is as the Sine of the Angle of Incidence to the Radius. *Q. E. D.*

Obliquus major Musculus, the greater oblique Muscle; and the

Obliquus minor, the lesser; are described under *Eye*, which see.

Obliquus inferior, is a Muscle of the Head arising fleshy from the external Part of the spinal Process of the second *Vertebrae* of the Neck, close by the Origination of the *Rectus major*; and, being dilated into a fleshy Belly, passes obliquely to its Insertion at the transverse Process of the first, where the former Muscle begins. When this acts on either Side, the transverse Process of the first *Vertebrae* of the Neck is mov'd towards the Spine of the second; which hath given Occasion to some to reckon it amongst the Muscles of the Neck.

Obliquus superior, is a Muscle of the Head, which arises fleshy from the Back-Part of the transverse
Z Pro-

Process of the first *Vertebræ* of the Neck, and in its somewhat oblique Ascent becometh a fleshy Belly, and, lessening itself again, is inserted into the *Os Occipitis* laterally. By this, together with its Partner (they never acting separately) the Head is moved backwards on the first *Vertebræ*.

Obliquus descendens, is one of the first Muscles that appears upon the *Abdomen*. It takes its Origination from the two last true, and the five false Ribs, by five or six Digitations, the four uppermost of which lie between the Teeth of the *Serratus Anticus major*; its Fibres, descending obliquely, are inserted all along the *Linea Alba* under the *Musculi Recti*, to the upper and fore Part of the Spine of the *Ilium*, and to the fore Part of the *Os Pubis*. It has a large *Aponeurosis*, or tendinous Expansion, which covers both itself, and the *Musculi Recti*.

Obliquus ascendens, has its Fibres disposed in a contrary Manner, crossing the former obliquely; they arise with a large and fleshy Beginning from the Circumference of the *Ilium*, and from the *Os Pubis*. Above they are fixed to the cartilaginous Parts of the false Ribs, and they are inserted all along the *Linea alba*.

Obliquus Auris; see *Ear*. There are also

Oblique Muscles belonging to the *Eye*, which see under that Word.

Observation, in Medicine, requires the Observer to give an accurate History of the Disease he would describe, with Regard to its Causes, Nature, and Effects; to give an exact Account of the several Things which appeared either beneficial, or disadvantageous, which Distemper is either left to

Nature, or treated by the Rules of Art; and lastly, he ought to give the *Phænomena* which present themselves upon Dissection of the Body, if the Disease proves mortal.

Obstetrix, a Nurse, or Midwife.

Obstruction, signifies the blocking up of any Canal in the human Body, so as to prevent the flowing of any Fluid through it, on Account of the increased Bulk of that Fluid, in Proportion to the Diameter of the Vessel; and hence

Obstruents, are such Things as obstruct the Passages.

Obturator internus, is a Muscle that comes from the internal Circumference of the Hole that is between the *Ischium* and *Pubis*; and, passing through the Sinuosity of the *Ischium*, it is inserted into the Dent of that great *Trochanter*. Its Tendon lies between the *Gemini*; it turns the Thigh to the Outside.

Obturator externus, comes from the external Circumference of the same Hole as the former; it embraces the Neck of the Thigh-Bone, and passes under the *Quadratus* to a small Cavity of the great *Trochanter*.

Occidental, Western, from *Occidens*, the West, is generally used to distinguish the natural Productions of that Country, in Opposition to the Produce of the East, which is called *Oriental*.

Occipitalis, and its Partner, are short, but broad, thin, fleshy Muscles, situated on the *Occiput*, from whence they derive their Names. When they act, they pull the hairy Scalp backwards.

Occipitis. See *Cranium*.

Occiput, the hinder Part of the Skull. See *Cranium*.

Occult Quality, is a Term that has been much used by Writers that had not clear Ideas of what they undertook to explain; and which served, therefore, only for a Cover to their Ignorance. See *Quality*.

Occult Diseases, is likewise from the same Mint as the former, *occultus* signifying hidden; and therefore, nothing can be understood, when a Person speaks of an hidden Disease, but that it is a Disease he does not understand.

Oculares Dentes, the same as *Cynodentes*; which see, and also *Teeth*.

Oculi; Botanists sometimes use this in the same Sense as *Gemmæ*, Buds.

Oculist; one who professes to cure Distempers of the Eyes.

Oculorum Motores. See *Motorii*.

Oculus, the *Eye*; which see.

Odontagogos, *ὀδονταγωγός*, was antiently the Name of an Instrument to draw Teeth; one of which, made of Lead, *Forrestus* relates to have been hung up in the Temple of *Apollo*, denoting, that such an Operation ought not to be made, but when the Tooth was loose enough to draw with so slight a Force as could be apply'd with that.

Odontalgia, from *ὀδὸς*, *Dens*, a Tooth, and *ἀλγέω*, *doleo*, to be in Pain, is a Tooth-ach; and

Odontica, *Odonticks*, are Medicines against such a Pain.

Odontoides, from the former Derivation, and *εἶδος*, *Forma*, Shape, are such Processes of the Bones as resemble the Shape of a Tooth, as of the second *Vertebra*, &c.

Odontolithos, from the former Derivation, and *λίθος*, *Lapis*, a

Stone; is that stony Concretion which grows upon the Teeth.

Odoratus, and

Odoriferous, the latter from *Odor*, Smell, and *fero*, to carry; are such Things as are remarkable at a Distance by their Scent, but generally apply'd to Sweets.

OEconomy, from *οἶκος*, *Domus*, an House, and *νέμω*, *distribuo*, to distribute, is strictly, the Management of Family-Concerns; but, in a figurative Sense, is frequently enlarged, among other Things, to the Mechanism and Functions of an human Body: So that animal *OEconomy* includes all that concerns the human Structure in a State of Health.

OEdeema, from *οἰδέω*, *tumeo*, to swell, signifies properly any Tumor; but is now most commonly by Surgeons confined to a white, soft, insensible Tumor, proceeding from cold and aqueous Humors, such as happen to hydro-pick Constitutions. There is a Tumor somewhat more fleshy, and nearer to a *Sarcoma*, which *Severinus* and *Hildanus* doth describe, under the Name of *OEdeomesarca*.

OEsofagus, from *οἶσος*, *Vimen*, a Wicker-Basket, from some Similitude in the Structure of this Part to the Contexture of that, and *φαίω*, *edo*, to eat, is the Gullet; which is a long, large, and round Canal, that descends from the Mouth, lying all along between the Wind-pipe and the Joints of the Neck and Back, to the fifth Joint of the Back, where it turns a little to the right, and gives Way to the descending Artery; and both run by one another, till, at the ninth, the *OEsofagus* turns again to the left, climb over the *Aorta*, and descending above it, it pierces the Midriff,

and

and is continued to the left Orifice of the Stomach.

The Gullet is composed of three Coats. The first and outmost is only a common membranous Integument, which seems to be a Continuation of the *Pleura*. The second is thick and fleshy, and consists of two Orders of muscular Fibres, longitudinal and circular, the first covering the last; these thrust the Aliments down into the Stomach. In Brutes, because the Situation of the Neck conduces little to the Descent of the Aliments, therefore, these Fibres run in two close spiral Lines, which cross one another: But in Men, whose Position is erect, the very Gravity of the Aliments helps their Descent. The third and last lines the Cavity of the Gullet. It's composed of white and slender Fibres diversly interwoven. At its upper End, it is continued to the Membrane that covers the Mouth and Lips; therefore, in vomiting, these Parts are affected. Its lower End covers the left Orifice of the Stomach two or three fingers Breadth. The Surface of this Membrane is besmeared with a soft and slimy Substance, which probably comes from some small Glands that lie between this Coat and the second. The upper End of the Gullet is called *Pharynx*. It has two Pair of Muscles for its Motion; the first is the *Stylo pharyngæus*: This is a small and round Muscle, which arises fleshy from the Root of the *Processus Styloides*, and descending obliquely, it is inserted into the Sides of the *Pharynx*. When this Muscle acteth, it pulleth up and dilateth the *Pharynx*, in Deglutition. The second is the *Oesophagus*. Its Fibres

have several Directions; its superior Fibres arise from the *Processus Pterigoidæus* of the *Os Sphenoides*, and from the *Cornua* of the *Os Hyoides*, and run obliquely to the back Part of the *Pharynx*. The Fibres, which are below these, arise from the Sides of the *Cartilago Scutiformis*, and run transversely to the Middle of the back Part of the *Pharynx*, where both superior and inferior Fibres, from both Sides unite and form a tendinous Line. When this Muscle acts, it draws the back Part of the *Pharynx* to its fore Part; by which it not only straitens it, for the depressing of the Aliment, but it compresses also the *Tonsillæ*, which send out their Liquor which lubricates the Aliment, whereby it glides the more easily down into the Stomach. There are two lymphatick or vesicular Glands, which are tied on the Back-side of the Gullet about the fifth *Vertebra* of the Back, by the Branches of Nerves which come from the eighth Pair. These two Glands are like two Kidney-beans tied together; they receive Veins and Arteries from the *Coronariæ*, and they have lymphatick Vessels which discharge themselves into the thoracick Duct. *Bartholine* remarks, that these Glands sometimes swell so big, as to hinder the Descent of the Aliments into the Stomach.

The Gullet, at its upper End, receives an Artery from the *Aorta*, and it sends a Vein to the *Azygos*: At its lower End, it has an Artery from the *Cæliaca*, and it gives a Vein to the *Coronaria* of the Stomach. Its Nerves are from the eighth Pair. The Use of the Gullet is to carry the Meat from the Mouth into the Stomach, by means of the Muscles

Muscles of the *Pharynx* and fleshy Fibres of the *Gula*, which perform its peristaltick Motion.

OEsopus, *ἔσους*, is frequently met with in the antient Pharmacy, for a certain oily Substance, boiled out of particular Parts of the Fleece; as what grows on the Flank, Neck, and Parts most used to sweat.

Oestrum Veneris, the Heat of *Venus*, or Love: The *Clitoris* is thus called from the lascivious Titillations it is capable of.

Offa alba: *Van Helmont* thus calls the white Coagulation which arises from a Mixture of rectified Spirit of Wine and of Urine; but the Spirit of Urine must be distilled from well fermented Urine; and that must be well dephlegmated, else it will not answer.

Officinal, from *Officina*, a Shop; any Thing that is used in, or belonging to a Shop: Thus officinal Plants and Drugs are those used in the Shops.

Oleaginous, from *Oleum*, Oil and *ago*, to compel; is such a Substance as is oily, or of a Consistence approaching thereunto.

Olecranium, the same as *Ancon*, and *Anconæus*; which see.

Olfactorii Musculi, or *Nervi*; smelling Nerves. See *Nerve*.

Olivaria Corpora, are two Protuberances in the under Part of the Brain, placed on each Side the *Corpora Pyramidalia*, towards the lower End, having their Name from their Figure, which is like that of an Olive. See *Brain*.

Omasus. See *Abomasus*.

Omentum, the Cawl, called also *Reticulum*, from its Structure, resembling that of a Net. When the *Peritonæum* is cut, as is usual, and the Cavity of the *Abdomen* laid open, the *Omentum*, or Cawl presents itself first to View. This Mem-

brane, which is like a wide and empty Bag, covers the greatest Part of the Guts. Its Mouth is tied on the right Side to the Hollow of the Liver, on the left to the Spleen, backwards to the back Part of the *Duodenum*, and that Part of the *Colon* which lies under the Stomach, and forwards to the Bottom of the Stomach and *Pylorus*. Its Bottom is loose, and being tied to no Part, but floating upon the Surface of the Guts below the Navel, was the Reason why the Cawl was by the *Greeks* called *ἐπίπλοον*. Sometimes it descends as low as the *Os Pubis*, within the Productions of the *Peritonæum*, causing an *Epiplotele*.

Now the Cawl is a most delicate and fine double Membrane, interlarded, for the most part, with a great deal of Fat, which lines each Side of its Blood-Vessels. These are Veins from the *Portæ*, called *Gastro-Epiplois dextra & sinistra*, Arteries from the *Cæliaci*. The intercostal Nerve and the *Par Vagum* send it several Twigs of Nerves. All these Vessels, with some small Glands accompanying one another, spread their Branches very curiously upon the Cawl, and even to the minutest Twig; they run between two Lines of Fat, which are bigger or smaller, according to the Weight of the Cawl. It has been sometimes found to weigh five Pounds, but ordinarily it does not much exceed half a Pound. Where there are no Vessels, the Membranes of the Cawl are very fine and transparent. They give several Uses to the Cawl, as to cover the Bottom of the Stomach and the Intestines; that, by cherishing their Heat, it may promote Digestion, and help the Concoction of the Chyle; to strengthen and sustain the Vessels which go from the Spleen to the Stomach,

Stomach, Intestines, Pancreas, and Liver, keep a Store of the Fat, that it may be received by the Veins and Lymphaticks, for the Use we have spoken of; to grease the Superfices of the Guts, for facilitating their peristaltick Motion.

Omo-plata, or *Homoplatā*, from ὤμος, *Humerus*, the Shoulder, and πλάτος, *Latus*, the Side; is the same as *Scapula*, the Shoulder-Blade; which see.

Omphaloc'e, from ὀμφαλός, *Umbilicus*, the Navel, and κήλη, *Tumor*, a Swelling; is a Rupture of the Navel: For which the Term

Omphalos, is often used.

Omphacion, or *Omphacium*, ὀμφάκιον, was used for the Juice of four Grapes; and by some latterly is applied to that of wild Apples, or Crabs, commonly called Verjuice.

Opacity, and *Opaque*, from *opacus*, obscure, or dark; is a Quality in Bodies arising from the Curvity of their Pores, whereby they will not admit the Rays of Light thro' them, when held up against the Light, as transparent Bodies do. Sir *Isaac Newton* shews, that the Opacity of all Bodies ariseth from the Multitude of Reflexions caused by their internal Parts: And he shews also, that between the Parts of opaque and coloured Bodies, there are many Spaces either empty, or replenished with Mediums of different Densities; and that the true or principal Cause of Opacity is the Discontinuity of their Parts; because some opaque Bodies become transparent by filling their Pores with any Substance of equal, or almost equal, Density with their Parts. Thus Paper dipped in Water or Oil, Linnen-Cloth, oiled or varnished, and many other Substances soaked in such Liquors, as will in-

timately pervade their little Pores, become by that means more transparent than otherwise; as on the contrary the most transparent Substances may, by evacuating their Pores, or separating their Parts, be rendered sufficiently opaque, as Salts or wet Paper, by being dry'd, Horn by scraping, Glass by being powdered or flaw'd, Water by being formed into small Bubbles, either alone in the Form of Froth, or by shaking it together with Oil of Turpentine, or some other convenient Liquor with which it will not perfectly incorporate. But, however, to render Bodies opaque and coloured, their Interstices must not be less than of some definite Bigness; for the most opacous Bodies that are, if their Parts be subtilly divided (as when Metals are dissolved in acid *Menstruums*) become perfectly transparent. And on this Ground it appears, why Water, Glass, Salt, and some Stones are transparent, for they are full of Pores and Interstices, as other Bodies are; but yet their Parts and Interstices are too small to cause Reflexions in their common Surfaces: Wherefore white Metals become opaque, not from their Density alone, but from their Parts being of such a Bigness as fits them to reflect the White of the first Order.

Opener. See *Deobstruent*.

Operation: The Processes in Pharmacy, several manual Parts of Surgery, as also the Working or Efficacy of Medicines, are often thus termed.

Ophthalmia; an Ophthalmy is an Inflammation of the *Tunica Adnata* of the Eye, which is accompanied with redness, heat, pain, and swelling; and it rises from the Blood stagnating in the capillary Arteries. The Cure consists in the same Management,

nagement, as in all other Inflammations : Hence,

Ophthalmicks, are Medicines used in Distempers of the Eyes.

Opiates : This Name has by some Authors been given to all Medicines that have Opium in their Composition, as the officinal Capitals ; but it is more properly given to such Medicines as have no other Intention but to procure Sleep. See *Narcotics*.

Opodeldoch, is the Name of an antient compound Plaister, which hath undergone various Alterations, as it hath passed through the Hands of *Dispensatory* Writers ; and our *College* have now thought fit to give it a Place in their Emendation.

Optick Nerve. See *Nerve*.

Opticks, is a mathematical Science that treats of the Sight in general, and of every thing that is seen in direct Rays ; and explains the several Properties and Effects of Vision in general, and properly of that which is direct and ordinary : For when the Rays of Light are considered as reflected, the Science which reaches their Laws and Properties is called *Catoptricks* ; and when the Refraction of Rays is considered, and the Laws and Nature of it explained and demonstrated, the Science is called *Dioptricks*. So that *Opticks* comprehend the Whole ; of which *Catoptricks* and *Dioptricks* are two Parts. See *Vision*.

Orbicular Bone, is one of the Bones of the inward Ear, tied by a slender Ligament to the Sides of the *Stapes* ; thus called from its Figure, *Orbis* signifying round, like a Globe. Hence also

Orbicularis Musculus, which is a Muscle that draws the Lips together, and is the same as *Osculatorius*, the kissing Muscle, because it acts

at that time. It is also called *Sphincter Labiorum*.

Orbicularis Palpebrarum, is also a thin fleshy Muscle whose Fibres do circularly surround the Eye-lids, and act as the preceding. See *Eye*.

Orbit, signifies the Round of any thing, whether concave or convex ; but in Anatomy is most commonly used for the Cavity in which the Eye is placed.

Orbiter Externus. See *Maxilla Superior*, and *Head*, Holes in it.

Orexis, or *Orexia*. See *Anorexia*.

Organ, and

Organical Part, is that Part of an animal or vegetable Body which is designed for the Performance of some particular Action, in Opposition to Non-organical, which cannot, of itself, perform an Action. Thus the Organ of Sight is the Eye with all its Parts ; the Organ of Hearing, the Ear, &c.

Orgasm ; is an *Impetus*, or quick Motion of the Blood or Spirits, whereby the Muscles are convulsed, or move with uncommon Force, from what Cause soever it proceeds ; tho', by *ἔργασμα*, the Ancients generally understood, an ungovernable Desire of Coition, when the Seminal Vessels were so turgid, as not to contain their Contents from involuntary Emission.

Oriental, Eastern, any thing coming from that Part of the World.

Orthopnea, strictly signifies that Difficulty of Breathing, which arises from running or violent Exercise ; and whatsoever occasions the Blood to run slower through the Lungs, either by straitening the Canals, or thickening the Blood, or by hindering the Motion of the animal Spirits, so that they cannot elevate the Breast, or cause the Blood to be more rarefied, or more in Quantity, so that there is not sufficient Room

to receive it into the Vessels of the Lungs, must occasion this Distemper. See *Asthma*.

Orvietan, is used for a Medicine that resists Poisons, from a Mountebank at *Orvieto* in *Italy*, who first made himself famous by taking such Things upon the Stage, after Doses of pretended Poisons.

Os a Bone. See *Bone*.

Oscillation, is a swinging of a Pendulum, whence *Borelli, de Motu Animalium*, applies it to the Motion of an Animal that has some Resemblance thereunto.

Oscitation, is a slight convulsive Motion of the Muscles, which is commonly called Yawning or Stretching, as the beginning of an Ague-Fit.

Osculi, are any Openings of the Vessels; as

Osculum Uteri, is the Opening of the Womb.

Osculatorius. See *Orbicularis*.

Os Orbiculare. See *Ear*.

Os Tincæ. See *Generation Parts of, proper to Women*.

Ossa Innominata, are two large Bones situated on the Sides of the *Os Sacrum*; in a *Fætus* they may be each separated into three Pieces, which in Adults unite and make but one Bone, in which they distinguish three Parts. The first and superior Part is called *Os Ilium*; the Intestine *Ilium* liech between it and its Fellow. It is very large, almost of a semicircular Figure, a little convex and uneven on its external Side, which is called its *Dorsum*; and concave and smooth on its internal Side, which is called its *Spine*. It is joined to the Sides of the three superior *Vertebræ* of the *Os Sacrum* by a true Suture;

It is larger in Women than in Men.

The second is the *Os Pubis*, which is the inferior and Forepart of the *Os Innominatum*; it is united to its fellow of the other Side by an intervening Cartilage, by which means it makes the Forepart of the *Pelvis* or *Basin*, of which the *Os Sacrum* is the Backpart, and the *Iliæ* the Sides.

The third is the inferior and posterior, called *Ischium* or *Coxendix*; it has a large Cavity called *Acetabulum Coxendicis*, which receives the Head of the Thighbone: The Circumference of this Cavity is tipt with a Cartilage called its *Supercilium*, where it joins the *Os Pubis*; it has a large Hole called *Foramen Ischii & Pubis*, about the Circumference of which the Muscles called *Obturator internus* and *externus* arise: And at its lower End it has a large Protuberance upon which we sit, and from whence the Benders of the Leg arise. And a little above this, upon its Hinder-part, it has another small acute Process, betwixt which and the former Protuberance lies the *Sinus* of the *Ischium*, thro' which the Tendon of the *Obturator internus* passes.

Ossa Spongiosa. See *Ethmoides*.

Ossification, is said of the Bones as in Children they harden from a softer cartilaginous Substance into one of the former Texture.

Osteologia, Osteology from *ὀστέον*. *Os*, a Bone, and *λέγω*, *narro*, to describe; is a Discourse or Description of the Bones.

Ova, Eggs;

Ovarium, and Ovary; and

Oviducts, the same as Fallopian Tubes. See *Generation Parts of, belonging to Women*. Hence

Oviparous,

Oviparous, from *Ovum* an Egg, and *Pario*, to bring forth, are all such Creatures as lay Eggs, and are hatched from thence.

Ovum Philosophicum, or *Chymicum*, is a Glass Body round like an Egg.

Oxycrate, from *ὄζος*, *Acetum*, Vinegar, is a Mixture of Vinegar and Water.

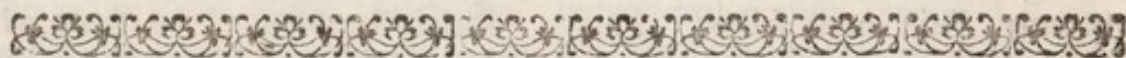
Oxycroceum, from the same as the foregoing, and *κρόκος*, *Crocus*, Saffron, is a Plaster in which there

is much Saffron, but no Vinegar necessary, unless in dissolving some Gums.

Oxymel, from the foregoing Derivation, and *Mel*, Honey, is a Mixture of Vinegar and Honey.

Ozæna, from *ὄζω*, *olfacio*, to smell rank, is an Ulcer in the Inside of the Nostrils that gives an ill Stench.

Oze, is sometimes used to signify a Stench in the Mouth.



P.

P. Is put in Prescription for a *Pugil*, which is the eighth Part of an Handful.

P. Æ. Is used to signify *Partes Æquales*, equal Parts of any Ingredients.

P. P. Is sometimes used in Prescription for *Pulvis Patrum*, Jesuits-Powder, so called, because they first brought it into Europe.

Pabulum, signifies, strictly, the Food of Cattle, but is by *Willis*, and some late Writers, applied to such Parts of our common Aliment, as is necessary to recruit the animal Fluids, as likewise to any Matter that continues the Cause of a Disease.

Pain. It is commonly laid down, that Pain is a Solution of Continuity, but this is not a good Definition; for it is the Sense of a more violent and sudden Solution of Continuity made in the Nerve, Membranes, Canals, and Muscles. The Causes, therefore, of Pain, may be all such Things as are able to distract the Parts of the Nerves or Membranes from one another.

But there is nothing in the Compass of Nature which cannot do that, with whatsoever Figures or Properties it is endu'd: For, since somewhat may always be apply'd or added to another Body, such a Body may increase into a Bulk too big to flow through a Canal of a given Diameter, and which will, therefore, require more Room: Wherefore, whilst the Sides of a Canal are thrust outward, beyond what they are used to be, that is, the Parts composing those Sides, before contiguous, being loosened and moved away from one another; if that Body strikes into those Sides with a brisk *Impetus*, and that *Impetus* is continually renew'd, the Solution will be considerable, or the *Nisus* towards a Solution violent, or there will be Pain. Wherefore, the constituent Parts of Fluids being sufficiently augmented in Dimension, and propelled with a continually repeated *Impetus* against any Canal of our Body, may occasion that Solution, in which consists the Origin of Pain.

Pain. For it all comes to the same, whether some Parts are added to a Body, or the Parts of that Body are, by any Cause whatsoever, separated to so great an Interval, towards the Sides of a Canal, as to constitute a Dimension equal to that which arose from the Addition of a new Part: for the Bulk may so far increase both Ways, that the natural Capacity of the Canal is not big enough to contain it without some violent Dilatation, and a Distraction of the Fibres constituting their Coats; and consequently, Pain must follow. Further, as there may be always somewhat added to another Body, so from any Body may somewhat be also taken away; a Body so diminished in Dimension, and impell'd with a considerable *Impetus*, breaks thro' the Interstices of those Fibres, where it is less than the Capacity of such Interstices, and mov'd obliquely; because the Superfices of the Fibres are not wont to be contained under geometrical right Lines, but to have Particles standing out and prominent; and these it divides from one another. And thus any Body of whatsoever Figure may occasion in us Pain, so that it be big enough to distend the Vessels beyond their wonted Measure, or small enough to enter the Pores in the Sides of a Canal, with an *Impetus* in the Manner intimated. And what is thus advanc'd, with Relation to Things within the Vessels, may be easily apply'd to others out of the Vessels.

Palatum, the Palate. See *Mouth*.

Palati Os. See *Maxilla Superior*.

Palatinæ Glandulæ, so *Steno* calls those of the Tonsils, and Parts adjacent.

Palato-Salpingæus, called also *Musculus Tubæ Novus Valsalvæ*, and

Pterygostaphilinus Externus, is a Muscle arising broad and tendinous from the Edge of the lunated Part of the *Os Palati*, several of its Fibres being spread upon the Membrane that covers the *Foramen Narium*; then growing into a small thin Tendon, it is reflected about the Hook like the Process of the inner Wing of the *Processus Pterygoideus internus*, and is inserted carnos into all the Membranous, fleshy, and cartilaginous Parts of the Tube. It's used to dilate and keep open this Canal.

Palato-Staphilinus, the same as *Pterygostaphilinus internus*; which see.

Palindromia, from *παλινδρομῖα*, *recurro*, *regurgito*; is used by *Hippocrates* for any Regurgitation of Humors to the more noble Parts: and sometimes for the Return of a Distemper.

Palliation, is quieting Pain, and sending against the worst Symptoms of a dangerous Distemper, when nothing can be directly levell'd at the Cause. And,

Palliatives, are Medicines for the foregoing Purposes.

Palma, is the Inside of a Man's Hand. Hence,

Palmaris, is a Muscle that arises from the internal Exuberance of the *Humerus*, and by a long and slender Tendon it passes above the annular Ligament to the Palm of the Hand, where it expands itself into a large *Aponeurosis*, which cleaves close to the Skin above, and to the Sides of the Bones of the *Metacarpus* below, and to the first Phalanx of the Fingers; by which Means it makes four Cases for the Tendons of the Fingers to pass through. This Muscle is sometimes wanting, but the *Aponeurosis* is always there.

Pal-

Palmaris Brevis, is a Muscle that lies under the *Aponeurosis* of the first. It ariseth from the Bone of the *Metacarpus* that sustains the little Finger, and from that Bone of the *Carpus* that lies above the rest. It goes transversly, and is inserted into the eighth Bone of the *Carpus*. The first assists the Hand to grasp any Thing closely, and the second makes the Palm of the Hand concave.

Palpebræ, Eye-lids. See *Eyes*.

Palpitation, is a beating or panting, and often used for that Alteration in the Pulse of the Heart, upon Frights or any other Causes, as makes it felt; for the Constancy of a natural uniform Pulse goes on without Distinction.

Palsy, is a Privation of Motion, or Sense of Feeling, or both, proceeding from some Cause below the *Cerebellum*, joined with a Coldness, Softness, Flaccidity, and at last, wasting of the Parts. Hence it appears, that the Brain, or *Cerebellum*, is not affected with a Palsy; and therefore, the internal Senses, and the Motion of the Heart and *Thorax*, or the Pulse and Respiration, are not necessarily interrupted or destroy'd. If this Privation be in all the Parts below the Head, except the *Thorax* and Heart, it is wont to be called a *Paraplegia*; if in one Side only, it is called *Hemiplegia*; if in some Parts only of one Side, it is wont to be called a particular *Paralysis*.

There is a threefold Division of a Palsy worth taking Notice of in Practice; the first is a Privation of Motion, Sensation remaining. Secondly, A Privation of Sensation, Motion remaining. And, Lastly, A Privation of both together. The first is, when the Motion

of all the Parts below the Head, or of some of the Parts only, except that of the *Thorax* and Heart, is taken away, the Sense of Feeling yet remaining. And that the Cause of this may be the more intelligible, we may remember, that by the tying a Ligament on any Artery, the Motion of that Part is destroy'd, to which that Artery is accustomed to convey the Blood: From whence it follows, that the Blood, or some Parts of the Blood, are required for muscular Motion. But concerning an Apoplexy, (which see) it was remark'd, that an Influx of the nervous Fluid into the Muscles was likewise necessary to the Motion of its Parts: From whence it is easy to conclude, that, to the Production of Motion in any Part, there is necessarily required a free Passage both of the Blood and animal Spirits into the Muscles allotted for the Motion of that Part, that is, a Concourse of both Fluids. But this Proposition is also very certain, and necessary to be known, in order to the right understanding of this Affair:

Besides the Conflux of the nervous and arterial Fluids for the moving any Parts, there is also required a sudden Rarefaction, or an Expansion of them into Bubbles every Way, either of one, or other, or of both, as they flow into the Muscle. And,

No Part can be moved, unless the Muscle belonging to that Part be contracted in its Length: But a Muscle cannot be contracted in Length, unless it be stretched in Breadth, and unless the solid Part of a muscular Fibre is suddenly forced outward from the Quantity of Liquors flowing thereinto.

Here-

Hereupon a Reason may be given how a *Paralysis* without Motion is brought about. First of all, by too much Humidity stretching the Fibres in Length. Secondly, from cold Things that thicken the Juices, and hinder Rarefaction. Thirdly, from external Compression. Fourthly, from hot Things which straiten the supple Membranes and Vessels. All these Causes affect the Blood or Muscles; the former by thickening it, so that it cannot suddenly rarefy; and the latter, by relaxing them into too great a Length with too much Moisture, or contracting them into too narrow Dimensions by too much Heat. But the Sensation may yet be preserved, because, notwithstanding all these Hindrances, the animal Spirits and Nerves may not be touched, or, as yet, at all affected. The Causes of the second are all those Things which so far thicken the animal Spirits in the Nerves, arising below the *Cerebellum*, that though indeed they may flow into the Muscles through the Nerves, and there, by the Occurrence of some Liquor secreted from the Blood, rarefy; yet they cannot alone flow in such Quantities into the Nerves, as from a very slight Cause to undulate in Waves: Whence Sensation will cease without losing the Motion of the Part. The Causes of this Kind are also whatsoever render those Nerves more lax and moist, and so less apt for lively Vibrations; the animal Spirits flowing in the mean time into the Muscles: from whence Motion is performed without Sensation. From the Explanation of these two Kinds, it may be easy to understand the third, in which both Sense and Motion are lost, because this is compounded of the

other two; and the Cure is to be circumstanced accordingly.

Panacea, was a Term first given, by *Galen*, to some Medicines he had a great Opinion of; the Word coming from *πᾶν*, *omnis*, all, and *ἀνέμαι*, *sano*, to make well: And many Medicines, in the Chymical Pharmacy particularly, are now in the Shops under his Name, as the Conceits of their Inventors have been pleased to fix it upon them; but there has been so much Deceit herein, that the Term has almost lost its Credit.

Panatella and *Panada*, or *Panata*, *Panade*, a Mixture of Bread and Water boil'd together, probably thus called, from *Panis*, Bread.

Panchrestos, or *Panchreston*, is of the same Signification as *Panacea*, but little used.

Panchymagoga, from *πᾶν*, *omnis*, all, *χυμός*, *Succus*, Humour, and *ἄγω*, *duco*, to lead or draw; is ascribed to such Medicines as are supposed to purge all Humors equally alike: but this is a Conceit now not minded.

Pancreas, from *πᾶν*, *omnis*, all, and *σπᾶς*, *Caro*, Flesh, *quasi* All-Flesh. The *Pancreas*, or Sweatbread, is a Gland of the conglomerate Sort, situated between the Bottom of the Stomach, and the *Vertebrae* of the Loins. It lies across the *Abdomen*, reaching from the Liver to the Spleen, and is strongly ty'd to the *Peritonæum*, from which it receives its common Membranes. It weighs commonly four or five Ounces. It is about six Fingers Breadth long, two broad, and one thick. Its Substance is a little soft and supple. Every little Gland has a small excretory Vessel, which, uniting

ting all together, from one common Duct about the Bigness of a Quill, clear and transparent, like to a lymphatick Vessel. This Duct runs all along the Middle of the *Pancreas*, and opens into the Cavity of the *Duodenum*, at its lower End, where there is a little Caruncle at its Orifice. Sometimes it joins the *Ductus communis Chole-docus*, and then both open at one Orifice into the *Duodenum*. This Canal was first found by *Virtungius*, and is called *Ductus Pancreaticus Virtungii*.

The *Pancreas* receives Arteries from the *Cæliack*. Its Veins carry their Blood into the splenick Branch of the *Vena Portæ*, and the Intercoastal furnishes it with Nerves. The use of the *Succus Pancreaticus* is to dilute the Chyle with the Liquor that is separated in the Glands of the Guts, that it may the more easily enter the Mouths of the lacteal Vessels.

Pancreas Affellii. See *Mesentery*, and *Lacteal Veins*.

Pandiculation, is the Restlessness, Stretching and Uneasiness that usually accompany the cold Fit of an intermitting Fever.

Panick. This Term seems to have its Original from the Stratagem of a great General, whose Name was *Pan*, and who contrived with a few Men to make such Shouts, where the Disposition of the Country and some Rocks favoured the sound, as made their Numbers appear so large to the Enemy, as terrify'd them from an advantageous Encampment: whence a false Fear ever since is called a *Panick*.

Panicula, the Panicle, is a Term in Botany, for a soft woolly Beard or String, on which the Seeds of some Plants do hang pendulous,

as in Reeds, Millet, &c. Whence such are called.

Paniculated Plants.

Panniculus, signifies the same as *Membrana*, which see. Whence,

Panniculus Adiposus, is the same as *Membrana Adiposa*. And,

Panniculus Carnosus, the same as *Membrana Carnosa*. And,

Panniculus Nervosus, the same as the preceding.

Papilionaceous. The Flowers of some Plants are thus called by Botanists, which represent something of the Figure of a Butterfly with its Wings display'd. And here the *Petala*, or Flower-Leaves, are always of a diform Figure. They are four in Number, but joined together at the Extremities: One of these is usually larger than the rest, and is erected in the middle of the Flower, and by some called *Vexillum*. The Plants, that have this Flower, are of the leguminous Kinds, as Pease, Vetches, &c.

Papillæ Cordis. See *Heart*,

Papillæ Intestinorum. See *Intestines*.

Papillæ Pyramidales. See *Lingua*.

Papillæ Renum. See *Kidnies*. Many other Parts of the Body are also called *Papillæ*, from their Likeness to a Nipple or Teat, this Word signifying so much.

Pappus, in Botany, is that soft light Down, which grows out of the Seeds of some Plants, such as Thistles, Dandelyon, Hawkweeds, &c. and which buoys them up so in the Air, that they can be blown any where about with the Wind. And therefore, this distinguishes one Kind of Plants which is called *Papposa*, or *Pappi Floræ*.

Par Vagum. See *Nerve*.

Paracentesis, from *παράκεναι*, *compungo*, to pierce through, is that

that Operation, whereby any of the *Venters* are perforated to let out any Matter, as Tapping in a Tympany.

Paracmaſticos, and *Paracme*, *παρακμαστικός*, *παρακμή*, expreſſes the Declenſion of any Diſtemper; as alſo, according to *Galen*, that Part of Life where a Perſon is ſaid to grow old, and which he reckons from 35 to 49, when he is ſaid to be old.

Paracynanche, the ſame as *Angina*, which ſee.

Paragoge, ſignifies that Fitneſs of the Bones to one another, as is diſcernible in their Articulation; and Bones which are thereby eaſier of Reduction, when diſlocated, are by *Hippocrates* called *παρὰ γότρεα*.

Paralyſis. See *Palfy*.

Paraphimosis, from *παρὰ*, *circum*, about, and *φίμω*, *obligo*, to bind; is a Fault in the Yard, when the Prepuce is ſo ſtrait, that it will not draw over the Glands: And this happens ofteneſt in Venereal Diſorders, where the Humours of a Gleet are ſo ſharp as to cauſe this Contraction. There is ſometimes a Neceſſity, in this Caſe, to ſnip, or cut it open, otherwiſe the Humors will be pent up under it, and do a great deal of Miſchief.

Paraphrenitis, is a Diſtemper of Kin to the Pleuriſy, and ſeated in that Part of the *Pleura* which ſurrounds the Diaphragm, or *Septum medium*.

Paraplegia. See *Palfy*. And, *Paraplexia*, is the ſame.

Paraſtata. See *Generation Parts of*, proper to Men, and *Epididymis*.

Paragoricks, from *παρὰ γοργέω*, *mitigo*, to aſſuage: All Opiates are thus called. See *Narcoticks*.

Pararythmos, is a Species of the *Arythmos*, and expreſſes a Pulſe not ſuitable to the Age of a Perſon.

Parenchyma, from *παρεγχύω*, *transfundo*, to ſtrain through. The Antients uſ'd to imagine ſome Parts in an human Body meer Fleſh, in Oppoſition to vaſcular, and thro' which ſome Humors were ſtrain'd, as Water ſoaks thro' Earth: but better Information has taught otherwiſe. Alſo,

Parenchymata, from the ſame Derivation, ſignifies all the *Viſcera*, becauſe they are looked upon as ſo many Strainers to the Humors which paſs thro' them.

Parietale Os. See *Cranium*.

Paronychia, from *παρὰ*, *circum*, about, and *ὄνυξ*, *Unguis*, the Nail; is a Tumor upon the End of a Finger, commonly called a Felon, or Whitloe. A Plant is alſo thus called, from its ſuppoſed Vertues in ſuppurating and cleaning ſuch Tumors; and by the common People Whitloe-Wort, or Graſs.

Parotides, Glands behind the Ears; from *παρὰ*, and *ὤς*, *Auris*, the Ear: ſee *Mouth*. When theſe Glands tumify and ſuppurate, which they are moſt apt to do in malignant Caſes, the Swellings take the ſame Name.

Paroxyſm, from *παροξύνω*, *exacerbo*, to aggravate, is the Height or Fit of any Diſtemper that returns at certain Times.

Particle. This is the ſame as *Atom* or *Corpuſcle*; which ſee. But it may be neceſſary here further to recite ſome of thoſe Laws by which thoſe ſmall Portions of Matter are influenced in their Occuſions and Motions, beſides what hath been already ſaid under the Word *Attraction*, which ſee. Sir *Iſaac Newton*, in his *Opticks*, has opened

opened a Way to determine the Bulk of the smallest Particles, and has demonstrated, beyond all Possibility of Contradiction, the Hardness of the Particles of the minutest Magnitudes, and even of those which constitute fluid Bodies collectively. And on the same Principles has Dr. *John Keil* taught us these further Properties of Matter when broke, or existing in the smallest Portions.

1. That the least Particle of Matter assignable may so fill any large assigned Space, that the Diameters of the Pores between its Parts may be all less than any given right Line, or, so that all the Parts of such a Particle shall be nearer to each other than any given right Line.

2. Two Bodies may be given equal in Bulk, but yet any how unequal in specifick Gravity, or in the Quantity of Matter in each; so that the Sums of the Pores in each shall be nearly equal. As for Instance, in a Cubick Inch of Gold, and another of Air, the Quantity of Matter in the former may be 20000 Times as great as that in the latter; yet the Vacuities in the Gold may be to those in the Air, as 999999 to 1000000, which is very near equal.

3. Those Particles which constitute Air, Water, or any other Fluid, if they touch one another, are not absolutely solid; but are compounded of other Particles, which do contain within them many Vacuities. And such Particles of Matter as are the least of all others, and which are perfectly solid and devoid of all interspersed Vacuities, may be called the first,

or primary component Particles of Matter, or Particles of the first Composition. Such *Moleculæ*, as are compounded of these first Particles only, may be called Particles of the second Composition. And such *Moles* as are compounded of these second *Moleculæ*, by several of them coalescing together, may be called Particles of the third Composition; and so on, to the last Composition of Particles of which Bodies are made, and into which they are primarily dissolved.

4. If a Particle of Matter touch any Body, the Force by which it tends towards that Body, or by which it adheres to it, is proportional to the Quantity of the Contact; for such Particles, as lie remote from the Place of Contact, add nothing to the Cohesion. And therefore according to the several Degrees or Quantities of the Contact of Particles, there will arise several Degrees of the Firmness or Cohesion of Bodies. And the greatest Force or Degree of Cohesion will be, when the Surfaces of the cohering Particles are perfectly plain; for there the Force, by which any one Particle adheres to another, will (*cæteris paribus*) be as the Parts of the Superficies in which they touch. And hence only can the Cause of the Cohesion of the Parts of Matter in solid and firm Bodies be solved.

5. Those Particles are most easily separated one from another, whose Contacts with other Particles are fewest and least; as will be the Particles of a spherical Figure. And from hence only can the true Cause of Fluidity arise.

6. If

6. If the Texture of a Body be such, that its Particles of the last Composition (Prop. 3.) can be mov'd a little from their primary State of Cohesion or Contact by some external Force, but yet so, that the Particles of the Body do not by such Force run into any new Contacts or Cohesions; then they will recover again their former Contacts by the Power of Attraction, or by a Force that will make them tend towards one another: And consequently, such a Body will, after the Force, recover again its former Figure, and Position of its Particles. And in this consists the Reason of Elasticity.

7. But if the Texture of a Body be such, that when its Particles are, by some external Force, remov'd from their former Contacts, they go immediately into others of the same Degree, that Body cannot recover its former Figure and Position of Parts. And this is the Texture of such Bodies as are soft.

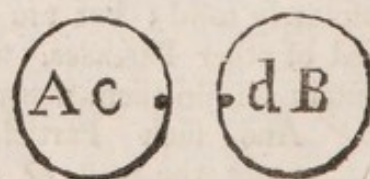
8. As Particles which are perfectly solid, will attract one another the most strongly; and as in all other Particles the Power of their Attraction is proportionable to their Density or Solidity, so the attractive Forces, even of Particles perfectly dense or solid, depend much upon their Figures. For if a small Particle of Matter be supposed to be formed into an indefinitely small Plate, of a circular Figure; and if another Particle be supposed to be in a right Line passing thro' the Centre of that Plate, and at right Angles to its Plane: then, if that Particle be distant from the circular Plate a 10th Part

of the *Radius* of that Circle, the Force by which that Corpuscle is attracted by the Plate is 30 Times less than if the attracting Matter had coalesced into a spherical Figure; so that the Virtue of the whole Particle had been diffused, as it were, from one physical Point. But yet, this circular Plate will more strongly attract the Particle, than any other Particle of the same Weight with it, that shall be form'd into a long and slender Cylinder.

9. Salts are Bodies, whose Particles of the last Composition are endued with a very great attractive Force; but yet between those Particles there are very many Pores, which are pervious to Particles of the last Composition of Water, which, being strongly attracted by the saline ones, do rush towards them, disjoin their Contact, and dissolve them.

10. A Body, specifically heavier than Water, may have its Magnitude so diminished, that it shall be suspended by, or swim in Water, and not be carry'd downwards by its own Weight; which is the Reason that small Particles of Salts and Metals will swim in such *Mensstruums* as will dissolve in those Metals, &c.

11. Greater Bodies attract one another with a less Force than lesser do: For the Force, with which



the Bodies *A* and *B* attract one another, exerts itself only in those Par-

Particles which are near one to another, the remote ones having no such Force; wherefore, there is no greater attractive Force required to move the Bodies *A* and *B* towards one another, than to move *c* and *d*. But the Velocity of Bodies, of the same Force, are reciprocally proportionable to those Bodies; wherefore, the Velocity, by which *A* tends towards *B*, will be to the Velocity with which the Particle *c*, apart from the Body, tends towards *B*, as the Particle *c* to the Body *A*; so much less, therefore, is the Velocity of the Body than that of *c* would be, if it were separated from it. From hence it comes to pass, that the Motion of the greater Bodies is naturally so slow, that it is usually retarded by an ambient Fluid, or other Bodies round about them. But in lesser Bodies this attractive Force is very active and vigorous, and is the Cause of a great many physical Effects.

12. The Particles of Matter, tho' they do not touch, may come so near one to another, that their mutual attractive Force shall much exceed the Force of Gravity.

13. If a Particle placed in a Fluid be equally attracted every where by all the ambient Particles of the Fluid, no Motion of the Particle will arise from thence; but if it be attracted by some Particles more, and by others less, it will move that Way where the Attraction is greatest, and the Motion produced will be answerable to the Inequality of the Attraction.

14. If a Body be placed in a Fluid, and its Particles do more attract the Particles of the Fluid,

than the Particles of the Fluid do one another; and if there be also in that Body any Pores, pervious to the Particles of the Fluid; then the Particles of the Fluid will soon diffuse themselves through those Pores. And if the Cohesion of the Parts of the Body be not strong, but that it may be surmounted by the *Impetus* of the Particles of the Fluid rushing upon it, and every Way into its Pores; there will arise from thence a Dissolution of that Body. Hence the Reason of the Dissolution of Bodies in *Mensstruums*: In order to which, three Things are always necessary. 1. That the Particles of the Body to be dissolv'd do more strongly attract the *Mensstruum* than those of the *Mensstruum* do one another. 2. That the Bodies have Pores pervious to the Particles of the *Mensstruum*. 3. That the Cohesion of the constituent Particles of the Body be not so strong, but that it may be broken by the violent Action of the Particles of the *Mensstruum* upon it.

15. If Particles mutually attracting each other, do also mutually touch one another, no Motion can arise; but if they are separated from one another a very small Distance, a Motion must arise from their mutual Attraction: Though, if they are removed from each other so far that they cannot attract one another more than they will the Particles of the Fluid in which they are, then on that Account also will no Motion be produced. From these Principles all the *Phænomena* of Fermentation, and all Effervescences do proceed. And hence appears the Reason why Oil of Vitriol, mingled with a little Water, hath so great an Ebul-

lition: For by the Infusion of the Water, the saline Particles are a little disjointed from their mutual Contacts; but since they do much more attract one another than they do the Particles of the Water, and since they are not every Way equally attracted, a considerable Motion must from thence arise. And from hence also may be seen the Reason, why so great an Ebullition arises from putting Filings of Steel into the former Mixture of Oil of Vitriol with a little Water; for the Particles of the Steel have a very great Degree of Elasticity, and thence a strong Resilition must arise. And from hence also it is, that some *Menstruums* act with a greater Force, and will sooner dissolve some Metals, when mingled with a little Water, than when pure, and without such Mixture.

16. If the Particles which do mutually attract each other have no Elasticity, then they are not reflected back from one another, but will form Aggregates of Particles, from whence Coagulation arises: And if these Aggregates exceed in specifick Gravity the Weight of the Fluid, and are large enough, a Precipitation will succeed; tho' a Precipitation may also arise from the specifick Gravity of the *Mensstruum* being diminished or increased.

17. If the Figure of Particles mutually attracting each other, when swimming in a Fluid, be such, that there is a greater attracting Force in some of their given Parts than in others, as also a greater Contact there; then those Particles will coalesce into Bodies having given Figures: And this

Way Crystallization arises; and, from the Figures of the Crystals given, Geometry will determine the Figures of the component Particles.

18. If, between two Particles of a Fluid, another shall interpose, whose two opposite Faces or Sides, have very great attractive Forces; this interposing Particle will glew or fasten the other two to itself; and when this is done throughout the whole Fluid, that Fluid will be frozen, or turn'd into Ice.

19. If a Body of some Bulk emit a large Quantity of *Effluvia*, and the Particles of such *Effluvia* have a very great attracting Force, then will these *Effluvia*, when they come near any lesser or lighter Body, by their attracting Force, surmount the Gravity of those Bodies, and lift them up to the Bodies from whence they flow; and since the *Effluvia* are much more copious and thick at lesser Distances from the emittent Body, than at greater, the light Body will be attracted by still more and more dense *Effluvia*, and, at last, be brought to adhere to the emittent Body. And this Way most of the *Phænomena* of Electricity may be solved. See *Cohesion*.

Partus, Delivery. See *Fætus*.

Passive Principles, are such as the Chymists mean by Earth, &c. but their Distinction is useless, because in all Matter there is such a Principle; so that what one seems to have, in Activity or Inactivity, more than another, arises only from their different Modification. See *Vis Inertiæ*.

Passulatum, is a Term given by Dispensatory Writers to some Medicines.

cines, wherein Raisins are the chief Ingredient, as the *Electuarium Pasfulatum*, &c.

Pastillum, a little Lump of Paste, or Ball, made to take like a Lozenge.

Patella, the Knee-pan : This is a little round Bone about two Inches broad, pretty thick, a little convex on both Sides, and covered with a smooth Cartilage on its Fore-side ; it is soft in Children, but very hard in those of riper Years : It is called also *Mola*. Over it passes the Tendon of the Muscles which extend the Leg, to which it serves as a Pulley for facilitating their Motion, by removing their Direction from the Centre of Motion.

Pathema, from πάθημα, *Affectus Animi*, Passion, or Affection ; hence

Pathetick Nerve ; see *Nerve*, and

Pathognomonick Signs, from the former, and γινώσκω *cognosco*, to know, are such Signs of a Disease as are inseparable, telling the Essence or real Nature of the Disease : And

Pathology, from the former, and λέγω, *narro*, to relate, is that Part of Medicine which relates to the Distempers, with their Differences, Causes, and Effects, incident to the human Body.

Patientiae Musculus, the Muscle of Patience, thus called from its great Service in Labour ; it is the same as the *Levator Scapulae*, which see.

Pecquet's Duct. See *Ductus Thoracicus*.

Pectineus Musculus, is, according to *Riolanus*, that Part of the *Triceps*, which arises nearest to the Cartilage of the *Os Pubis*.

Pectinis Os, the same as *Os Pubis*. See *Ossa Innominata*.

Pectoralis Musculus, is a Muscle that moves the Arm forward ; it ariseth by a fleshy and semicircular

Beginning from the inner Half of the *Clavicula*, from the six superior Ribs ; and it covereth a great Part of the Breast, and is inserted by a short, but strong and broad Tendon into the upper and inner Part of the *Humerus*, between the *Biceps* and *Deltoides*. Its Fibres, near their Insertion, decussate one another. Those which come from the *Clavicle* or first Ribs are on the lower Side of the Tendon ; and those from the inferior Ribs are on the upper Side of the Tendon.

Pectorals, are such Medicines as are good in Distempers of the Breast, from *Pectus*, the Breast.

Pectoris Os, the same as *Sternum*.

Pectus, the Breast, most strictly includes the whole Cavity, commonly called by Anatomists, *The Middle Region* ; but by some Writers it is more restrained to particular Parts of that Division.

Pediculation, *Morbus Pedicularis*, by the Greeks *Φθειρίασις*, is a particular Foulness of the Skin very apt to breed Lice ; and is said to be the Distemper of the *Egyptians*, which we read of among the Plagues with which God punished that People.

Pediculis, among Botanists, signifies the Stalk or Stem upon which grows the Leaf, Fruit, or Flower of any Plant.

Pediluvium, from *Pedes*, the Foot, and *lavo*, to wash, is a Bath for the Feet.

Pelican, is an Instrument to draw Teeth with ; also a Chymical Vessel.

Pellicle, is a Film or Fragment of a Membrane, from

Pellis, the Skin, or Hide of any Creature.

Pelvis, signifies a Basin : For which Reason several Cavities in the Body are called by this Name ; as the lower Part of the *Abdomen*, the Hollow of the Kidneys, &c.

Penetrating, is said of any thing subtle and piercing.

Penetration of Dimensions, is a physical Possession of the same Place by two Bodies, so that the Parts of the one do every where penetrate into, and adequately fill up the Dimensions or Places of the Parts of the other, which is manifestly impossible, and contradictory to Demonstration.

Penicilla, is a Lozenge made round by rolling; the same as *Turundula*: From *Penicillus*, a Pencil, which it resembles in Shape.

Penidium, a Kind of clarified Sugar, with a Mixture of Starch, made up into small Rolls.

Penis. See *Generation Parts of, proper to Men*.

Penis Cerebri, the same as *Conarion*. See *Brain*.

Penis Muliebris, the same as *Clitoris*. See *Generation Parts of, belonging to Women*.

Pennata, winged, from *Penna*, a Wing; amongst Botanists, are those Leaves of Plants as grow directly one against another on the same Rib or Stalk; as those of Ash, Wall-nut Trees, &c.

Penfile, is said of some Warts, Excrescencies or Tumors, which hang by a small Root, as if easy to come off.

Pentapharmacum, from πέντε *quinque*, five, and φάρμακον, *Remedium*, Remedy; is any Medicine consisting of five Ingredients.

Pepasmos, πεπασμός, the same as *Concoction* or *Maturation*; whence

Pepticks, are such things as promote *Concoction*.

Peracute, very sharp; Diseases are thus called when greatly inflamed or aggravated beyond measure.

Percolation, straining through, from *per*, through, and *colo*, to

strain: It is generally applied to animal Secretion, from the Office of the Glands, resembling that of a Strainer, in transmitting the Liquors that pass through them.

Per deliquium, by melting; as Salt of Tartar, dissolved in the Air, is called Oil of Tartar *per deliquium*, &c.

Per descensum, by descent, is a particular Manner of Distillation.

Perennial, strictly signifies any thing which lasts all the Year, the Word importing only so much; from *per* and *annus*; as those Vegetables which shed not their Leaves in the Winter, commonly called *Ever-Greens*: but by some Writers it is used much in the same Sense as continual, and applied to Fevers which have no Intermissions.

Perfection, is often used for that highest or best State, to which any natural Productions are capable of being brought, altho' even then they are far from Perfection in the most rigid Signification of the Word.

Perforans Musculus, is a Muscle that arises from the upper and back-part of the *Tibia*; and passing under the inner Ankle and Ligament that ties the *Tibia* and *Os Calcis* together, it divides into four Tendons, which passing the Holes of the *Perforatus* (the Word importing boring or passing through) are inserted into the third Bones of each lesser Toe. There is a *Massa Carnea* (a fleshy Substance) that arises from the *Os Calcis*, and which joins the Tendons of this Muscle where the *Lubricales* begin.

Perforatus Musculus, also called *Flexor Brevis*, is a Muscle that arises from the inner and lower Part of the *Os Calcis*, and is inserted by four Tendons into the second *Phalanx* of each Toe. These Tendons

dons are perforated, to give Way to the Tendons of the *Perforans*.

Perforation, is the passing any one Body through another, as a thing is boared thro'; but is chiefly used by Physicians for the penetrating by an Instrument into any of the great Cavities, as is the Operation of the *Paracentesis*. *Hildanus* also uses it for such Erosion of the Bones as eats them thro'; and some other chirurgical Writers, for the opening any Abscess by an Instrument.

Perianthium, from *περί*, *circum*, about, and *ἄθος*, *Flos*, a Flower, are those little green Leaves that encompass the bottom of a Flower.

Pericardium, from *περί*, *circum*, about, and *καρδία*, *Cor*, the Heart, is the Membrane encompassing the Heart. See *Heart*.

Pericarpia, from *περί*, *circum*, about, and *Carpus*, the Wrist; are Medicines that are applied to the Wrist.

Periclasia, *περίκλασις*, is a Term used by *Galen* for such a total Fracture of a Bone as quite divides it, and forces it out through the Flesh into Sight.

Pericranium, from *περί*, *circum*, about, and *Cranium*, the Skull, is the Membrane that covers the Skull. It is a very thin and nervous Membrane, of an exquisite Sense, which covers immediately, not only the *Cranium*, but all the Bones of the Body, except the Teeth; for which Reason it is also called the *Periosteum*, from the former Part as before, and *Os*, a Bone. It is tied to the *Dura Mater* by some Fibres which pass thro' the *Sutures* of the Skull. It receives Veins from the external *Jugulars*, Arteries from the *Carotides*, Nerves from the fifth Pair of the Brain, and from the second of the Neck.

Periergia, *περιεργία*, is any needless Caution or Trouble in an Operation, as *περιεργός* is one who dispatches it without any unnecessary Circumstances: Both the Terms are met with in *Hippocrates*, and others of the Greek Writers.

Perimeter, is the Compass or Sum of all the Sides which bound any Figure, of what Kind soever, whether rectilinear or mixed.

Perinyctides, are little Swellings like Nipples.

Period is the Space in which a Distemper continues from its Beginning to its Declension; and such as return after a certain Space, with like Symptoms, are called

Periodical Distempers.

Periosteum. See *Pericranium*.

Peripatetick Philosophy, is so named from those who studied and taught walking about, and who were therefore called

Peripateticks, from *περιπατέω*, *perambulo*, to walk about: the chief of these was *Aristotle*; and all who have since espoused his Doctrines have gone under the same Name, whether they have continued the Practice of Walking or not.

Periphery, from *περιφέρω*, *circumfero*, to surround, is the Circumference of a Circle or a Sphere.

Periphimosis. See *Phimosis*.

Peripneumonia, from *περί*, *circum*, about, and *πνεύμων*, *Pulmo*, the Lungs, or *πνέω*, *spiro*, to breathe; is an Inflammation of some Parts of the *Thorax*, that occasions Shortness of Breath; and it generally goes off by Expectoration, and such Means as have Success in Asthma's. Some Authors distinguish this into *vera*, the true, and *notha*, the spurious Peripneumony; but such Difference is of no great Moment.

Peripyema, *περιπύημα*, is a Collection of Matter about any Part, as

round a Tooth in the Gums; and

Perirrhœa, περιρροία is a Reflux of Humours from the Habit of the Body into any of the larger Emunctories for its Excretion, as in an hydropical Case of Water upon the Bowels or Kidnies, where it passes away by Urine or Stool.

Peristaltick Motion, from περι-στέλλω, *contrabo*, to contract: is that vermicular Motion of the Guts which is made by the Contraction of the spiral Fibres, whereby the Excrements are pressed downwards, and voided.

Peristaphylinus; there is the internal and external, being two Muscles of the *Uvula*, the one pulling it forwards, and the other backwards.

Peristerna, from περι, *circum*, about, and the *Sternum*, the Breast-Bone, expresses all on both Sides that Part.

Peristoma, or rather *Peristroma*, περι-στωμα, properly signifies any Covering; but is applied by *Pecquet* to the mucous Lining of the Intestines, the same which *Bilsius* calls *Muscum villosum*, *Bartholine*, *Crusta Membranacea*, and *De Graaf*, *Crusta Vermicularis*.

Perisyssole, περισυβολή, is a Pause or Intermision between the Systole and Diastole, which is by most denied to be perceived in well Persons; but when dying it is very sensibly felt.

Peritonæum, from περιτείνω, *circumtendo*, to stretch round. This lies immediately under the Muscles of the lower Belly, and is a thin and soft Membrane, which encloses all the Bowels contained in the lower Belly, covering all the Inside of its Cavity. Its external Superficies is unequal where it adheres to the transverse Muscles. The internal is very smooth and polished; it has

a number of small Glands that separate a Liquor which supplies the Intestines, and facilitates their Motion. When these Glands are obstructed, the *Peritonæum* grows thick, as may be seen in several Dropsies. The Upper-part of this Membrane covers the Midriff, to which it closely adheres: The Fore-part of it strikes to the transverse Muscles, and *Linea Alba*; the lower Part of it to the *Os Pubis*; and the Back-part of it to the *Os Sacrum*, and *Vertebræ* of the Loins. 'Tis a double Membrane, and contains in its Duplicatures the Umbilical Vessels, the Bladder, the Ureters, the Kidnies, and the Spermatick Vessels; to all which it gives a Membrane, as also to the Liver, Spleen, Stomach, Intestines, and Womb. Its external *Lamina* has two Productions, like to two Sheaths, which pass thro' the Rings of the oblique and transverse Muscles in the Groin, for the Passage of the Spermatick Vessels in Men, and for the round Ligaments of the Womb in Women. These Productions, being come to the Testicles in Men, dilate and form the *Tunica Vaginalis*. The internal *Lamina*, which is here very thin, having accompanied the external Productions a little Way, cleaves close to the Spermatick Vessels, and round Ligaments of the Womb. The *Peritonæum* has Veins and Arteries from the *Phrenicæ*, from the Mamillary, the Epigastrick, and often from the Spermaticks. Its Nerves are of those which are distributed in the Muscles of the *Abdomen*. It has likewise a few Lymphaticks, which discharge themselves into the Iliack Glands, By the Elasticity of its Fibres, it easily dilates and contracts in Respiration and Conception. If it breaks, it causes a Rupture either in the Groin

Groin or Navel. Its Use is to contain the Bowels of the *Abdomen*, and to give each of them an outer Coat.

Perizonia, *περίζωμα*, strictly signifies a Girdle; but by *Hildanus*, and some other chirurgical Writers, it is applied to such Instruments for supporting Ruptures, which we commonly call Trusses. Some also express by it the Diaphragm.

Pernio, is a Swelling in the Hands and Feet, from a thick Blood, with great Heat and Itching; and commonly called Chilblanes, and Kibes.

Perona, the same as *Fibula*, which see: From this Term comes that of

Peronæus Musculus, or *Peronæus Anticus*, a Muscle of the Leg that is joined to the *Posticus* in its Origination, which is from the upper and external Part of the *Fibula*; and running thro' the Channel which is in the external Ankle, it is inserted into the *Os Metatarsi*.

Peronæus Posticus, arises from the superior and external Part of the *Perone*, or *Fibula*; and descending, it passes thro' the Fissure of the external Ankle under the Soal of the Foot, to be inserted into the *Os Metatarsi* that sustains the little Toe. When this Muscle acteth, it pulleth the Foot outwards.

Perpetual Motion. See *Nature*, *Laws of*, Law II.

Per se, by itself, as some Things are drawn by Distillation without any additional Helps to raise them; as the genuine Spirit of Hartshorn, thus called in Opposition to that which is assisted with Quick-Silver.

Perspiration, a Breathing through. See *Baths*, and *Bathing*; *Cuticula*, and *Cutis*. And what flies off this Way, is called

Perspirable Matter. See as above.

Pes, the Foot. In this are distinguished three Parts, the *Tarsus*, *Metatarsus*, and Toes; which see.

Pessary, is an oblong Form of Medicine made to thrust up into the *Uterus*, upon some extraordinary Occasions.

Pestis, the Plague, is a Distemper communicated by Infection; which see, and Contagion. Whence

Pestilential Distempers, are those so communicated.

Petala, is a Term in Botany signifying those fine coloured Leaves that compose the Flowers of all Plants. Whence Plants are distinguished into *Monopetalous*, whose Flower is in one continued Leaf; *Tripetalous*, *Pentapetalous*, and *Polyptetalous*, when they consist of three, five, or many Leaves. See *Flower*. Hence

Petalodes, *πταλodes*, is by *Hippocrates* applied to an Urine which hath in it flaky Substances resembling Leaves.

Petechiæ, are Spots in the Skin like Flea-Bites, which come out in some Fevers. Whence

Petechial Fever, is the Spotted Fever, commonly so called.

Petrefaction, and

Petrification, from *Petra*, a Rock or Stone, and *facio*, to make; to turn into Stones. This is apply'd to some Substances, that by certain Springs or Liquor seem changed into Stone: But there is not in such Cases any real Transmutation of another Substance into Stone, but only Particles of Stone which before floated in a Liquor, lodged and deposited in the Pores of such Substances in such a Manner, and such Plenty, as to leave very little else than the Appearance of a Stone. This is also frequently done by an Incrustation of stony Particles upon

some Bodies, as Salts shoot upon and adhere to them.

Petrosum Os. See *Cranium*.

Phacodes, φακώδης, is used by *Hippocrates* for hypocondriacal Persons, whose Complexions are of a Lentil Colour, as *Upophacodes* is also applied by him to such as are approaching to such a Complexion; and

Phacoides, φακοειδής, any Thing in the Shape of a Lentil, as applied by *Vesalius* to the chrystalline Humour of the Eye. *Galen* also makes mention of

Phacoetiffana, φακοπιτισσάμη, a Liquor, or Decoction of Lentils, like what is now the common Practice in the Country of boiling Tares in Drinks for raising the Small pox, and the like Uses.

Phalanx, was first applied to a Rank of Men in Battalia, and is now by Anatomists used for the small Bones of the Fingers; which see under *Digitus*.

Phænomenon, from φαίνω, *appareo*, to appear; is any natural Representation or Appearance.

Phagedæna, from φάγω, *edo*, or *rodo*, to eat or corrode, is such an Ulcer where the Sharpness of the Humors eat away the Flesh: And hence

Phagedenic Medicines, are those which eat away fungous or proud Flesh.

Pharmacum, *Remedium*, any Medicine. Hence

Pharmaceutica, is that Part of Physick which teaches the Use of Medicines; and

Pharmacia, is the Art of making Medicines; as is also

Pharmacopœia, and

Pharmacopœius, from the former Derivation, and ποιέω, *facio*, to make; is a Medicine-Maker, or an Apothecary: And

Pharmacopola, from the former Derivation, and πωλέω, *vendo*, to sell; is a Seller or Vender of Medicines.

Pharyngotomia, from *Pharynx*, and τέμνω, *seco*, to cut, is the same as *Laryngotomy*; as

Pharynx, is the same as *Larynx*; which see.

Phases, from φαίνω, *appareo*, to appear, are the appearances of any thing.

Philanthropos, φιλόανθρωπος, is strictly a Friend to Man; but hence some have conceitedly given it to some Medicines, of which they have had a great Opinion.

Philatros, φιλιάτρος, is a Student in Medicine.

Philonium, is the Name of an Anodyne Electuary, described in most Dispensatories from *Philo* its Author.

Philosophia, and thence

Philosophus, φιλόσοφος, is a Lover of Knowledge, and therefore most eminently is applied to those who study natural Causes; as

Philotechnus, φιλότεχνος, is applied to one who is a Lover, and an Encourager of Arts.

Philtrum, the same as *Filter*; see *Filtration*. This is also a Name some conceited People give to Medicines which they pretend will excite Love.

Phimosi, from φιμός, *obturamentum*, a Glewing or Fastening, is used to signify the Adhesion of one Part to another by the Mediation of some glutinous Matter, as in the Eye-Lids; but is generally applied to the Adhesion of the *Prepuce* to the Glands of the *Penis*; and when this is all round, that the *Prepuce* cannot be got back, it is called *Periphimosi*, from περί, *circum*, about, and φιμός.

Phlebotomy,

Phlebotomy, from φλέψ, *Vena*, a Vein, and τέμνω, *seco*, to cut, is Blood-letting. To give as much Light into this Affair, of so much Importance to the Art of Healing, as our Compass will here allow, it ought to be remembered, *That every Body striking against another, and communicating Part of its Motion thereunto, does lose so much of its own Motion, or is so much retarded.* Wherefore, the Blood thrown out of the Heart, while it strikes upon the antecedent Blood, and drives it forward, transfers to it Part of its own Motion, or loses it; that is, it is hindered by that, and so much retarded in its own Motion. Hence it follows, that if Blood be drawn out of the Basilic Vein of the Right Arm, then the succeeding Blood, or that carry'd by the Axillary Artery, or right Subclavian, will be less hindered in its Motion, than it was before that Vein was opened: For, Part of the Blood being taken away by the opening of that Vein, there remains behind a lesser Quantity in the Axillary Vein, or less is contained between the farther Extremity of the Axillary Artery and the Heart than was before; therefore, the Blood being let out by the Vein, the Remainder in the Artery will be less hindered in its Motion than before. And therefore, the Blood of that Artery, which communicates with the Vein that is opened, will flow with a greater Velocity, after the Aperture is made, than it did before. Hence it appears, that while the Blood is flowing out of the Vein in the Arm, the Blood, thrown out of the Heart into the *Aorta*, will find less Resistance in the ascending Trunk, than in the descending: and therefore, it will flow faster in the

ascending than in the descending Trunk: And thence too, it will find less Resistance in the right Subclavian Artery than in the left. For the Blood is not supposed to run out of the Vein in the left Arm, but of the right; and therefore it will run faster through the right Subclavian or Axillary Artery, than through the left. And lastly, it hence appears, that the Blood being let out of a Vein in the right Arm, the remaining Blood in the right Axillary Artery runs with a greater Velocity into the Artery of that Arm that is continuous to it, than it runs through the Thoracick Artery, or the right Scapulary, which is likewise continuous to it; because, when the Blood is not supposed to be drawn out from any Vein corresponding to the Thoracick Artery, or into which this exonerates itself, there is proportionally a greater Impediment to the Motion of the Blood in the Thoracick Artery, than in that of the Arm: But because the Velocity of Blood in the Subclavian Artery, or the right Axillary, is greater than in the left, the Velocity in the right Thoracick will also be greater than in the left Thoracick Artery. Wherefore, it is manifest that the Blood being let out of a Vein in the right Arm, the greatest Velocity of the remaining Blood will be in the Artery of that Arm, because it immediately empties its Blood into the Vein that is opened; and the next greatest Velocity will be in the Thoracick Artery, or Scapulary of the same Side, going out from the Axillary Artery. But the Velocity of Blood will be far less in the Brachial, Axillary, and Thoracick Artery on the left and opposite Side; and the Velocity will be

least of all in the Arteries arising from the descending Trunk of the *Aorta*.

Upon this View it may easily be gathered, what is to be done in every particular Circumstance, as to Blood-letting. As for instance, if we would prevent the Increase of any Humour from the Blood stagnating in the left Leg, or bring it about, that as little Blood as possible should flow to that Leg in any given Space of Time; first, Blood ought to be taken from the Arm or Leg of the right Side, because this is truly making what is called *Revulsion*. And again, if Blood be drawn away on the same Side, and from some Vein that receives the Blood from a Branch of that Trunk which transmits it to the swell'd Part, it will occasion a greater Derivation of Blood to that Limb. And whosoever rightly understands thus much, will easily in every Exigence manage this Part of Cure to the greatest Advantage. And, as for what relates to the whole Habit in all *Lentors* and Viscidities, if there be a due Strength and Elasticity remaining in the Solids, Phlebotomy will make the remaining Blood circulate faster, and become thinner and warmer: but in a *Plethora* from Debauch, and too large Quantities of spirituous Nourishment, or from a Diminution of Perspiration, where the Blood yet retains its natural Fluxility, Phlebotomy will render the remaining Mass to circulate slower, and become cooler. In the former Case a Diminution of the Resistance in the Blood-Vessels will increase the contractile Powers of those Vessels, and make them beat faster, and circulate their Contents with greater Velocity; but in the latter Case a Diminution

of the Quantity of a spirituous Blood will lessen the Quantity of Spirit secreted in the Brain, the Consequence of which will be, that the Heart and Arteries will not contract so often, nor so strongly as before, and therefore, will the Blood move slower, and become cooler. And on this depends the whole Doctrine of Blood-letting: For further Satisfaction in which, see *Bellini de Missione Sanguinis*.

Phlegm, in an human Body, is the same as *Pituita*, which see; but amongst the Chymists is much the same as Water, and is the common Vehicle and diluter of all solid Bodies; and, in Proportion to its Quantity in Mixture, are the other more languid or disabled in their attractive Influences. It is much to be questioned, whether this can be drawn by Distillation without some Mixture: that which has the least must come nearest to the Nature of a Principle, and, upon that Account, Rain-Water is like to afford it most. In the former Acceptation of this Term.

Phlegmagogues, from *Phlegma*, Phlegm, and *ἀγω*, *duco*, to draw, are such Medicines as are supposed to purge Phlegm. And,

Phlegmatici, are those who abound with Phlegm in their Constitutions. But,

Phlegmon, in the Acceptation of *Hippocrates*, and our practical Surgeons, signifies a Tumor with Inflammation and Heat; from *φλέγω*, *uro*, to burn. And,

Phlegmonodes, and

Phlogosis, have the same Signification.

Phosphorus, is a chymical Preparation, from Urine chiefly, that will flame and burn spontaneously. There are several Kinds of it, which, by proper Application, might

might give great Light into natural Philosophy.

Phrenes, is the same as *Diaphragm*, which see; and thus called, from *φρήν*, *Mens*, the Mind, because that has been imagined by some to be the Seat thereof; and, from the Communication of Nerves, it hath certainly such a nice Consent or Fellow-feeling with the Head, as to be sensibly affected with many Commotions there. Whence

Phrenitis is a Phrensy or Distraction, whose Seat is certainly in the Head, though it hath its Name from a Supposition to be seated in this Part. And,

Phrenetick Nerves, are those belonging to the Diaphragm. And,

Phrenetick Vessels, are the Vessels of that Part.

Phthisis, from *φθίω*, *corrumpo*, to corrupt, rot, or waste, is a Consumption. There is such a vast Variety, both as to the Cause and Cure of what goes under this Appellation, that, for an Account thereof, we must refer to Authors on that Subject.

Phygethon, *φύγεθλον*, is a Tumor affecting the glandulous Parts under the Jaw, called sometimes *Pannus*, it lying round and flat as a Cake.

Phylacteries, are sorts of Amulets, or Charms, to be worn externally for the Cure of many Diseases; but these seem to have had their Rise, when Physick was ingrossed by the Monks, and such like holy Cheats; but are now put out of Countenance, by the Increase of true Learning, and the Extirpation of those pious Juglers.

Phyma, and

Phymus, the same with *Phimosis*; which see: although

Phyma is a Name also given by

Surgeons to a Tumour about the Jaws.

Physiognomick Signs, from *φύσις*, *Natura*, Nature, and *γινώσκω*, *cognosco*, to know; are Signs that are pretended to be known from the Countenance. As,

Physiognomy, is the Art that pretends to give Rules for so doing.

Physiologia, from the former Derivation of the first Part, and *λέγω*, *narro*, to relate or describe, is that Part of Physick, that teaches the natural Constitution of the human Body.

Physicks, from *φύσις*, *Natura*, is, in general, the Science of all material Beings, or whatsoever concerns the System of this visible World; though in a more limited and improper Sense, Physick is, by many, apply'd to the Science of Medicine.

Phytologia, from *φύτη*, *Planta*, an Herb, and *λέγω*, *narro*, to describe: is a Description of Plants.

Pia Mater, is a thin and delicate double Membrane, which lies under the *Dura Mater*, and covers immediately the Substance of the Brain. Its inner Membrane is much larger than its outer Membrane; for it runs in betwixt all the Foldings and Circumvolutions of the Brain to separate them, and to sustain the Blood-Vessels, which make several Turnings and Windings upon it, before they terminate in the Substance of the Brain. It has the same Use as the *Dura Mater*.

Pica, the same as *Malacia*, which is a vitiated Appetite, wherein Persons crave Things unfit for Food, as Women with Child, or in a *Clorosis*.

Picra. See *Hiera Picra*.

Piles; they are the same as the *Hæmorrhoides*, and are to be accounted

Counted for only in the same Manner, as a *Plethora* causes the *Menses*; which see.

Pili, Hair; which see.

Pinealis Glandula. See *Conarion*.

Pinguedo, Fat; which see.

Pinna Auris. See *Ear*.

Pinna Nasi, the same as *Alæ Nasi*; which see.

Pin-and-Web, is an horny Induration of the Membranes of the Eye, not greatly unlike a Cataract; which see.

Pinnata Folia, from *Pinna*, a Feather; in Botany are such Leaves of Plants as are deeply jagged, cut, or indented, resembling a Feather in Shape.

Piperine: Things are thus called, which partake of the chief Qualities of Pepper, whether Simples or Compounds. *Hildanus* likewise applies *Piperina* to Baths in *Helvetia*, which he makes Mention of in his Works.

Pissaphaltus, is the same as *Bitumen Judaicum*.

Pistillum, a Pestle; the Use of which is enough known. Botanists have also apply'd it to a Part of some Plants, which, in Shape, hath Resemblance thereunto.

Pituita, Phlegm; is the most viscid and glutinous Part of the Blood, which is separated in the largest Glands, where the Contortions of the Arteries are greatest, and give the greatest Retardation to the Blood's Velocity, as in the Glands about the Mouth and Head. Hence,

Pituitaria, is a Name given to a Gland by *Bartholine*, which separates the viscid Moisture of the Nostrils.

Placenta Uterina. It is a thick Cake, that grows on the out-side of the *Chorion*, in Proportion as the *Fætus* grows; and, from its Ap-

pearance, called also *Hepar Uterinum*, the Liver of the Womb. It is of a circular Figure, and, at its biggest, is about two Fingers breadth thick, and six or seven in Diameter. The Branches of the umbilical Vessels are spread thro' all its Substance; and indeed, it seems to be nothing else but a Texture of the Veins and Arteries, by whose Extremities opening into the Sides of the Hypogastrick Vessels, the Circulation is performed between the Mother and the *Fætus*: For that Side of the *Placenta*, which adheres to the Womb, appears to be nothing but the Extremities of an infinite Number of small Threads, which, in Labour, dropping out of the Pores in the Sides of the Hypogastrick Blood-Vessels, into which they had insinuated themselves, is the Occasion of the flowing of the *Lochia*, till the *Uterus* collapses, or the Pores, by the natural Elasticity of the Vessels, contract by Degrees. Sometimes Twins have only one common *Placenta*, and sometimes they have each a distinct one.

Place, is that Part of Space which any Body takes up, and is divided into absolute and relative: the former is the real internal Space which a Body fills; and the latter the apparent, secondary, or sensible Position of any Body, according to the Determination of our Senses, with respect to other contiguous or adjoining Bodies.

Plaga, *πληγή*, in a lax Sense, is taken for any Disease; but more strictly, is used to signify those which are external, and proceed from Blows or Accidents.

Plana. See *Ethmoides*.

Plane, is a Surface, that lies even between its bounding Lines; so that, as a right Line is the shortest

Extension from one Point to another, so a Plane-Surface is the shortest Extension from one Line to another.

Plant. What comes under this Denomination, Mr. Ray has distributed under twenty-five Genders, or Kinds.

1. The imperfect Plants, which do either totally want both Flower and Seed, or else seem to do so; there having no Seed or Flower been yet discovered to belong to them, or at least, but to few of them; such as Coral, Sponges, *Algæ Confervæ*, Duck-meat, or the *Lens Palustris*, the *Fungi Tubera Terræ*, the Mosses, and some Liver-wort.

2. Plants producing either no Flower at all, or an imperfect one, and whose Seed is so small, as not to be discernible by the naked Eye. Some of these bear their Seeds on the back-part of their Leaves; as the Maiden-hair, Spleen-wort, *Polypodium*, and Ferns. Others bear it on the Stalk itself, adhering there by small single Foot-stalks; as the *Lichen Terrestris*, the *Lycopodium* or Wolfs-claw, the *Adiantum Aureum*, the *Lunaria*, *Equisetum*, &c.

3. Those whose Seeds are not so small, as singly to be invisible, but yet have an imperfect or staminate Flower, *i. e.* such an one as is without the *Petala*, having only the *Stamina* and the *Perianthium*; as Hops, Hemp, *Mercurialis*, Nettles, Docks, Sorrels, Arse-smart, Knot-grass, Pond-weed, Orach, Blite, Beet, Ladies-mantle, &c.

4. Such as have a compound Flower, and emit a Kind of white

Juice, or Milk, when their Stalks are cut, or their Branches broken off; such as Lettuce, Sow-thistle, Hawk-weed, Dandelion, Succory, Goats-beard, Nipple-wort, &c.

5. Such as have a compound Flower of a discous Figure, the Seed pappous, or winged with Downe, but emit no Milk as the former do; as Colts-foot, Fleabane, Golden-rod, Rag-weed, Groundsel, Cud-weed, &c.

6. The *Herbæ Capitatae*, or such whose Flower is composed of many small, long, fistulous, or hollow Flowers gathered together in a round Button, Ball or Head, which is usually cover'd with a squammous or scaly Coat; of which Kind are the Thistle, the greater Burdock, Blue-bottle, Knap-weed, Saw-wort, &c.

These have all a Downe adhering to their Seeds.

7. The *Corymbiferous* Plants, which have a compound discous Flower, but their Seeds have no Downe adhering to them; the Reason of the Name you have under the Word *Corymbus*: Of this Kind are Corn-marigold, common Ox-eye, Yarrow, the Daisy, Camomile, Tansey, Mugwort, Scabious, Teasel, Eryngo's, &c.

8. Plants with a perfect Flower, and having only one single Seed belonging to each single Flower, such are Valerian, Corn-sallad, Agrimony, Burnet, Meadow-Rue, Fumitory, &c.

9. The *Umbelliferous* Plants, which have a pentapetalous Flower, (*i. e.* one having just five small *petala*, or Leaves) and belonging

ing to each single Flower, are two Seeds lying naked, and joining together: they are called Umbelliferous, because the Plant, with its Branches and Flowers, hath an Head like a Lady's *Umbrella*, which they call *Umbella*.

This is a very large *Genus* of Plants, which, therefore, he thus subdivides into,

(1.) Such as have a broad flat Seed, almost of the Figure of a Leaf, or which are encompassed round about with something like Leaves; as Cow-parfney, Wild and Garden-parfney, Hogs-fennel (*Pucedanum*) &c.

(2.) Such as have a longish Seed swelling out in the Middle, and larger than the former; as Shepherd's-needle, Cow-weed, wild Chervil, common Spignel or Meum, &c.

(3.) Such as have a shorter Seed; as Angelica, and Alexanders.

(4.) Such as have a tuberous Root; as the Earth-nut, Kippernet or Pig-nut, Water-Drop-wort, and Hemlock Drop-wort.

(5.) Such as have a small wrinkled, channelled, or striated Seed; as Stone-parfley, Water-parfney, Burnet, Saxifrage, Caraways, Smalage, Hemlock, Meadow-saxifrage, Samphire, Fennel, Rock-parfley, &c.

(6.) Such as have rough, hairy, or bristly Seeds; as Mountain-Stone-parfley, Wild Carrot or Bird's-nest, Hedge and Bastard-parfley, Hemlock, Chervil, Sea-parfney.

(7.) Such as have their Leaves entire, and undivided into Jags, &c. as *Perfoliata* or Thorowax, Sannicle, the least Hare's-ear, &c.

10. The Stellate Plants, which are so called, because their Leaves grow on their Stalks at certain Intervals or Distances, in the Form of a radiant Star. Their Flowers are really monopetalous, but divided into four Segments, which look like so many distinct *Petala*, or four Leaves; and each Flower is succeeded by two Seeds which grow at the Bottom of it: Of this Kind is Cross-wort, or Mug-weed, with Madder, Ladies Bed-straw, Woodruff, Clivers, &c.

11. The *Asperifolia*, or rough-leaved Plants. They have their Leaves placed alternately, or in no certain Order on their Stalks; they have a monopetalous Flower cut or divided into five Partitions, and after every Flower there succeed usually four Seeds; such as *Cynoglossa* or Hound's-tongue, Wild-bugloss, Vipers-bugloss, Comfrey, Mouse-ear, Scorpion-grass, &c.

12. The *Suffrutices*, or verticillate Plants, Mr. Ray, in his last Edition of his *Synopsis Methodica Stirp. Britan.* faith, The more certain Marks, or Characteristick Notes of this Kind of Plants are, that their Leaves grow by Pairs on their Stalks, one Leaf right against another, their Flower is monopetalous, and usually in form of an Helmet or Hood; there succeed four Seeds usually to each Flower, and which have no other Seed-Vessel but the *Perianthium*: For that Mark of their Flowers growing in Whirls about the Stalk, as they do in the Dead-nettle, Hore-hound, &c. is not found

found in all the Plants of this *Genus*. To this Head belong Mother-of-Thyme, Mint, Penny-royal, Ver-vain, Wood-betony, Self-heal, Ale-hoof, Bugloss, *Scordium*, Mother-wort, &c.

13. Such as have many naked Seeds, at least more than four, succeeding their Flowers, which, therefore, they call *Polyspermæ Plantæ Semine nudo*. By naked Seeds they mean such as are not included in any Seed-pod, or Case, out of which they spontaneously drop; but such as either have nothing at all covering their Seeds, or else drop off with their Covering upon them. Of this Kind are Pile-wort, Crow-foot, Marsh-mallows, Avens, Strawberry, Cinquefoil, Tormentil, Meadow-sweet, &c.

14. Bacciferous Plants, or such as bear Berries; as Briony, Dwarf-Honey-suckle, Butcher's-broom, *Solomon's-seal*, Lily of the Valley, Night-shade, Asparagus, Whorts or Whortle-berries, &c.

15. Multifiliquous, or Corniculate Plants; or such as have after each Flower many distinct, long, slender, and many Times crooked Cases, or *Siliquæ*, in which their Seed is contained; and which, when they are ripe, open themselves, and let the Seeds drop out: Of this Kind is the common House-leek, Orpine, Navel-wort, or Wall Penny-wort, Bears-foot, Marsh-marigold, Columbines, &c.

16. Such as have a monopetalous Flower, either uniform or difform, and after each Flower a peculiar Vessel, or Seed-case (besides the common *Calix*) containing the Seed, and this often divided into many

distinct Cells. These, by some, are called Vasculiferous Plants, such as common Henbane, Marsh, Gentician, Bind-weed, Throat-wort, Rampions, Toad-flax, Fox-glove, yellow and red Rattle or Cock's-comb, Eye-bright, &c.

17. Such as have an uniform, tetrapetalous Flower, but bear their Seeds in oblong filiquous Cases; as the Stock-gilli-flower, Wall-flower, common Whitloe-grass, Jack-by-the-hedge, or Saufe alone, common Mustard, Charlock or wild Mustard, Radish, wild Rocket, Ladies-smock, Scurvy-grass, Woad, &c.

18. Vasculiferous Plants, with a seemingly tetrapetalous Flower, but of an anomalous or uncertain Kind; For this Flower, though it be deeply divided in four Segments, is yet really monopetalous, and falls off all together in one; such as Speedwell or Fluellin, wild Poppy, yellow Poppy, Loose-strife, Spurge, and Plantain (according to Mr. Ray.)

19. Leguminous Plants (or such as bear Pulse) with a papilionaceous Flower. Their Flower is difform, and almost in the Form of a Butter-fly with its Wings expanded, (whence the Name papilionaceous) consisting of four Parts, join'd together at the Edges; these are Peas, Vetches, Tares, Lentils, Beans, Liquorice, Bird's-foot, Trefoil, Rest-harrow, &c.

20. Vasculiferous Plants, with a pentapetalous Flower. These, as the 16th and 18th Kind, have, besides the common *Calix*, or Cup of the Flower, a peculiar Case containing their Seed, and their Flower consisting of five Leaves; such as

as Maiden-pinks, Campions, St. John's-wort, Male Pimpernel, Chick-weed, Crane-bill, Flax, Primrose, Periwinkle, Centaury, Wood-forrel, Marsh-trefoil, &c.

21. Plants with a true bulbous Root. A bulbous Root consists of but one round Ball or Head, out of whose lower Part or Basis there go many Fibres or Strings to keep it firm in the Earth. The Plants of this Kind, when they first appear, come up but with one Leaf, and the Leaves are nearly approaching to those of the Grass-kind of Plants, for they have no Foot-stalk, and are long and slender: The Seed-Vessels are divided into three Partitions; their Flower is usually hexapetalous, or seemingly divided into six Leaves or Segments; such as Garlick, Daffodil, Hyacinth, Saffron, &c.

22. Such as have their Roots approaching to a bulbous Form. These emit, at first coming up, but one Leaf, and in Leaves, Flowers and Roots, resemble the true bulbous Plants; such as Flower-de-Lis, Cuckoo-pint, Orchis, Broom-rape, Bastard-Hellebore, Tway-blade, Winter-green, &c.

23. Culmiferous Plants, with a grassy Leaf, and an imperfect Flower. Culmiferous Plants are such as have a smooth hollow jointed Stalk, with one long sharp-pointed Leaf at each Joint, encompassing the Stalk, and set on without any Foot-stalk: their Seed is contained within a chaffy Husk; such as Wheat, Barley, Rye, Oats, and most Kinds of Grasses.

24. Plants with a grassy Leaf, but not culmiferous, with an im-

perfect or stameneous Flower; as Cypress Grasses and Rushes, Cat-tail, Bur-reed, &c.

25. Plants whose Place of Growth is uncertain and various, but chiefly Water-plants, as the Water-lily, Water-milfoil, Water-wort, Pepper-grass, Mouse-tail, Milk-wort, Dodder, &c.

There is also another usual Division of Plants into Trees, *Fru-tices* or Shrubs, and *Suffrutices* or Herbs; but this is rather popular and vulgar, than just and philosophical.

Plants imperfect, are, by the Botanists, accounted such as either really want Flower and Seed, or rather seem to want them; since no Flower or Seed hath yet been discovered to belong to much the greatest Part of them. These Mr. Ray distinguishes according to the Place of their Growth, into, I. *A-quaticks*, or such as grow in the Water; and that either in the Sea, and then they are called *Marine Plants*; and those are either of an hard and stony Consistence, as the *Corals*, *Corollines*, *Porus*; or of a more soft and herbaceous one. Of these some are like Herbs, and are of two Kinds; the greater, which are *Cauliferous*, as the *Fucus*: the lesser, as the *Alga*. The others are more of the *Muscus* or *Fungus* Appearance, as the *Spongia*. *Fresh-water Plants*; and those have either no Leaves, but are *Capillaceous*, as the *Confer-væ*: Or their Leaves divided into three Parts; as the *Lens palustris*, *Lenticula*, &c. II. Such imperfect Plants as inhabit the dry Ground, he divides into, (1.) Such as have a Substance, either woody or fleshy; and these have

have scarce any Thing common to the perfect Plants, neither the green herbaceous Colour, nor the Texture of Herbs, nor Flower, Seed, nor Leaf, properly speaking, as all the *Fungi*: which are, 1. Such as grow on Trees, and therefore, called *Arboreous*; as the *Fungus Laricis*, called *Agarick*, and the *Fungus Sambuci*, which we call *Jew-ear*, or *Auricula Judæ*, in Latin. 2. *Terrestrial*: and these are either *Cauliferous*, with Heads either lamellated, or porous underneath; or without Stalks, as the *Pezize* of Pliny, and *Fungus Pulverulentus*, *Crepitus Lupi*, or common Puffballs. 3. *Subterraneous*; as the *Tubera terræ*, or *Truffles*. (2.) Such as have a more soft and dry Consistence, and more like that of Herbs; of which some are both *Cauliferous* and branched, as the *Musci* or *Mosses*. Others are without Stalks, adhering like a Crust to the Surface of the Earth, Stones, Trees, or Wood; as the *Lichen Terrestris* and *Arboreus*.

Planta Pedis, is the Sole of the Foot. Hence,

Plantaris Musculus, is a Muscle that hath a fleshy Beginning from the Back-part of the external Protuberance of the Thigh-bone, and descending a little Way between the *Gemellus* and *Soleus*, it becomes a long and slender Tendon, which marches by the Inside of the great Tendon, and at the Sole of the Foot is expanded into a large *Aponeurosis*, which hath the same Use, Situation, and Connection, as that of the Palm of the Hand.

Plastica Virtus, a plastick Power. This is a Term of a vague Signification, invented, by some, to express the Faculty of Generation or Vegetation, instead of a better Account of those Matters.

Plectrum, thus some call the sharp Part of the *Os Petrosum*; and others apply it to other Parts, as the *Uvula*, &c. but their Authority is not much followed.

Plenitude, sometimes used in the same Sense as *Plethora*; which see.

Plenum. See *Vacuum*, and *Nature Laws of*.

Pleroticks, from *πληρόω*, *impleo*, to fill, are such Medicines as *Incarnatives*, which see.

Plethora, from *πληρόω*, *impleo*, to fill, is when the Vessels are fuller of Humors, than is agreeable to a natural State, or Health: and arises either from a Diminution of some natural Evacuations, or from Debauch, and Feeding higher, or more in Quantity than the ordinary Powers of the *Viscera* can digest and secern. Evacuation and Exercise are its Remedy. Hence,

Plethoricus, is a Person under a *Plethora*. See *Menses*.

Pleura, is a double Membrane which covers all the Cavity of the *Thorax*. It arises from the *Vertebrae* of the Back, ascends on each Side upon the Ribs to the Middle of the *Sternum*. It is fix'd to the *Periosteum* of the Ribs, to the internal intercostal Muscles, and it covers the Midriff. Its Side towards the Cavity is smooth and equal; but that which is fix'd to the Ribs is rough. Hence,

Pleuritis, a Pleurisy, is an Inflammation of this Membrane; though that is hardly distinguishable from an Inflammation of any other Part of the Breast, which are all from the same Cause, a stagnate Blood; and are to be remedied by Evacuation, Suppuration, or Expectoration, or all together; as in a *Peripneumonia*: this

is also divided into legitimate, and *notba*, spurious, but it is of no great Service in Practice to make such Distinction.

Pleuro-pneumonia, is used by some modern Writers, for a Mixture of a *Pleurisy* and a *Peripneumonia* together, which may happen : and others, particularly *Dolens*, invert the Words, calling it *Pneumo-pleuritis*.

Plexus Choroides, is a wonderful Contexture of small Arteries in the Brain like a Net, for which Reason it is sometimes called

Plexus Reticularis, the Net-like Union; it is just over the pineal Gland.

Plexus Ganglioformis, and

Plexus Nervosus, is a Combination of Nerves together, as it were, into a Knot, as they do in several Parts of the Body, especially, in the

Plexus Cervicalis. See *Nerve*.

Plica, from *plico*, to fold, is a Distemper peculiar to *Poland*, where the Hair is matted together in a strange Manner, as it grows in a Cow's Tail.

Plume, is a Term us'd by Botanists, for that Part of the Seed of a Plant, which, in its Growth, becomes the Trunk : It is inclosed in two small Cavities formed in the Lobes for its Reception and is divided at its loose End into divers Pieces, all closely bound together like a Bunch of Feathers, whence it has this Name ; *Pluma* signifying a Feather.

Pneuma, properly signifies Spirit, or Wind ; whence,

Pneumaticks, is that Part of Natural Philosophy which teaches the Properties of the Air ; and hence also,

Pneumatocèle, from *πνεῦμα*, *Ventus*, Wind, and *κῆλη*, *Tumor*, a

Swelling, is a Rupture from pent up Wind or Vapour ; and is to be cured by Discussion.

Podagra, from *πῦς*, *Pes*, the Foot, and *ἀρπάζω*, *capio*, to seize, is the Gout in the Feet : and

Podagra Dentium, is sometimes us'd for the Tooth-ach, but improperly. See *Gout*.

Podex, the same as *Anus* ; which see.

Point, is that which is supposed to have no Manner of Dimensions, but to be indivisible in every Respect ; and is, as it were, the Beginning of Dimension.

Poison. The World is greatly indebted to Dr. Mead, for his Essays on this Subject, because they have brought to our Understanding those Things, which used to be talked only in an ambiguous, mysterious Manner. The first Essay upon the *Viper* reminds us, That the Symptoms which follow, upon the Bite of that Creature, are an acute Pain in the Place wounded, with a Swelling, at first red, but afterwards livid, which, by Degrees, spread further to the neighbouring Parts, with great Faintness, and a quick, though low, and sometimes interrupted Pulse ; great Sickness of the Stomach, with bilious convulsive Vomiting, cold Sweats, and sometimes Pains about the Navel : and, if the Cure be not speedy, Death itself, unless the Strength of Nature be sufficient to overcome the Disorders, which sometimes happen. The Wound runs with a sanious Liquor, and the Colour of the whole Skin is changed yellow, as in the Jaundice. The Bite is accompany'd with an Effusion of Juice that instils into the Wound ; and tho' this be in an inconsiderable Quantity, yet its Execution is very surprising.

prizing. In it, with a Microscope, may be discerned a Parcel of small Salts nimbly floating about, but, in a short Time, they will shoot into Crystals of an incredible Tenuity and Sharpness, with something like Knots here and there, from which they seem to proceed; so that the whole Texture, in a Manner, represents a Spider's Web.

These pungent Salts then, when they are thrown into a Wound, will not only, as so many *Stimuli*, irritate and fret the sensible Membranes, whereupon there necessarily follows a greater *Afflux* than ordinary of the animal Juices that Way, (as is manifest from the *Bellinian Doctrine de Stimulis*) so that 'the wounded Part must be swelled, inflamed, livid, &c. but also, those *Spicula*, being mixed with the Blood, will so disjoin the Parts of it, that its Mixture must be quite altered; and, from the various Cohesion of its Globules, will arise such different Degrees of Fluidity and Impulse towards the Parts, from what this Liquor had before, that its very Nature will be changed, or in the common Way of speaking, it will be truly and really fermented. To understand which aright, it may be necessary to observe, that there is in all Fluids, not only a simple Contact of their Parts, but a *Nisus in Contactum*, or Cohesion; which is the same thing with the Attraction of the Particles one to another. To which may be added, that there is a Pressure of the several Parts of a Fluid every Way, and that this uniform Attraction of the Parts to one another must be variously changed by the different Attraction of heterogeneous Bo-

dies mixed with them: and hence it follows, that whatsoever Power is sufficient to make a Change in this Attraction, or Cohesion of the Parts, makes an Alteration in the Nature of the Fluid; that is, as it is commonly expressed, puts it into a Fermentation. Now it is to be observed also, that the Blood consists chiefly of two Parts, a simple Lymph, and an infinite Number of small Globules, containing a very subtil and elastick Fluid; these acute Salts, therefore, when mingled with it, do prick these Globules, or *Vesiculæ*, and so let out their imprisoned active Substance, which, expanding itself every Way, must necessarily be the Instrument of this speedy Alteration.

From this we may learn how so small a Portion of Juice should infect so great a Quantity of Liquor: for, in order to do this, it is not necessary that the Venom should be, at the very first, mixed with all its Parts; but it is sufficient that it pricks some of the Bladders; and the elastick Matter of some of these, being let out, will be a nimble Vehicle to the acute Salts, and not only, by its Activity, disperse them thro' the Fluid, but restore to them their decreasing Force, and thus continue their Effects, till a great Part of the Liquor undergoes, in some Degree at least, the like Alterations. Hence also appears what a vast Variety there may be in the Fermentations, even of one and the same Fluid; for these, being no other than Changes made in the Cohesion of the compounding Particles, are capable of as many Alterations, as Motion in its Degrees and Directions can admit of,

which are really infinite. The Effects of such an Agitation of the Blood must not only be whatever are the Consequences of a disturbed Circulation, and an irregular and interrupted Secretion of the Spirits, as low Pulse, Faintings, Sicknefs, Palpitation, convulsive Vomitings, Tremblings, &c. but also, the Texture of the Fluid being thus broken, those Parts of it, which are of the slowest Motion, and greatest Viscidity, will be easily separated from others; such they are, which, when united together, do compound the Bile, and therefore, these will tinge the capillary Vessels and fine Ducts in the Skin, with a yellowish Colour. And it may likewise be taken Notice, that though the main Alterations made by this Poison be in the Fluid of the Arteries, yet that of the Nerves may be considerably changed too; for this consisting, as well as the Blood, of different Parts, and being dispersed in small Tubes all over the Body, is not only very capable of various Degrees of Force, Impulse, &c. but undulating continually towards the Brain, and being the chief Instrument of Motion and Action, may, perhaps, sometimes more immediately convey the Mischief to the sensible Membranes, and thus be the Cause of those violent Pains, Convulsions, Sicknefs, &c. with which those who are bitten are presently seized.

Most of the Symptoms of those who are bit by a *Tarantula* agree with the Effects of the Viperine Poison. The Nature of this, therefore, may be conjectured to consist in its great Force and Energy, whereby it immediately raises an extraordinary Fermentation in the

whole arterial Fluid; whereby its Texture and *Crafsis* is considerably altered: the Consequence of which Alteration, when the Ebullition is over, must necessarily be a Change in the Cohesion of its Parts, by which the Globules, which did before, with equal Force, press each other, have now a very differing and irregular *Nisus* or Action; so that some of them do firmly cohere together, as to compose *Molecules*, or small Clusters: Upon which Account, there being now a greater number of Globules contained in the same Space than before; and besides, the Impulse of many of these, when united together, differing according to the Conditions of their Cohesion, as to Magnitude, Figure, &c. not only will the *Impetus*, with which this Fluid is drove towards the Parts, be at some Strokes greater than ordinary, but the Pressure upon the Blood-Vessels must be very unequal and irregular; and this, more especially, will be felt in them which are most easily distended, such are those of the Brain, &c. And hereupon the Fluid of the Nerves must necessarily be put into various undulatory Motions, some of which will be like unto those, which different Objects, acting upon the Organs or Passions of the Mind, do naturally excite in it: whereupon such Actions must follow in the Body, as are usually the Consequences of the several Species of Sadness, Joy, Despair, or the like Determinations of Thought. This, in some Degree, is a Coagulation of the Blood, which will the more certainly, when attended with uncommon Heat, as is the Case in those Countries where these Creatures

tures abound, produce such like Effects as these ; because the Spirits separated from the Blood, thus inflamed, and compounded of hard, fixed, and dry Particles, must unavoidably share in this Alteration : that is, whereas their Fluid consists of two Parts, one more active and volatile, the other more viscid and glutinous, which is a Kind of Vehicle to the former ; their active Part will bear too great a Proportion to the viscid, and they must be necessarily of more than ordinary Volatility and Force, and will, therefore, upon the least occasion imaginable, be irregularly determined to every Part : whereupon will follow Tremblings, Anger or Fear, upon a light Cause, extreme Pleasure at what is trivial, as particular Colours, or the like : and, on the other Hand, Sadness at what is not agreeable to the Sight ; nay, Laughter, obscene Talk and Actions, and such like Symptoms, as attend Persons bit : Because, in this Constitution of the nervous Fluid, the most light Occasion will make as real a Reflux and Undulation of it to the Brain, and present as lively Species there, as the strongest Cause and Impression can produce in its natural State and Condition ; nay, in such a Confusion, the Spirits cannot but sometimes, without any manifest Cause at all, be hurried towards those Organs, to which, at other Times, they have been most frequently determined ; and every one knows which they are in hot Countries.

The Histories of these Cases sufficiently inform us of the Effects of Musick upon Persons touch'd with this Poison : and that proving their Cure, is no small Confirma-

tion, that this is the Manner whereby this Poison operates. Though the Persons bit have no Inclination to dance, and say, They have not Strength to do it, till they hear the Musick : As for the Reason, therefore, of their starting up at the first Noise of the Instrument, it must be considered, that muscular Motion is no other than a Contraction of the Fibres from the arterial Fluid, making an Effervescence with the nervous Juice, which, by the light Vibration and Tremor of the Nerve, is derived into the Muscle. And thus there is a two-fold Effect and Operation of the Musick, that is, upon the Body and the Mind : For, a brisk Harmony excites lively Species of Joy and Gladness, which are always accompanied with a more frequent and stronger Pulse, or an increased Influx of the Liquor of the Nerves into the Muscles, upon which, suitable Actions must immediately follow. As for the Body, since it was sufficient to put the Muscles into Action, to cause those Tremors of the Nerves, by which their Fluid is alternately dropped into the moving Fibres, it is all one, whether it be done by the Determination of the Will, or the outward Impression of the elastick Fluid ; such is the Air, and, that Sounds are the Vibrations of it, is beyond Dispute. These, therefore, rightly modulated, may shake the Nerves as really as the *Imperium Voluntatis* can do, and consequently, produce the like Effects. The Benefit of Musick is not only their dancing to it, and so evacuating, by Sweat, a great Part of the inflammatory Fluid ; but, besides this, the repeated Percussions of the Air hereby made,

by immediate Contact, shaking the contractile Fibres of the Membranes of the Body, especially those of the Ear, which, being continuous to the Brain, do communicate their Tremblings to its Membranes and Vessels; by these continued Succussions and Vibrations, the Cohesion of the Parts of the Blood is perfectly broken, and the Coagulation prevented: so that the Heat being removed by sweating, and the Coagulation by the Contraction of the muscular *Fibrillæ*, the wounded Person is restored to his former Condition.

If any one doubts of this Force in the Air, he may consider, that it is in Mechanics demonstrated, that the smallest Percussion of the smallest Body can overcome the Resistance of any great Weight which is at Rest; and that the languid Tremor of the Air, which is made by the Sound of a Drum, may shake the vastest Edifices. But, besides all this, we must allow a great deal to the determinate Force, and particular Modulation of the trembling Percussions; for contractile Bodies may be acted upon by one certain Degree of Motion in the ambient Fluid, though a greater Degree of it, differently qualified, may produce nothing at all of the like Effect: this is not only very apparent in the common-stringed musical Instruments tuned both to the same Height; but also in the Trick, which many have of finding the Tone or Note peculiarly belonging to any Wine glass; and by accommodating their Voice exactly to that Tone, and yet making it loud and lasting, they will make the Vessel, tho' not touch'd, first to tremble, and then burst; which

it will not do, if the Voice be too low, or too high. And this makes it no difficult Matter to conceive, why different Persons, infected with this Venom, do require a different Sort of Musick, in order to their Cure, in as much as the Nerves and distractile Membranes have different Tensions, and consequently, are not, in like Manner, to be acted upon by the same Vibrations.

The next Species of Poison, taken Notice of by this Author, is that of the *Mad Dog*, which induces pretty much the same Symptoms in time, with the Addition of an *Hydrophobia*, or Dread of Water. To understand which rightly, it is necessary to observe, that the *Rabies*, or Madness in a Dog, is the Effect of a Fever; and therefore, it is most common in excessive hot Weather, - though sometimes intense Cold may be the Cause of it: that no Dog, in this Case, ever sweats; from whence it follows, that when his Blood is in a Ferment, it cannot, as in other Creatures, discharge itself upon the Surface of the Body, and therefore, must of Necessity throw out a great Number of saline and active Particles upon those Parts, where there is the most constant and easy Secretion; and such, next to the Millary in the Skin in us, are the salival Glands: for this Reason, much more Spittle is separated in a Dog, when mad, than at any other Time, and that very frothy, or impregnated with hot subtile Parts.

Now, as what we every Day observe, that what is thrown out from Liquors, in a Ferment, is capable of inducing the like Motion in another Liquor of the same Kind,

Kind, when duly mixed with it ; so we may very well suppose in the present Case, that the *Saliva*, which is, of itself, one of the most fermentative Juices in Nature, being turgid with fiery saline Particles thrown into it out of the boiling Blood, when it comes, by Means of a Wound, to be incorporated with the arterial Fluid of any one, does, by Degrees, raise a preternatural Ferment in it: the Effects of which will necessarily be most felt in those Parts, which, being tender, are the least able to resist the Distension of the Blood-Vessels ; such are the Stomach, and especially the Brain : and hereupon *Deliria*, with maniacal and such like Symptoms, will ensue. A Person, thus affected, may be said, in a Degree, to have put on the canine Nature, though his Reason be all this time untouch'd and entire, may bite, howl, &c. because the like violent Agitation of the Blood in him, as was in the Dog, will present like Species, and consequently (so far as their different Natures will allow) produce like Actions : Just as it hath been observed, that Sheep, bitten by a mad Dog, have run at the Shepherd, like so many Dogs, to bite him ; so much can an Alteration of Blood and Spirits do. And as a timorous Creature may be emboldened, so we oftentimes see Persons courageous enough, by a Change made in the Blood by Evacuation, that is, by Want of Force and Motion in that Fluid, made Cowards, in Despite of their Reason, so long as that Defect is continued.

But the main Difficulty in this Case is, the Mischief discovering itself so long after the Bite ; and

the *Hydrophobia*. As to the former, we are to consider, that Fermentation being a Change made in the Cohesion of the Compounding Parts of a Fluid, it is sometimes a longer, and sometimes a shorter Time, before this Alteration is wrought ; which Variety may either proceed from the different Nature and Constitution of the Ferment, or of the Liquor fermented, and a great Number of Circumstances besides : so that this Venom may be all the while doing its Work, though the Change made by it may not be so considerable, as to be sensibly taken Notice of, till a long Time after. Nay, it may so happen, that the Ferment being weak, may not raise in the Blood any remarkable Agitation at all, till some accidental Alteration in the Body unluckily gives it an additional Force. As it is also observed, how much Heat concurs to heighten the Symptoms from the Bite of a *Tarantula*. And this may probably be the Case of those in whom this Malignity has not appeared, till six or twelve Months after the Wound.

That we may understand the Reason of the *Hydrophobia*, it is to be remarked, that this Dread of Water does not come on, till the latter end of the Disease ; that is, not till the preternatural Fermentation in the Blood is come to its Height ; and, as in the Dog, so in the Patient, a great Quantity of fermentative Particles is thrown off upon the Glands of the Mouth and Stomach, as appears by foaming at the Mouth, &c. as also, that this Fear is not from a Sight of Water : for, if the Vessel be close shut, and the Patient suck

through a Quill, as soon as he tastes it, he falls into Anguish and Convulsions. It is, therefore, highly probable, if not certain, that this surprising Symptom proceeds from the intolerable Pain which any Liquor taken at this Time induces, partly by its hurting the inflamed Membranes of the Jaws in Deglutition, and partly by fermenting with those active Particles discharged by the Blood upon the stomachick Glands, and thus twitching and irritating the nervous Membranes, that the very Memory of it gives Pain and Abhorrence: Nor will any Body wonder how this Ferment should cause such Torment, who considers, how often even in cholical Cases, Persons are downright distracted by excessive Pain, from a Cause not unlike to this, that is, a corrosive Ferment in the Bowels, stimulating those tender Membranes into spasmodick and convulsive Motions.

The most celebrated Cure in this Case is Cold-bathing, the Effects of which any one may be apprized of, by comparing what is said under that Term, with what has been here said of the Effects of Musick.

For what concerns those Poisons which proceed from Minerals, they all of them bear so much Analogy to what is made from Quicksilver in the common Sublimate, as to be understood by what is said under that Head, (see *Mercury*;) and they are all more or less dangerous, according as their Salts receive a differing Force from the metallick Particles: For this Reason, as hath been observed, that the most virulent may be mitigated by breaking the Points of the saline Chrystals; so on the other Hand, the most innocent Minerals may become corrosive, by combining them with

Salts, as is seen in the several Preparations of Silver, Antimony, Iron, &c.

Vegetable Poisons may be understood by what is said under *Narcotics*, which see. But that venomous Exhalations are from poisonous Minerals, is a Mistake, because many of them are of a Nature so different from mineral Poisons, that the very Substance from which they arise may not be hurtful, though taken into the Stomach itself. These are all included in the Word *Mephitis*. The most celebrated of this Kind is that in *Italy*, called *La Grotta de Cani*, which though it may not be universally applicable to any *Mephitis* whatsoever, yet it seems plainly to be the Case of most; and where it is not, this simple Mischief will only be found to be complicated with another: And then some extraordinary Symptoms or Appearances, in the Animals kill'd, will easily make a Discovery of the additional Venom and Malignity.

This is a small Grotta at the Foot of a Hill about eight Foot high, twelve long, and six broad; from the Ground rises a thin, subtle, warm Fume, visible enough to the Eye, which does not spring up in little Parcels here and there, but in one continued Steam, covering the whole Surface of the Bottom of the Cave; and has this remarkable Difference from common Vapours, that it does not disperse itself into the Air, but quickly after its Rise falls back again, and returns to the Earth, the Colour of the Sides of the Grotta being the Measure of its Ascent; for so far it is of a darkish Green, but higher only common Earth, and this is but ten Inches; so no Animal, if its Head be kept above this Mark, is injured by it:

But

But when a Dog, or any other Animal, is forcibly held below it, or by reason of its Smallness cannot hold its Head above it, it presently, like one stunned, loses all Motion, falls down as dead, and has no more Sign of Life left than a faint beating of the Heart and Arteries, which, if the Animal is left longer, ceases too; but, if snatched out and laid in the open Air, soon comes to Life again, and sooner if thrown into an adjacent Lake. Herein seems no Suspicion of real Poison; because if there were, it would be impossible that Animals, taken out of the Grotta, should so immediately recover the Effects of it, without any remaining Appearance of Faintness, or such Symptoms as they suffer who have breathed in a poisonous Air. To understand, therefore, wherein this deadly Quality consists, it is needful to premise, that Life is the Circulation of the Blood: and the Regularity of it is the Measure of Health. Now all the Animal Operations and Offices, which proceed from this Circulation, are the Effects of several Secretions of Liquors, of very different Natures, out of the same fluid Mass. It was, therefore, absolutely necessary, that the Blood, before it be distributed to the Organs, should be so broken, as that no Cohesion of its Parts should hinder the Separation of these Juices from it, when it arrives with a determinate Force at the Orifices of the secretory Vessels. This Work is done in its Passage through the Lungs, by the repeated Compression of the Air in those Bladders upon the Arteries, with wonderful Contrivance dispersed among them; (see *Lungs*.) Herein lies the Use and Necessity of Respiration, and the sudden Mischief of stopping it, in that the

whole Mass of Blood being to pass this Way, upon a Check here, there presently ensues a Stagnation, that is a Cessation of all animal Functions, or Death; which will be the more speedy, if not only no Air is inspired, but, in the Room of it, a Fluid of a quite different Nature.

Wherefore, it must be observed also, that this good Effect of the Air is performed by its Elasticity; and that no Fluid whatsoever besides is elastick, at least to any considerable Degree; that is, has a Faculty of expanding and dilating itself, when compressed. Now therefore, in the Case before us, the Vapour is one continued and uninterrupted Steam, and, after its Rise, it soon falls down again; so that it has little or no Mixture of Air with it, or no Elasticity; and is on the other Hand very heavy, when forsaken by the Force of the Heat that drove it upwards. So that Animals in this Place do, instead of Air, inspire mineral Fumes, that is, a thin watery Vapour, impregnated with such Particles as do, when united together, compose solid and heavy Masses; which is so far from helping the Course of the Blood through the Lungs, that it rather expels the Air out of the *Vesiculae*, and straitens the Passage of the Blood-Vessels, by its too great Gravity: Whereupon the Bladders are relaxed and subside, and the Circulation is immediately interrupted. But when the Animal is in time removed out of this Steam, that small Portion of Air which does after every Expiration remain in the *Vesiculae*, may be powerful enough to drive out this noxious Fluid; especially if the Head of the Creature be held downwards, that so its Gravity may forward its Expulsion; or it be thrown

thrown into Water, which by assisting, upon the account of its Coldness, the Contraction of the Fibres promotes the retarded Circulation; as is every Day experienced in swooning Fits.

Another Species of Poison, or Venom, is that by which some Fevers, and those Diseases which are called Pestilential, are communicated to others; in which Case it is to be remembered, that such Infection happens not till the latter End of the Distemper, that is, when the fermenting Blood has thrown off great Quantities of active fermentative Particles upon the Glands of the most constant and easy Secretion: such as those in the Surface of the Body, and the Mouth and Stomach. By this means, therefore, the Matter of insensible Perspiration, and the Sweat is impregnated with these *Miasmata*: So that the ambient Air becomes fill'd with them; whereby not only some may insinuate themselves into the Blood of a sound Person thro' the Pores of the outward Skin, but also in Inspiration thro' the Membranes of the Lungs: And thus the like Ferment will be raised here, as was in the originally distempered Subject. This may be one, but there is, perhaps, another more dangerous Manner of Infection, by the Breath of the Diseased taken in by a By-stander, especially in the last Moment, seizing the Stomach, and fixing a Malignity there. For it is upon this Score, that those who are infected do presently complain of an extreme Pain and *Nausea* in the upper Orifice of the Stomach. Herein lies the Difference of Contagion from the first Invasion of malignant Diseases; the Effects of the one are the Cause and Beginning of the other: and therefore,

it is no Wonder, if, tho' the Symptoms of the former are, by a gradual Increase, wrought up to their Height, they do, however, in the latter, even at the very first, discover their Ill-nature and Violence; and like a reinforced Enemy, by surer Strokes, make quicker Dispatch. And this is undoubtedly the Reason for the great Increase of Funerals in Plagues, in that one Death is thus added to another.

Polarity: That Property of the Magnet, or of a Piece of Iron, to point towards the Poles of the World, is thus called.

Polium, is an Ingredient in the *Theriaca Andromachi*, but is not remarkable enough, upon any other Account, to be worth notice.

Pollen, expresses somewhat in a finer Powder than what is commonly understood by *Farina*.

Pollex, the Thumb, or great Toe. See *Digitus*.

Pollution Nocturnal, is an involuntary emission of Seed, from too great a Turgescence of the Seminal Vessels, or from the Seed's being too thin and irritating, or from a Weakness of the Parts.

Polyanthos, or *Polyanthium*, from πολὺς, *multus*, many, and ἄνθος, *Flos*, a Flower, is any Plant bearing many Flowers.

Polychreston, πολυχρηστος, *ad multa utilis*, the same as *Polypharmacum*, a Medicine of many Virtues, or that will cure many Diseases. It hath, therefore, been conceitedly given to many Preparations and Compositions, which have been far from deserving such Encomium, and some of which yet remain in the common Dispensatories.

Polygon, from πολὺς, *multus*; and γωνία, *angulus*, is a Figure of many Sides.

Polypetalous, from πολὺς, *multus*, many,

many, and *πέταλον*, *Folium*, a Leaf. See *Plant*.

Polypus, *πολύπους*, having many Feet, signifies any thing in general with this Property, as the *Millepedes*; tho' there is another Animal to which it is most particularly applied, described by *Aldrovandus*; but figuratively it is transferred to something in an human Body, as a Swelling in the Hollow of the Nostrils, called often a *Sarcoma*; many Instances of which are to be met with in the Histories of Physick; but it is more latterly also applied to a tough Concretion of grumous Blood in the Heart and Arteries, sometimes adhering to the Coats of the Vessels where it is formed, and at others not so, when it is called *Pendulous*. In the *Lyp-sick* Transactions for the Year 1684, there is the History of a *Polypus* in the Kidnies; and *Ruyfch* gives the Figure of a fleshy *Polypus* taken out of the Womb.

Polyspermous, from *πολύς*, *multus*, much, and *σπέρμα*, *Semen*, Seed. Those Plants are thus called which have more than four Seeds succeeding each Flower, and this without any certain Order or Number. These Mr. Ray makes to be a distinct Kind of Herbs, calling 'em *Herbæ Semine nudo Polyspermæ*; where by *Semine nudo* are meant such Seeds as do not put off spontaneously the Integuments or Coverings, which they either have, or appear to have, but fall off covered with it from the Mother-plant.

Pomatum, from *Pomum*, an Apple, an Ointment wherein Apples are a considerable Part; but what is now made under that Name, quite leaves them out.

Pomiferous, from *Pomum*, an Apple, and *fero*, to bear; those Plants are thus called which have the lar-

gest Fruit, and are covered with a thick hard Rind, by which they are distinguished from the *Bacciferous*, which have only a thin Skin over the Fruit.

Pompholix, signifies a Drop or Bladder, containing nothing but Vapour, which seems to be the Reason why this is sometimes called *Nil*, or *Nihilum*, Nothing; because it is a fine subtile Matter that rises and sticks to the upper Part of the Furnace in the making Brass. It very much resembles Tutty, and is frequently called white Tutty. It is cooling and drying, and used as an Ingredient in the *Unguentum Diapompholigos*.

Pomum Adami, a Protuberance in the Fore-part of the Throat. Some fancy to call it by this Name upon a strange Conceit, that a Piece of the forbidden Apple, which Adam eat, stuck by the Way, and was an Occasion of it.

Pons Varolii, *Varolius's* Bridge, is a Process in the Brain, thus called because *Varolius* was the first that took notice of it.

Poples, is that Part where the Thigh is join'd to the *Tibia*. Whence,

Popliteus, is a Muscle that arises from the external and inferior Protuberance of the Thigh-Bone; and, passing over the Joint obliquely, is inserted into the superior and internal Part of the *Tibia*. This assists in bending of the Leg, and turns it inwards.

Poplitea Vena, is also a Vein running under the Ham.

Popularis Morbus, popular Disease, is the same as *Epidemick*; which see.

Populeon, the Name of an official Ointment from the Poplar Leaves, which are its chief Ingredient. *Paracelsus* will have it, that this mixed with any purging Electuary,

tuary, and applied to the Feet, will operate like a Cathartick taken in the common Way.

Pori, Pores, are small Interstices between the Particles of Matter which constitute every Body, or between certain Aggregates or Combinations of them. The most solid Bodies have some Kind of Pores, otherwise all would be alike specifically heavy. Sir *Iaac Newton* has shewn that Bodies are much more rare and porous than is commonly believed. Water is 19 times lighter, and consequently rarer, than Gold: And Gold itself is so rare, as very readily, and without the least Opposition, to transmit the magnetick *Effluvia*, and easily to admit Quick-silver into its Pores, and to let Water pass thro' it: For a concave Sphere of Gold hath, when filled with Water, and soddered up, upon pressing with a great Force, let the Water squeeze thro' it, and stand all over its Out-side in Multitudes of small Drops like Dew, without bursting or cracking the Gold: Whence it may be concluded, that Gold hath more Pores than solid Parts, and by Consequence, that Water hath above 40 times more Pores than Parts. The Magnet transmits its Vertues without any Diminution or Alteration, thro' all cold Bodies that are not magnetick, as Gold, Silver, Brasses, Glasse, Water, &c. The Rays of Light, let them be either Bodies actually coming to us from the Sun, or only Motions or Impressions upon the Medium, move in right Lines, and are hardly ever, unless by great Chance, reflected back again in the same right Line after their Impingence upon Objects; and yet we see that Light is transmitted to the greatest Distances through pellucid Bodies, and that in right Lines. Now how Bodies

should have Pores sufficient for these Effects, may be difficult to conceive, but not impossible: For Sir *Iaac Newton* hath shewn, that the Colours of all Bodies arise from their Particles being of such a determinate Size or Magnitude. Wherefore if we conceive those Particles to be so disposed as that there is as much Porosity as there is Quantity of Matter; and in like Manner those Particles to be composed of others much less, and that these have as much interspersed Vacuity or Space as their Quantity of Matter amounts to; and so on till we come to solid Particles without Pores: Then if in any Body there be 3 (for Instance) of these Sizes of Particles, and that the last be of the Solid, or least Sort, that Body will have 7 times as much Vacuity as solid Matter: If 4 such Degrees, and the last be least and solid, that Body will have 15 times as much Porosity as Solidity: If 5 such Degrees, it will have 31 times as much Space as Solidity: And if 6 Degrees, then it will have 63 times as much Vacuity as solid Matter. And perhaps, in the wonderful Conformation and Fabrick of natural Bodies, there may be other Proportions of Space to Matter to us wholly unknown; whence it is possible there may be yet further greater Quantities of interspersed Vacuity.

Porraceous, is said of many things resembling a Leek in Colour or Scent; as of the Bile, or what is sometimes discharged by Vomiting or Stool, and appearing of a green Colour.

Porta. The *Vena Porta* was so called by the Antients, because they thought that it brought the Chyle, by its meseraic Branches from the Intestines to the Liver, thro'

thro' whose Substance 'tis spread. As it arises out of the Liver, it receives two small Veins from the *Vesica Fellea*, called *Cysticae Gemellae*, one from the Stomach called *Gastrica Dextra*; then advancing a little to the left, its Trunk divides into two Branches, of which the least, called *Ramus Splenicus*, goes to the left *Hypochondrium*; and the greatest, called *Mesentericus*, goes to the right. The *Ramus Splenicus*, so called, because it carries the Blood from the Spleen, receives two Branches, called *Gastrica Minor* & *Major*, which are spread thro' all the Stomach. A Branch of the *Gastrica Major* makes the *Coronariae Stomachicae* at the upper Orifice of the Stomach. It receives three Branches more, two from the *Omentum* and *Colon*, and the third from the *Pancreas*.

Then the *Splenicus* divides into two Branches; the one superior, the other inferior.

The superior receives the *Vas Breve*, and some other Branches which come from the Spleen.

The inferior receives two Branches, viz. the *Epiplois Sinistra*, which is spread thro' the Back-part of the *Omentum*, and that Part of the *Colon* which is under the Stomach. The other Branch is the *Gastro-Epiplois Sinistra*, which is also spread upon the *Omentum*, and upon the Stomach. It makes sometimes the *Vena Haemorrhoidalis Internæ*. The rest of this inferior Branch comes from the Substance of the Spleen.

The right Branch of the *Porta*, called *Vena Mesenterica*, before it divides receives the *Gastro-Epiplois Dextra*, which is spread in the *Omentum* and lower Part of the Stomach, as also the *Intestinalis*, which comes from the *Duodenum* and the *Jejunum*; it receives some Bran-

ches from the *Omentum* and *Pancreas*.

Then the *Mesenterica* divides into three great Branches which run betwixt the Duplication of the *Mesenterium*; two of them come from the right Side, which divide into fourteen Branches, and these are again divided into an Infinity of others less, which are called *Meseraicae*; they creep upon the *Jejunum*, *Ilium*, *Cæcum*, and part of the *Colon*.

The third and last Branch of the *Vena Mesenterica* is spread thro' the Middle of the *Mesenterium*, to that Part of the *Colon* which is on the left Side to the *Rectum*, down to the *Anus*, where it forms the *Haemorrhoidales Internæ*. See *Jecur*.

Portio Dura. See *Nerve*.

Porus Biliaris, the Gall-Passage. See *Jecur*.

Positive Levity. See *Levity*.

Positive Quantities, are such as are of a real and positive Nature, and either have, or are supposed to have, the affirmative or positive Sign + before them, which is always used in opposition to the negative Quantities, which are defective, and have this Sign — before them.

Postulates, or *Demands*, are such easy and self-evident Propositions, as need no Explanation or Illustration to render them more plain; as that a right Line may be drawn from one Point to another, &c. which are often assumed for Dispatch in common Demonstrations.

Potential Cold, is a relative Quality, signifying that such a Thing is not cold to the Touch, but in its Effects and Operation, if taken inwardly. And this is supposed to arise from the Size, Shape, &c. of its component Particles, which give some

some Check or Retardation to the Blood's Motion, whereby it is less agitated, and upon which the sensible Parts of the Body are not so briskly struck by it: The Perception of which Imminution, or Change of Motion in the Organs of Feeling, is called Cold. Hence every Thing that lessens the Motion of the Blood, with relation to the Sensation before made, is cold, and every Thing which encreases it may be called

Potential Heat. See above.

Potion, is a Form of Medicine in a Draught, to be taken at one Time.

Potestates, or

Powers, in Pharmacy, are from a Combination or Union of the essential Oils with the Spirit of any Plant, wherein it is supposed are contained all its principal Vertues, on which account it has this Name.

Powers, in Algebra, are Numbers arising from the Squaring or Multiplication of any Number by itself, and then that Product by the Root, or first Number again; and the third Product by the Root again, and so on *ad infinitum*: as 2, 4, 8, 16, 32, &c. where 2 is called the Root, or first Power, 4 is the Square or second Power, 8 is the Cube or third Power, 16 the Biquadrate or fourth Power, &c. And these Powers, in Letters or Species, are expressed by repeating the Root as often as the *Index* of the Power expresses; as *a* is the Root or first Power, *aa* the Square or second, *aaa* the Cube, and so on: Though sometimes they are thus marked, $a^2 a^3 a^4 a^5$, &c.

Powers, in Mechanick, are the five Mechanick Powers, which see. The Force also or Strength, brought for removing any Weight by any Engine, is called the *Power*. And

the Design of Mechanicks is to teach Men, how to add such a fitting Supplement to the Power, as that it may move any Weight required, with as much Facility, Cheapness, and in as little Room as may be.

Praxis Medica, is that Part of Medicine, which instructs us how to discover a Disease, when present in the Body, and to order the proper Remedies for its Removal.

Præcipitantia, from *præcipito*, to throw down; these are what cause

Præcipitation. This is that Process by which Particles, after having floated, and been suspended some Time in a *Menstruum*, do at length sink to the Bottom. These Particles sometimes precipitate, of their own accord, but oftner by the Assistance of some other Liquor dropp'd into the *Menstruum*. The Reason of the Descent in both Cases is the same.

It may be easily conceived, from what has been said in *Digestion*, how Fluids may be made to sustain Bodies specifically heavier than themselves; namely, by making the Resistance, arising from the Cohesion of the Parts of the Fluid, equal to the Excess, which there is of specific Gravity, in those Bodies above the *Menstruum*. And it has been shewn, that this Resistance is proportional to the Surface of the Corpuscles. Therefore, a contrary Condition to this is all that is requisite, that they may be sustained no longer; or, which is the same Thing, that they may be precipitated: Namely, that the Tenacity of the *Menstruum* be not proportional to the Gravity of the Corpuscles. And this may be produced two Ways.

In the first Place, Precipitation generally follows upon dropping in a Liquor specifically lighter. For,
by

by this Mixture, the Gravity of the *Menstruum*, which always is proportional to the compound Gravities of both Liquors, becomes lighter. The *Menstruum* being thus diluted, the Force of Cohesion is also weakened, so that it is not able to resist, or bear up the Bodies dissolved in it: Hereupon, the *Æquilibrium* being taken off, they are precipitated by the Force of their Gravity. Just in the same Manner as *Hydrometers*, which are easily sustained in Water, upon pouring in a good deal of any burning Spirits, sink to the Bottom of the Glass. And this does not only agree very exactly with the Laws of Mechanicks, but likewise with Experiments themselves. Thus Spirit of *Sal Ammoniac* does very plentifully precipitate the Filings of Metals, which are dissolved in acid *Menstruums*, tho' it be abundantly lighter than any of them. The same thing is done quicker by Spirit of Wine, whose Gravity is known to be almost the least of any. By this Spirit also all Salts, which are suspended in Water, are precipitated, and so unite into Chrystals. So, if you drop in distilled Vinegar the Drops of Antimony, diffused in Water, it falls to the Bottom, and affords the golden Sulphur. After the same manner Water, Vinegar, &c. makes a Precipitation from Acids, tho' more sparingly. Nay, Acids themselves being poured upon others, which are heavier, will precipitate whatever is swimming in them. Thus, Spirit of Salt precipitates either Lead, Copper or Tin, dissolved in Oil of Vitriol. So little Need is there for *Alkali's* in this Business, tho' all the Chymists have unanimously contended for them, as absolutely necessary.

In the second Place, Precipitation will succeed as well, if there be ad-

ded a heavier Liquor to the *Menstruum*. For the Particles of this Liquor, what with their Weight, and what with the *Impetus* they acquire in their Descent, carry down and sink all the solid Corpuscles they meet with in their Way. So that the Corpuscles being thus forced down, and kept there by this adventitious Liquor, cannot mount up into their former Situation. And if any one has a Mind to try the Truth of this Reason by Experiments, there are enough to confirm it: For not only acid Spirits, but Water alone, will precipitate Tinctures of Vegetables extracted by Spirit of Wine. And the very same Tinctures, extracted with Water or Wine, are precipitated very copiously by acid Spirits, which are heavier. After this Manner Metals, which are dissolved in Spirit of *Sal Ammoniac*, are precipitated with Oil of Vitriol, or Spirit of Nitre. The same Bodies, tho' suspended in *Aqua fortis*, are easily precipitated with Oil of Vitriol, or Bezoartick Spirit of Nitre. And this very Oil, if poured upon *Sal Volatile Oleosum*, or any other Solution of Salt, ever so much saturated, does not only sink the smaller Particles, but converts almost the whole Liquor into Salts. For when these Liquors are poured upon one another, the Salts, with which they abound, being put into Motion by their attractive Force, run mutually to embrace one another; and, because they don't recoil far back after the Congress, they are at length so united, as to become like a Solid, there being very little Phlegm remaining. The same may likewise be observed in *Tartarum Vitriolatum*. In making all these Experiments, there happens such a Conflict and Effervescence, as evaporates almost all the Moisture, with which

the Salts are diluted. And upon this depends the *Rationale* of Chimical Coagulation, a Thing of very great Consequence in the Business of Precipitation. Nor can we account for Oil of Tartar's precipitating Bodies dissolved in Acids, any otherwise than from its making a Kind of *Coagulum* with these Corpuscles, and thereby being too heavy for, and exceeding the Tenacity of the *Menstruum*.

Nor does Coagulation succeed only upon mixing of heavier Fluids, but it also very often promotes Precipitation, when the Gravity of the instilled Liquor is intirely equal to that of the *Menstruum*, or but very little different from it. And this Agglutination of Parts is to be seen in many Liquors, but most of all in saline ones. Thus Spirit of *Sal Armoniack*, Spirit of Hartshorn, and human Blood, *Sal Volatile Oleosum*, whose Gravities are nearly the same as that of common Water, precipitate the Solution of Sublimate very plentifully, as you may observe in making the white Precipitate of Mercury. In which Experiment, the Increase of the Weight gives a sufficient Indication of an Union of those Salts, which are pretty copious in the Sublimate, and Liquors which are poured upon it: For that, which subsides at the Bottom, exceeds in Weight the Sublimate which was at first put in. Likewise the Magisteries of Vegetables, extracted by Precipitation, do confirm this Account of Coagulation; for these have a greater specifick Gravity than the Powders of the Plants. This additional Weight, therefore, is to be imputed to the Particles of the Liquors, with which Precipitation is performed.

Præcordia, from *præ*, before, and *καρδία*, Cor, the Heart: the Fore-

part of the Region of the *Thorax* is thus called.

Præcursores, Fore-runners, is by *Paracelsus*, and some of his Followers, used for the antecedent Sign of a Disease.

Prædiction, foretelling the future Events of a Disease.

Prægnant, is when the Female of any Species goes with Young.

Præparantia Vasa. See *Generation parts of, proper to Men*.

Præputium, the Fore-skin. See *Generation parts of, proper to Men*.

Præstigiæ, were certain magical Inchantments, or Tricks, wherewith some pretended to drive away Diseases; but such Practice hath been detested by all rational Physicians.

Præt. Nat. and *P. Na.* are sometimes put for preternatural.

Presbyta, from *πρεσβυς*, *senex*, old, is a Distemper of the Eyes which old People are most subject to, wherein the Globe of the Eye falls so flat, that the visual Rays pass the *Retina* before they unite, whereby there can be no distinct Vision, since the distinct Base falls too far off beyond the *Retina*. This Defect is, therefore, to be helped only with convex Glasses or Spectacles, which will make the Rays converge sooner, and if they are well fitted, exactly on the *Retina*.

Priapismus, the same as *Tentigo*, is continued painful Erection of the Yard; from

Priapus, which sometimes is put for the human *Penis*.

Primæ Viæ, first Passages; are the Stomach, Intestines, and their Appendices.

Principia, Principles or Elements. It is plain, that the common Matter of all mixed Bodies is the same; and that the Matter which composes one Body, in no respect differs from that

that which composes another, but in Figures and Bulks, and what from thence arises: And therefore in the most strict Sense there can be but one universal Principle, viz. Matter.

But as compounded Bodies, under the Management of Pharmacy, appear resolvable into Parts seemingly homogeneous and simple; those Parts have been contended for as true Principles. They are termed, 1. Spirit, or Mercury. 2. Sulphur, or Oil. 3. Salt. 4. Water, or Phlegm. And, 5. Earth.

The first three, by some chymical Writers, are termed active Principles, and the two last passive; but with how much Impropriety, any one will see, who considers the foregoing, and has any tolerable Idea of Matter in general. For there can be no Principle of Action therein, but a *mutual Inclination of Bodies towards one another*; and that as it is in Proportion to the Quantity of Matter in all Bodies, let them exist under what Modifications soever, there can be no Alteration made of this universal Property. And therefore any Division of Matter into what, for distinction-sake from any other Divisions, may be called Spirit, does not give it any Properties inconsistent with this general Law; and consequently such Distinction is not only chimerical, but absurd: Notwithstanding it has occasioned many pretty Amusements from Persons of a fitter Talent for speaking than thinking. But we shall be better set right in this Matter, by taking a View of these five Subdivisions, and examining how far it may be of Use to consider them as Principles.

By Spirit is understood the most fine and subtile Parts of Bodies, which is discoverable by its Volati-

lity and Quickness to the Smell and Taste, and in Distillation rises first. Now if this be said to be an active Part of Matter, with regard to its Facility of Motion, in Comparison to grosser and more bulky Parts; it conveys somewhat intelligible. But the several Parts of a spirituous Body, considered in themselves, have no more a Power of Motion or Action, than as they are, in common with all other Bodies, under the Influence of the Laws of Attraction. By the Lightness of this Sortment of Matter, which for manifest Reasons subjects it to rise and be uppermost where it can get loose, it is, that those Substances wherein it most abounds, are most liable to intestine Motion: and, if it makes its escape, leaves them in that State we call Corruption. This often happens in animal and vegetable Substances; but Minerals have so very little of it in their Composition, that they are not by much so subject to change.

What passes under this Name in Pharmacy, cannot with any Strictness be deemed a Principle, both as it is of different Kinds, as the Bodies from which it is produced differ; and as it is in neither to be drawn entirely uncompounded. There are three very different sorts under this Denomination; the first is the Spirit of Animals, as what is procured from Hartshorn. This seems to be Salts, most capable of Exaltation, wrapped up in a small Portion of Phlegm. The second is the inflammable Spirit of Vegetables, and what is procured by the Help of Fermentation. This seems in a great measure to be a very subtile Oil, blended with a small Portion of volatile Salts. The last is what is forced from Vinegar, Vitriol, and such like acid Substances;

which seems to be nothing else but very acid pungent Salts, put in Fusion by Fire, and set floating in a small Quantity of Phlegm.

Sulphur or Oil is very soft and unctuous, and the lightest Part of Bodies next to Spirit. From the different Proportions and Modifications of this, it is said, compound Bodies receive their different Smells and Colours; and that, by its Tenacity, it is a kind of Glue or Cement to the other Principles: whereby in those Vegetables, wherein it most abounds, we find it preserves them without much Change thro' all the Seasons of the Year. It is very hard to affirm a Possibility of procuring this without a Mixture of other Sortments: For in the lighter Oils of Vegetables, as Rosemary, Lavender, and the like, they appear to have a Mixture of Spirit or volatile Salt, by their Pungency; and in others drawn from Woods, as Guaiacum, Cinnamon, &c. they seem to bring over with them Salts of a grosser and more solid Nature, which makes them specifically heavier than Water.

Under the Denomination of Salt is to be understood most of that which gives Solidity to Bodies, is dissolvable in Water, and affects the Taste with a peculiar Pungency. But there are three distinct Sorts which pass under this Name in Medicine; the fixed, the volatile, and the essential: The fix'd is what remains after Calcination, which is procured by dissolving the saline Parts of Ashes in hot Water, and evaporating it until the Salt is left dry at the Bottom; for that will not rise in Vapour. This is called in the Shops a lixivious Salt; and, it is feared, is more owing to the Fire for its Qualities, than the Plant 'tis produced from: And therefore in the Room of all of this Kind,

which are in the Shops titled the Salt of such peculiar Plants, some with very good Reason substitute Salt of Tartar. But this will be better understood, by turning back to what is explained under the Term *Calcination*. This Volatile is what easily passes over the Helm; as the Salt of Animals. The Essential Salt is that which is obtained by Crytallization from the Juices of Plants; and this is of a Nature between the other two, and may most properly be termed essential, having no Force used in its Production.

If there be in a strict Sense any such thing as a *Principle*, Salt is so; but then it must be that which is termed fossile Salt, or *Sal Gemmae*: For this not only appears to be the plain Production of Nature, but to be the most homogeneous and uncompounded Part, Matter can be divided into. As for the Differences taken notice of between those which pass under the same Denomination, they may be owing to the different Contextures of those Bodies, into whose Composition they are wrought up, whether Vegetable or Animal.

For the first Appearance of this is in Springs and Rivers, into which it is washed by subterraneous Currents; thence by the Sun it is in some measure exhaled in Vapour, from whence it returns again in Snow, Hail, and Dews: For common Rain-water does not seem to partake of it, or in very small Quantities, for Reasons obvious to the Searchers into such Causes, and too long to be explained here. From this Return, the Surface of the Globe is saturated with it, whence it reascends in the Juices of Vegetables; and enters into all those Productions, as Food and Nourishment, which the Creation supplies.

Now

Now in the little Alteration this receives by its Entry into the Juices of most Plants, it is again capable of shooting into Chrystal, not greatly unlike its primitive Form; but by the manifold Comminutions and Elaborations it undergoes in an Animal Body, it is so very far broke and divided, as to pass for a Volatile, and bear very little Resemblance to what it was in its Origin. And that what undergoes this mighty Alteration can never be reduced into its original Form, may be much owing to the sulphureous Particles which it wraps itself in, in its Passages thro' Animal Substances particularly: Which likewise again confirms our former Conjecture, that what passes for Spirit as a Principle, is no other than a highly subtilized Salt, with some Mixture of an exalted Sulphur.

This Division of Matter does most abound with the Force of Attraction, by the Solidity of its Particles; and therefore in Bodies where there is much of it, as there is in many Minerals, they are prodigiously hard and compact, and almost incapable of Decay or Alteration by Time.

Phlegm or Water, is the common Vehicle or Diluter of all solid Bodies; and in Proportion to its Quantity in any Mixture, are the other more languid, or disabled in their attractive Influences. It is much to be questioned whether this can be drawn by Distillation without some Mixture; that which has the least, must come nearest to the Nature of a Principle; and upon that account Rain-water is like to afford it most. In some Minerals, where there are none of the lighter Sortments, this comes over the Helm first; as likewise from inodorous Vegetables.

Earth, and as some call it, *Calcut Mortuum*, is that Part of a Body which is left last in the Furnace, and is capable neither of being raised by Distillation, nor dissolved by Solution.

Probe, from *probo*, to try; is a Surgeon's Instrument to search Wounds and Cavities.

Problem, is a Proposition which relates to Practice, or which proposeth something to be done; as to make a Circle pass thro' three given Points not lying in a right Line.

Proboscis, a Snout; this is most strictly apply'd to the Trunk of an Elephant, but is used also for the same Part in every Creature that bears any Resemblance thereunto.

Procatartick, and

Procatarxis, from *προκαταρξω*, *antegredior*, to go before; is the pre-existent Cause of a Disease, which co-operates with others that are subsequent, whether internal or external; as Anger, or Heat of Climate, which bring such an ill Disposition of the Juices as occasion a Fever: The ill Disposition being the immediate Cause, and the bad Air the *Procatartick* Cause.

Processus, from *procedo*, to go out, are several Protuberances or Prominences of the Bones and other Parts of the Body, distinguished according to the Parts they are in: As

Processus Peritonæi, and

Processus Vermiformis, &c. which see under their respective Names, as also *Apophysis*.

Production, the same as *Processus*.

Procidencia Ani, the falling down of the *Anus*, is from a Relaxation of the *Sphincter* of the *Rectum*, called *Sphincter Ani*; it is cured by Astringents.

Procidencia Uteri, the Falling down of the Womb, is from a Relaxation of the Ligaments which hold it in its Place; its Cure is also in astringent Baths.

Procreation, is every Species begetting or propagating its own Likeness by Generation.

Prodromus, is used in various Senses, but chiefly by Physicians for any one Distemper that is often the Forerunner of another, as a Vertigo is frequently the Prodromus of an Apoplexy.

Progerminus, is applied by M. A. Severinus to such Abscesses, as arise rather from a Redundancy of Humors, than putrid Matter, as Mushrooms spring out of the Earth.

Projection, is a Term used by the Chymists for such a Change as Fermentation makes in Bodies, that is brought about instantaneously, and chiefly takes place in the Process for making the Philosophers Stone; if they are to be regarded.

Proegumena, the same as *Procatartetica*, see *Procatartetic*.

Profluvium, a flowing, is any Kind of Flux, or Liquid Evacuation. Whence,

Profluvium Ventris, a Flux of the Belly, is a *Diarrhœa*, or a Dysentery.

Profundus Musculus, the same as *Perforans*, which see.

Prognosis, and

Prognostica Signa, are Signs by which we know the Event of a Disease, whether it shall end in Life or Death, or be long or short, &c.

Projectiles, are such Bodies as being put into a violent Motion by any great Force, are then cast off or let go from the Place where they received their Quantity of Motion, and do afterwards move at a distance from it; as a Stone thrown out of one's Hand, or by a Sling, an Ar-

row from a Bow, a Bullet from a Gun, &c.

There hath been a great Dispute about the Cause of the Continuation of the Motion of Projectiles, or what it is that makes them move after they part from the Force that began the Motion. The *Peripatetics* will needs have it, that the Air being by the Motion of the Hand of the Slinger, &c. put into a most violent Agitation, and forced rapidly to follow the Motion of the Stone, while it is accelerated in the Hand of the Slinger, doth, to prevent a *Vacuum*, press with all due Velocity after the Stone when it parts from the Hand, and thrusts it forwards as long as it can. But this Account seems very unconceivable; and there needs nothing more to solve the Motion of projected Bodies, but only to consider, that all Bodies being indifferent to Motion or Rest, will necessarily continue the State which they are put into, unless they are forced to change it by some other Force impressed upon them. Thus if a Body be at Rest, so it will eternally abide, if nothing move it; or if it be in Motion, so it will eternally move uniformly on in the same right Line, if nothing stop it. Wherefore when a Stone is put into any Degree of Motion, by the Rotation of the Arm of the Man that flings it, whatever Degree of Velocity it had acquired when it parted from the Hand, the same it would ever after keep if it moved in *Vacuo* and had no Gravity: But because it hath a Tendency, as all Bodies (by the Law of Nature) have, towards the Centre of the Earth, and is also resisted by the Air all along as it goes, in proportion to its Velocity, it plainly follows, that it must needs be both continually drawn downwards,

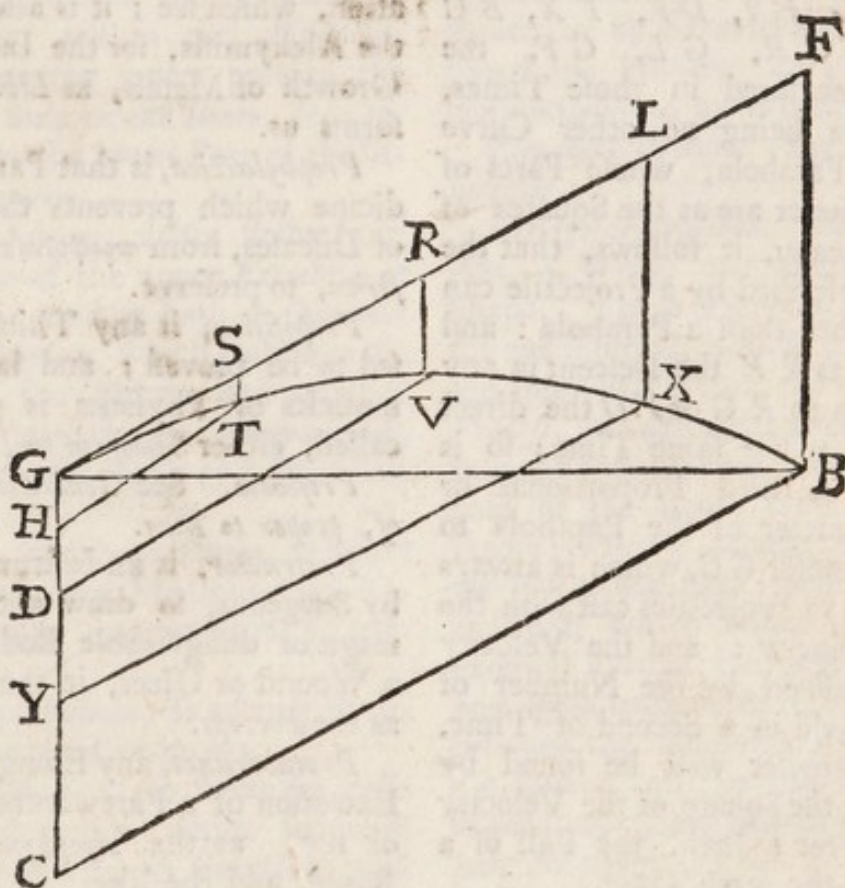
and also continually retarded in its progressive Motion forwards, and consequently at last fall down to the Earth, and stop.

The Line of Motion which a Body projected describes in the Air, (abstracting from the Resistance of the Medium) is, as hath been proved by *Galileus*, and many others, and particularly, by our Sir *Isaac Newton*, *Prop. 4. Cor. 1.* of his second Book, the Curve of a Parabola: which Line is also describ'd by every descending Body.

He shews also, That if the Line

of Direction of the projectile Motion of any Body, the Degree of its Velocity, and, at the Beginning the Resistance of the Medium be given, the Curve, which it will describe, may be discovered, and *vice versa*. He saith also in *Schol. Prop. X. Lib. 2.* That the Line which a Projectile describes in a Medium uniformly resisting the Motion, rather approaches to an Hyperbola than a Parabola.

The learned Dr. *Halley* proves all Projectiles to describe a *Parabola* thus :



Let the Line GRF be the Line in which the Project is directed, and in which, by the first *Axiom*, under the Word *Descent*, it would move equal Spaces in equal Times, were it not deflected downwards by the Force of Gravity. Let GB be the horizontal Line, and GC a

Perpendicular thereto. Then the Line GRF being divided into equal Parts, answering to equal Spaces of Time, let the Descents of the Project be laid down in Lines parallel to GC , proportioned as the Squares of the Lines, GS, GR, GL, GF , or as the Squares of the Times, *i. e.*

let them be drawn from S to T , from R to U , from L to X , and from F to B , and draw the Lines TH , VD , XY , BC , parallel to GF ; I say, the Point T , V , X , B , are Points in the Curve describ'd by the Projectile, and that the Curve is a Parabola.

That the Points are in the Curve, is evident by *Axiom* 2. under the Word *Descent of heavy Bodies*, and the Part of the Descent $G X$, $G D$, $G Y$, $G C = S T$, $R V$, $L X$, $F B$, being as the Squares of the Times, (by *Prop.* 2. under the Word *Descent*) that is, as the Square of the *Ordinates*, $H T$, $D V$, $Y X$, $B C = G S$, $G R$, $G L$, $G F$, the Spaces measured in those Times, and there being no other Curve but the Parabola, whose Parts of the Diameter are as the Squares of the *Ordinates*, it follows, that the Curve described by a Projectile can be no other than a Parabola: and saying, as $R V$ the Descent in any Time, is to $R G$ or $V D$ the direct Motion in the same Time; so is $V D$ to a third Proportional or the Parameter of the Parabola to the Diameter $G C$, which is always the same in Projectiles cast with the same Velocity: and the Velocity being defined by the Number of Feet mov'd in a Second of Time, the Parameter will be found by dividing the Square of the Velocity by 16 Feet 1 Inch, the Fall of a Body in the same Time.

Pronatores Musculi, are two in Number; the first,

Pronator Radii Quadratus, is a Muscle of the *Radius*, which ariseth broad and fleshy from the lower and inner Part of the *Ulna*; and passing transversely over the Ligament that joins the *Radius* to the *Ulna*, is so inserted into the superior

and external Part of the *Radius*: which it helps to pull inwardly, with the

Pronator Radii Teres, which is a Muscle, some call also *Pronator superior Rotundus*, and ariseth fleshy from the internal Extuberance of the *Os Humeri*, where those bending the *Carpus* and Fingers do arise; and firmly adhering to the *Flexor Carpi Radialis*, it descends obliquely downwards to its fleshy Insertion a little above the *Radius*, in the Middle, externally: Its Use is to move the *Radius* inwards.

Propagation, the same as Procreation, which see; it is also us'd by the Alchymists, for the Increase or Growth of Metals, as *Libavius* informs us.

Prophylactica, is that Part of Medicine which prevents the Attack of Diseases, from $\pi\rho\omicron\phi\upsilon\lambda\alpha\sigma\sigma\omega$, *præservo*, to preserve.

Proposition, is any Thing proposed to be proved; and in Mathematicks or Physicks is generally called, either *Theorem* or *Problem*.

Prostatæ. See *Generation Parts of, proper to Men*.

Protractor, is an Instrument used by Surgeons, to draw out any foreign or disagreeable Bodies from a Wound or Ulcer, in the Manner as the *Forceps*.

Protuberance, any Elongation, or Extension of a Part whether natural or not, as the *Apophyses* of the Bones, and the like.

Pruniferous, are such Trees or Shrubs, whose Fruit is pretty large and soft, with a Stone in the Middle; in which Kind the Flower adheres to the Bottom of the Base of the Fruit.

Prurigo, and

Pruritus, the Itch, or any Dryness and Roughness of the Skin, caused

caused by sharp Humors, which stagnate in, and corrode the milary Glands.

Pseudos, ψεύδης, false or spurious, is therefore compounded with many Words in that Sense, as

Pseudo-medicus, one who pretends to be a Physician, who is not really so; and so of many other Things.

Psilothron, is an external Form of Remedy, used to take away Hair from the Body; signifying the same with *Depilatory*, which see.

Psoas, is a Muscle, that ariseth from the internal Side of the transverse Processes of the *Vertebrae* of the Loins, within the *Abdomen*; and descending upon part of the internal Side of the *Ilium*, it is inserted into the lower Part of the little *Trochanter*.

Psoas parvus, arises fleshy from the Inside of the upper *Vertebrae* of the Loins, and it hath a thin and broad Tendon, which embraces the *Psoas* of the Thigh, and which is inserted into the *Os Innominatum*, where the *Os Pubis* and *Ilium* join together.

Psoa, a Scab, or Tetter. Whence

Psoica, are Medicines good against Scabs, and cutaneous Eruptions.

Psorophthalmia, is a scurfy Eruption upon the Eye-brows.

Psychagogica, so *Schneider* calls those Medicines which suddenly raise the Spirits, in Faintings, and the like, as

Psychologia, ψυχολογία, is any Treatise of the Soul, as that of *Willis de Anima Brutorum*; from ψυχή, *Anima*, the Soul.

Psychrolusia, or *Psychrolutron*, ψυχρολούσια, is the Cold Bath; or washing in cold Water; much used by the Antients, to restore the Tone of the Parts, after warm

bathing, and to give a Firmness to the Body.

Psydracium, is a pointed white Pustule, or Tumor of the Skin, containing a ferous Humour.

Ptarmos, πταρμός, Sneezing; whence

Ptarmica, are the same as *Sternutatores*, Medicines which excite Sneezing.

Pterygium, from πτέρων, *Ala*, a Wing, is apply'd to several Parts of the Body which have any Resemblance to Wings; as the *Pterygoides*, which are described under *Aliformes Musculi*, which see. It is also a Term given, by some Surgeons, to an Excrescence of Flesh round the Fingers, or Toes, as is often occasioned by Whitloes.

Pterygoid Process. See *Maxilla superior*.

Pterigoidei Musculi, from πτέρων, *Ala*, a Wing, and εἶδος, *Forma*, Shape. There are two of these; the one internal, which arises from the internal Part of the *Pterygoid Process*, and descends to be inserted into the inferior Part of the internal Side of the lower Jaw, near its Angle; when it acteth, it draweth the Jaw to one Side; and the other external, which arises from the external Part of the same Process, and goes backwards to be inserted between the *Condylod Process* and the *Corone* on the Inside of the lower Jaw. This pulleth the lower Jaw forwards.

Pteristaphylini, from πτέρων, *Ala*, a Wing, and σφαυλή, *Uvula*; are two Muscles, the one external, which arises fleshy from a small Protuberance upon the Under-side of the Body of the *Os Sphenoides*, and goes directly to be inserted into the Hinder-part of the *Uvula*; and the internal, which arises from the same Protuberance of the *Os Sphenoides*

Sphenoides; and growing into a small round Tendon, which passes over a small Process, like a Hook, of the *Processus Pterigoidæus*, from thence reverting, it is inserted into Part of the *Uvula*. When the first of these acteth, it pulleth the *Uvula* backwards; when the second contracteth, it pulleth it forwards, because of the Pulley through which its Tendon passes, which alters the Direction of its Motion; both which are necessary for the Articulation of the Voice, and in Deglutition, that nothing may regurgitate into the Nose which is taken in by the Mouth. These Muscles are, by some, call'd, the *Sphenopalatinus* and *Sphenopharyngæus*, from σφην, *Cuneus*, a Wedge, and φάρυγξ, *Oesophagus*, because it stops the Aperture of the Gullet like a Wedge; and *Pterygopalatinus*, or *Sphenopterygopalatinus*, from its Wing-like Resemblance upon the Palate.

Ptisān, a thin Drink, Decoction, or Julep.

Ptyalism,

Ptyalon,

Ptyisma, and

Ptyismagogue, are all from πτύω, *spuo*, to ouze out, as Spittle does out of the Glands; and therefore, express every such Discharge, whether it amounts quite to a Salivation, or not.

Pubes, is the external Parts of the *Pudenda*, or Parts of Generation in both Sexes, and which, in adult Persons, is covered, more or less, with Hair.

Pudenda. See parts of Generation proper to Women, or Men.

Pubis Os. See *Ossa Innominata*.

Puerpera, strictly signifies a Woman just after Delivery, or in Child-bed; though some use it for them while pregnant.

Pugil, is the eighth Pair of an Handful.

Pulmonalis Arteria. See *Artery*.

Pulmonalis Vena. See *Veins*.

Pulmo, the Lungs. See *Lungs*.

Pulmonary Vessels, are all those Vessels which pass through the Lungs.

Pulpa, *Pulp*, is the soft Part of Fruit, Roots, or other Bodies, which is extracted by Infusion, or Boiling, and is passed through a Sieve.

Pulsation, and

Pulse. Besides what has been said under *Artery* (which see) it is necessary to be acquainted with the Differences of Pulses. An *high* Pulse is either vehement or strong; but if the Dilatation of the Artery does not rise to its usual Height, it is called a *low* or *weak* Pulse; but, if between its Dilatations there passes more Time than is wont, it is called a *slow* Pulse; but if less Time, it is called a *quick* Pulse. Again, if the Coats of an Artery feel harder than usual from any Cause whatsoever, it is called an *hard* Pulse; but if, by any contrary Cause they are softer, then it is called a *soft* Pulse: so that there are, of Use to be known, three different Kinds of Pulses, to wit, an *high* and a *low* Pulse, a *quick* and a *slow* Pulse, and a *hard* and a *soft* Pulse. If there are such as a *swift* and an *heavy* Pulse, yet they are not distinguishable enough to be of any Moment to a Physician; for a Pulse is *swift*, when an Artery continues in its Height of Dilatation a less Time than usual, and *heavy*, when a greater Time; but that Difference is imperceptible to the Finger. For there are 3600 Pulses in a Man of moderate Health within the Compass of an Hour, since every Pulse answers to the Second of a Minute, and some Part of that Second must be allotted for the Space of Time the Sides of

an Artery take before they come to their utmost Dilatation, and another Part for that Space in which they fall back to their natural Capacities ; all which must be within the Second of a Minute, or the 3600th Part of an Hour. From whence it is plain, that such a Part of a Second of Time as is allotted for the Duration of the utmost Dilatation, must be so small, that we cannot, by the Touch of our Fingers, distinguish any to be lesser. Then an unequal and intermitting Pulse are only Species of a *quick* and a *slow* Pulse : for if the Quickness or Slowness is always uniform to itself, it is an equal Pulse ; but, if it be not uniform to itself, then it is unequal and intermitting.

Pulsion, is the driving or impelling any Thing forward ; from *pello*, to drive. See *Attraction* and *Electricity*.

Pulverization, from *pulvis*, Powder ; is the reducing any Thing to Powder.

Punctum Lachrymale. See *Carunculae Lachrymales*.

Punctum Saliens, the Leaping-point : That Speck in the Egg, which is called the *Treddle*, and is observed first to have Motion in the Formation of the Chick, is thus called.

Puncture, from *pungo*, to prick, is any Wound made by a pointed Instrument.

Pupilla, the Pupil. See *Eye*.

Purgantia, Purgatives ; and

Purgation, from *purgo*, to cleanse, to purge. See *Catharticks*.

Purification, the same as *Depuration* ; the making any Thing fine, or clearing it from Dross, or Fæces.

Purpurea Febris, Purple Fever ; is a Fever with an inflamed Skin, particularly in the Face ; and is most common amongst Children.

Purulent ; what is turned into Matter, as in the Suppuration of a Tumor ; as,

Pus, signifies Snot, or any Thing suppurated into Matter.

Pustulae, Pustules : the Eruptions in the Small-pox, or any Thing of that Kind, are thus called.

Putrefaction, from *putris*, or *putredo*, Rottenness, and *facio*, to make ; is any kind of Fermentation, or intestine Motion of Bodies, as tends to the Destruction of that Form of their Existence, which is said to be their natural State.

Putrid Fever, is that kind of Fever, where the Humors, or Part of them have so little circulatory Motion, that they fall into an intestine one, and putrefy ; as is commonly the Case after great Evacuations, great or excessive Heat, where there is such a Scarcity of Spirits, that the Solids do not sufficiently vibrate ; and in these Cases the Pulse is low, and Flesh cooler than naturally at first.

Pylorus, from *πύλη*, *Janua*, a Gate, and *ᾠρέω*, *custodio*, to keep, is that narrow Part of the Stomach that opens into the Intestines. See *Stomach*.

Pyramidales Musculi, are a Pair of Muscles belonging to the *Abdomen*, so called, from their Resemblance to a Pyramid in Figure : they rise with a fleshy Beginning, from the outer and upper Part of the *Os Pubis*, and growing narrower and narrower, are inserted in the *Linea Alba*, sometimes near the Navel. Sometimes one, and sometimes both these Muscles are wanting.

Pyramidalia Corpora. See *Corpora Pyramidalia*. Some other Parts of the Body likewise frequently have this Name given them, on Account of their Figure.

Pyre-

Pyrenoides Processus, is a Process of the second *Vertebra*, thus called, from its Shape, as also, for the same Reason *Dentiformis*, Tooth-like Process.

Pyroenus, from *πῦρ*, *Ignis*, Fire, and *οἶνος*, *Vinum*, Wine, is *Rectified Spirit of Wine*; thus called, because it is made by Fire, or rather rendered of a fiery Nature, so as to be totally inflammable.

Pyretica, *Pyreticks*, from *πῦρ*, *Ignis*, Fire, or Heat, are such Medicines, as are good against Fevers; and

Pyretologia, from the same Derivation as the foregoing, and *λέγω*, *narro*, to describe, is a Discourse upon, or Description of Fevers.

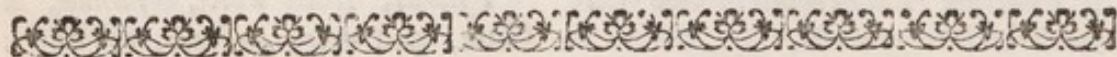
Pyriiformis Musculus, is a Muscle of the Thigh, which receives its Name from its Figure; it is also called *Iliacus Externus*, from its Situation: Its Beginning is round and fleshy from the inferior and internal

Part of the *Os Sacrum*, where it respects the *Pelvis* of the *Abdomen*, and descending obliquely in the great *Sinus* of the *Os Ilium*, above the acute Process of the *Ischium*, and joining with the *Glutæus Medius*, it is inserted, by a round Tendon, to the superior Part of the Root of the great *Trochanter*. This moves the *Os Femoris* somewhat upwards, and turns it outward.

Pyrotechny, from *πῦρ*, *Ignis*, Fire, and *τέχνη*, *Ars*, Art; is the Art of Chymistry, because Fire is the chief Instrument the Chymists make use of. Some also have used it to signify the Art of Fire-works.

Pyroticks, are Medicines that are actually or potentially hot, such as will burn the Flesh, and raise an *Escar*, from *πῦρ*, *Ignis*, Fire.

Pyxis, is properly a Box; and, from its Resemblance thereunto, the Cavity of the Hip-bone, or *Acetabulum*, is also sometimes called *Os Pyxidis*.



Q.

Q. Pl. Quantum placet, as much as you please.

Q. V. Quantum vis, as much as you will.

Q. S. Quantum sufficit, as much as sufficeth.

Quadratus, four-square; this Name is given to many Muscles, on Account of their Shape; as,

Quadratus Maxillæ inferioris, is a broad membranous Muscle, which lies immediately under the Skin; it ariseth from the upper Part of the *Sternum*, from the *Clavicula*, and from the *Acromium*: It covereth all the Neck, and adheres firmly to the lower Edge of the lower

Jaw, and being produced, it covers also the lower Part of the Cheeks. When it acteth, it pulls the Jaw downwards.

Quadratus Labii inferioris, is the same as *Depressor Labii inferioris*; which see.

Quadratus Lumborum, ariseth from the posterior Part of the Spine of the *Ilium*, and is inserted into the Inside of all the transverse Processes of the *Vertebrae* of the Loins. This Muscle moveth the Body upon the Loins to one Side, and both together help the *Rectus Abdominis* in bending the Body forward.

Quadratus Radii, arises by a broad and fleshy Beginning, from the lower and internal Part of the *Ulna*; it passeth over the Ligament that joins the *Radius* to the *Ulna*, and is inserted as broad as its Beginning into the external and lower Part of the *Radius*.

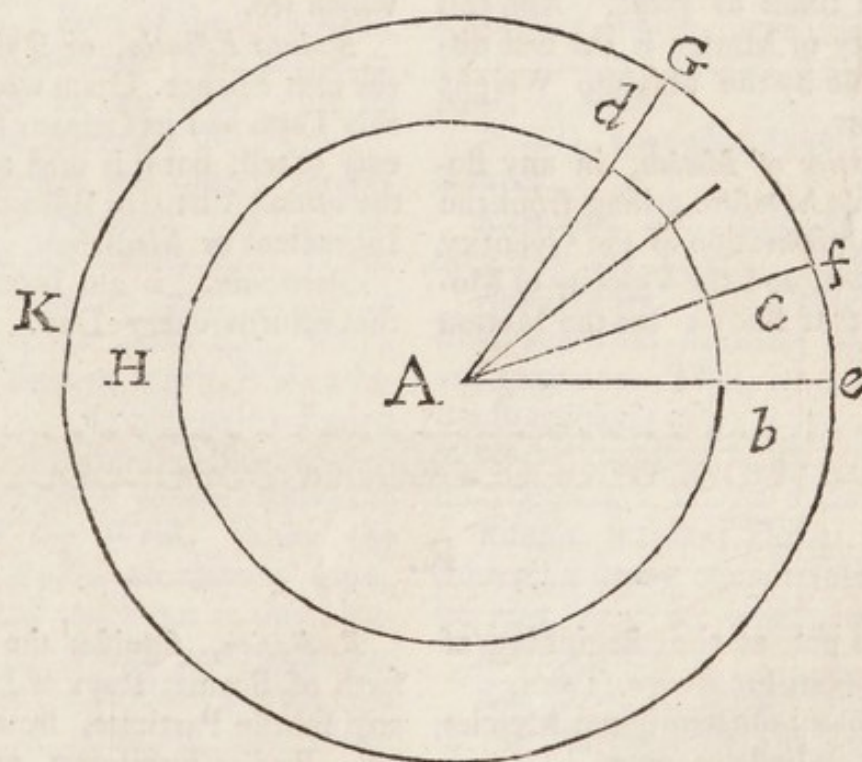
Quadragesimi, are four Muscles of the Thigh, the *Pyriformis*, the two *Gemini*, and the *Quadratus*; which see under their respective Names. It seems as if these had been taken for one Muscle, and named *Quadragesimus*.

Quadrupes, from *quatuor*, four, and *pedes*, Feet, are all four-footed Beasts.

Quality, signifies, in general, the Properties or Affections of any Being, whereby it acquires some particular Denomination. Those

which are cognizable by the Senses, as *Figure*, *Solidity*, &c. are called *Sensible Qualities*. This Term has, by many Writers, served for a Cover only of their Ignorance, when joined with occult, or any such unintelligible Adjunct; but a sounder Way of Reasoning has taught, that all Qualities are remitted, or have their Power or Efficacy abated, in a duplicate *Ratio* of the Distance from the Center of the Radiation, or Exertion of the Quality. Any Quality of the Body is said to be vitiated, when any sensible Disposition thereof is hurt; tho' this Phrase is principally us'd with regard to Colour and Smell.

Let *A* be a Centre from whence any Quality exerts itself round about, according to the right Lines



Ae, *Af*, &c. The Efficacy of the Quality, be it Heat, Cold, Odour, &c. will be (at equal Distances from *A*) as the *Spissitude*, or Thick-

ness of the Rays, *Ab*, *Ae*, *Af*. But the Rays within the inner Circle, or rather spherical Superficies *bcdH*, when they come to be

be extended to the outer spherical Surface, *efGK*, will not be so thick as before, and that in Proportion reciprocally as the Spaces they take up; that is, if the outer Surface be double of the inner, the Rays there will be but half as thick: but since spherical Surfaces are as the Squares of the Radii, therefore the Efficacy of the Quality in the inner Surface will be to that of the outer, as *Ae*, Square to *Ab* Square. *Q. E. D.*

Quantity Positive. See *Positive Quantity*.

Quantity Negative. See *Positive Quantity*.

Quantity of Matter, in any Body, is its Measure arising from the joint Consideration of its Magnitude and Density: As if a Body be twice as dense, and take up twice as much Space as another, it will be four times as great. And this Quantity of Matter is the best discoverable by the absolute Weight of Bodies.

Quantity of Motion, in any Body, is its Measure arising from the joint Consideration of the Quantity of Matter, and the Velocity of Motion of that Body: for the Motion

of any Whole in the Sum or Aggregate of the Motion in all the several Parts. And though in a Body twice as great as another, moved with an equal Velocity, it will be double; yet, if the Velocity be double also, the Quantity of the Motion will be quadruple. See *Laws of Motion, of Nature, Gravitation, Attraction, &c.*

Quartan, is an intermitting Fever, where the Fit returns every third Day, the two sick Days being reckoned, and the two intermitting ones making four.

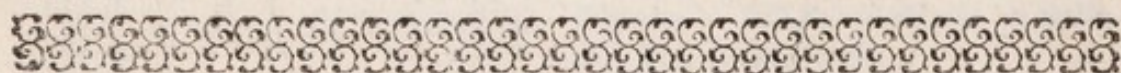
Quid pro quo, the same as *Succedaneum*, when one Thing is made Use of to supply the Defect of another.

Quinquenervia, Plantain; because it has five Strings or Nerves in each Leaf.

Quinsy, the same as *Angina*, which see.

Quinta Essentia, or *Quintessence*, the fifth Essence. Upon what Fancy this Term had its Origin, seems not easy to tell, but it is used to express the utmost Virtue or Efficacy of any Ingredient or Medicine.

Quotidian, is an Intermittent, that returns every Day.



R.

R. is put at the Beginning of Prescriptions for *Recipe*, Take.

Rachitæ; the semispinal Muscles are thus called by some.

Rachitis, the Rickets, is a Distemper in Children from an unequal Distribution of Nourishment, whereby the Joints grow knotty, and the Limbs uneven. Its Cure is performed by Evacuation and Friction.

Radiation, signifies the casting forth of Beams, Rays of Light, or any subtile Particles, from a Centre, *Radius* signifying any Line from such a Point.

Radical Moisture, is a Term that some have had strange Notions about; but if it be limited to any intelligible Signification, we can understand by it nothing else but the

the Mass of Blood, which is the Promptuary from whence all other Fluids in an human Body are derived.

Radicle, is a Term amongst Botanists that denotes that Part of the Seed of a Plant, which, upon its Vegetation, becomes its Root. This, in Corn, is that which shoots forth in the Malting, and is called *Come*, probably from *Coma*, Hair, which it somewhat resembles.

Radius Externus, is the same as *Extensor Carpi*; which see.

Radius Internus, is the second Muscle of the Wrist, and arises from the internal Extuberance of the *Humerus*, and upper Part of the *Ulna*, and stretching along the *Radius*, is inserted into the first Bone of the *Metacarpus* that sustains the Fore-finger, and with the *Cubitus Internus*, bends the Wrist. They have their Name from

Radius, a Bone of the Fore-Arm, which accompanies the *Ulna* from the Elbow to the Wrist. In its upper End it hath a small Cavity, which receives the outer Protuberance of the *Humerus*. The Circumference of this Cavity rolls in the small *Sinus* in the upper End of the *Ulna*. Near its lower End, which is bigger than its upper, it has a little *Sinus*, which receives the End of the *Ulna*; and in its Extremity it hath two *Sinus*'s, which receive the Bones of the Wrist. Altho' the *Ulna* and *Radius* accompany one another, they touch but at their Extremities; for they bend from one another in the Middle, but are ty'd together by a strong and broad membranous Ligament. The upper End of the *Ulna* is biggest, because upon it the Articulation at the Elbow is performed; but the lower End of the *Radius* is biggest, because upon it only the Hand is ar-

ticulated. The *Radius* moves either backward or forwards upon the *Ulna*, by which means the Palm of the Hand is turned either upwards or downwards; which two Motions are call'd *Pronation* and *Supination*. Nor could any other Articulation have given these two Motions to the Hand; for, tho' an *Artbroidea* admits of a Motion to every Side, yet we cannot, by that, turn the Forepart of our Arm backward: and how useless the Hands had been without these Motions, every one may easily perceive. This is also called *Focile Minus*, the lesser *Focile*.

Radius, in Geometry, is the Semi-diameter of a Circle.

Radix, is strictly the Root of any Plant or Vegetable; and thence, in a figurative Sense, *Radical* is frequently used to signify the principal or generative Point of any Body or Quantity, as *Radical Moisture*: and a Number, which, multiply'd into itself, makes a Square, is call'd the Root, or *Radix*.

Radula, a wooden Spatule, or a Scraper.

Ramenta, are little Slips or Shreds of any Thing. And,

Ramification, is a Collection of small Branches shooting out from any great one. Thus, in Anatomy, the Branchings of an Artery, Vein, or Nerve, are called its *Ramifications*; from *Ramus*, a Bough or Branch.

Rancid, is said of Things, which contract a strong offensive Smell by keeping, as all fat Substances.

Ranula, and

Ranulares, are those Veins which lie conspicuous under the Tongue; and this is likewise used, by our Surgeons, for little Swellings upon the Glands about the same Parts.

Rare: A Body is said to be thus, that takes up more Space, in Proportion to the Quantity of Matter it con-

contains, than another does. And,

Rarefaction, is that Extension of the Parts of any Body, that makes it take up more Room than it did before. See *Distillation*.

Rasure, the same as *Abrasion*, or any Thing done by scraping or shaving, as the *Rasuræ C.C.* and *Eboris*, are made.

Ratio, Reason, is when two Bodies are compared with one another with respect to their Bulk. Some confine it to Numbers only, and call it *Proportion*, expressing, by it, the Comparison of one single Quantity to another.

Ray, is, most strictly, a right Line, drawn, or flowing from any Point, and is a Term most used in *Opticks*.

Reaction, from *reago*, to act back upon; is a Term much used in *Physicks*. See *Nature, Laws of*.

Receptaculum Chyli, the Receiver of the Chyle. See *Lacteal Veins*.

Receptarii Medici; so *Langius* calls those who set up for Physicians upon the Stock only of a great many Receipts, without being able to reason about their Properties or Efficacies.

Receptaculum Chymicum, and

Recipient, is the Vessel, which, in *Distillation*, is made the Receiver.

Reciprocation, is when two Diseases or Symptoms alternately succeed one another.

Recrement, sometimes signifies any superfluous Matter mixed with other that is useful; and sometimes such secreted Juices in the Body as are afterwards of Use to the Economy.

Recrudescent, when any Distemper returns that was gone off; as the Paroxysms of Intermittents.

Rectification, is drawing any Thing over again by *Distillation*, to make it yet higher, or finer.

Recti Musculi. See *Eye*.

Recti-lineal, right-lined; that is, having straight Lines.

Rectus, is a Muscle of the lower Belly, which arises from the *Sternum*, the Extremity of the last two Ribs, and goes straight down to the Fore-part of the *Abdomen* to be inserted in the *Os Pubis*. It hath three or four Innervations, or rather tendinous Coarctations of its fleshy Fibres, which divide the Belly of it, as it were, into so many distinct Muscles. It hath Veins and Arteries, which creep on its Inside, from the Mammillary and Epigastrick Vessels, which communicate, that the Blood may return by the Mammillary Veins, when the Passage is stopped by the Epigastrick, which are compressed in Women with Child.

Rectus, is also a Muscle of the Leg, that ariseth from the lower Part of the Spine of the *Ilium*, and descending between the two *Vasti*, is inserted with them. Likewise,

Rectus, is a Muscle that lifts up the Eye-lid. It ariseth from the Bottom of the Orbit of the Eye, where the Optick Nerves pierce the *Cranium*, and passing above the *Superbus*, is inserted, by a large Tendon, into the Border of the Eye-lid.

Rectus Major, is the third Muscle that pulleth the Head up or backwards. It ariseth from the Spine of the second *Vertebræ* of the Neck, and is inserted into the lower Part of the *Occiput*. And,

Rectus Minor, is the fourth Muscle for this Office. It lies under the former, and cometh from the back-part of the first *Vertebra* of the Neck, and is inserted below the former. These are also, from their Office, called *Renuentes*.

Rectus Internus Major, ariseth from the Fore-part of the five interior transverse Processes of the
Ver-

Vertebræ of the Neck, and is inserted into the foremost Appendix of the occipital Bone, near its great Hole. And the

Rectus Internus Minor, lies on the Fore-part of the first *Vertebra*, like the *Rectus Minor* on the Back-part, and is inserted into the anterior Appendix of the *Os Occipitis* immediately under the former. These nod the Head forwards, being Antagonists to the *Recti Minores*. These are also called *Annuentes*.

Recti Laterales, are another Pair, which come from the transverse Processes of the first *Vertebræ*, and are inserted near the *Processus Mamillaris*. They help to move the Head to one Side.

Rectum Intestinum. See *Intestines*.

Recurfus, is used by *Bellini* for the Repetition of *Paroxysms* in an Intermittent. And

Recurrent Nerve, is a Branch of the *Par Vagus*, bestowed upon the Organs of Speech, whence also called *Vocal Nerve*; and thus, because it descends and ascends again to supply the Muscles of the *Larynx*. See *Nerve*.

Redintegration; Chymists thus call the restoring any mixed Body or Matter, whose Form has been destroyed, to its former Nature and Constitution.

Refection, is the receiving Food or Nourishment.

Reflection, in general, is the Regress or Return that happens to a moving Body, because of its meeting another; as the Rays of Light are variously reflected by Bodies they cannot pass through.

Refluent, flowing back, is generally ascribed to the venal Blood, because that flows back to the Heart.

Refraction, is the Incurvation or

Change of Determination in the Body moved, and is chiefly applied to the Rays of Light by the Writers in Opticks. And

Refrangible, is whatsoever is capable of Refraction.

Refrigeratory, a Cooler, is that Part of a distilling Vessel that is placed about the Head of a Still, and filled with Water to cool the condensing Vapours; but this is now generally done by a Worm, or spiral Pipe, running thro' a Tub of cold Water.

Regeneration, is used in so different a Manner by the Chymists, that it is hard to say what they meant by it; but it seems to be what they understand by Revivification, which see.

Regimen, Government, is used for that Care in Diet and Living that is suitable to every particular Course of Medicine.

Register, is a Contrivance in chymical Furnaces to make the Heat immediately more intense or remiss, by letting more or less Air come to the Vessel.

Regius Morbus, the Kingly Disease. The Jaundice is thus called, but for what Reason does not well appear.

Regnum, is by the Writers in Physical and Natural History applied to certain Classes of natural Bodies; as the animal, vegetable, and mineral Kingdoms, &c.

Regular, Constant and Uniform, in opposition to Irregular, or Anomalous, which keeps to no certain Course or Standard; both frequently applied to Diseases, especially acute ones, as the Measles, Small-pox, and the like.

Regular Body, is a Solid, whose Surface is composed of regular and equal Figures, and whose solid Angles are all equal; and of which there

there are five Sorts, *viz.* 1. A Pyramid comprehended under four equal and equilateral Triangles. 2. A Cube, whose Surface is composed of six equal Squares. 3. That which is bounded by eight equal and equilateral Triangles. 4. That which is contained under twelve equal and equilateral Pentagons. And, 5. A Body consisting of twenty equal and equilateral Triangles. And Mathematicians demonstrate, that there can be no more regular Bodies than these five.

Regulus, is the finer and most weighty Part of Metals, which settles at the Bottom, upon melting.

Reiteration; the same as *Repetition*.

Relaxation, is a Dilatation or slackening any Parts or Vessels.

Remedium, signifies every Thing made Use of in the Cure of Diseases.

Remission, is when a Distemper abates, but does not go quite off before it returns again, as it is common in Fevers which do not quite intermit.

Renes, the Kidnies; which see.

Renes Succenturiati. See Kidnies.

Renitency, striving backwards, is that Resistance which there is in solid Bodies when they press upon, or are impelled one against another; or that Resistance that any Body makes on the Account of its Weight.

Renuentes, from *renuo*, to nod backwards, are the same Muscles as the *Rectus Major* and *Minor*, (which see;) thus called, from their Office.

Repellents. To understand rightly the Operation of such Medicines, it may be necessary to observe, that by repelling is meant

those Means which prevent such an Afflux of a Fluid to any particular Part, as would raise it into a Tumor: But to know how this may be effected, it will be convenient to attend to the several Causes which can produce a Swelling, or force out of the Vessels any of their fluid Contents by some unnatural Discharge.

All Tumors have necessarily one of these in their Cause; either an Increase in the Velocity or Quantity of the Fluids, or a Weakness in some particular Part: and sometimes both concur. An Increase in the Velocity of the Fluids makes them more forcibly push against and distend all their Parts in their Circuit: If therefore, any Part be unequally pressed, or relaxed by external Injuries, that will be more elevated than any other; and for want of equal Resistance with the rest of the Body, will at length receive such a Quantity of Fluid as will raise it into a Tumor, especially if any of its Vessels be obstructed; because the Protrusion of fresh Matter *à Tergo*, will continue to add thereunto, until the Part is upon the utmost Stretch, and can hold no more. In this Case all those Means are said to be repellent, which check the Growth of the Tumor, and assist the reflux Blood in taking up the obstructed Matter, and washing it again into the common Stream. This Intention is chiefly favoured by Evacuation and Revulsion; for whatsoever lessens the Quantity of the Fluid, will diminish the Force upon the tumefied Part. But it concerns us most to know, how external Application to the Part itself helps to this Affair.

Herein a Medicine comes to be a Repellent, by consisting of such subtle Parts as may transmit some of them thro' the Pores, and help to render the obstructed Matter more fluid ; so that it becomes the more easy to be loosened, and fall again into the circulating Current. But in this Case there is a hazard of such things likewise putting the obstructed Humour into a Ferment, whereby it sooner turns into Pus, and then they come under the Denomination of Suppuratives or Ripe-ners. What therefore in the most strict Sense is to be reputed a Repeller, is that which astringes and strengthens the Part, so as to make it resist any such Lodgment. These are such, whose Qualities are most manifest in their Coldness and drying Properties. But there are so very few Instances wherein Bandage is not better than such Application, that very little comes to be used for that purpose. In Hemorrhages and Ouzings out of Serum, so as to deform the Skin, Simples of this nature mostly take place ; which answer their Ends in astringing the Fibres, whereby those Apertures are so closed, as not to admit thro' them afterwards any such Fluid.

Some things also answer this End only by stimulating the Fibres of the tumify'd Part, so as to give them sudden and forcible Twitches, whereby the Obstruction is sometimes loosened and shook, as it were, away into the reflux Current. Such a sort of Motion will be occasioned by the sudden Application of any thing extream cold, as common Water : but the Practice is seldom safe ; because, if the first Efforts, which the Fibres are put upon by those means, do not succeed in breaking away the inclosed Matter, they will be strained, and not able

afterwards to repeat their natural Vibrations : the Consequence of which is weakening the Part, which will render the Tumor more obstinate. There are many other Means and accidental Circumstances, which contribute to favour or retard this Intent ; but these Hints may be sufficient.

Repercutients, the same as the former.

Reptiles, from *repo*, to creep, are all those creeping Animals which rest upon one Part of their Body, while they advance the other forward.

Residence, is the *Fæces* or Settling of any Liquor.

Resins, or *Resinous Particles*, are the fat sulphureous Parts of some Vegetable, which is natural, or procured by Art : and will incorporate with Oil, or rectify'd Spirit, but not with an aqueous *Menstruum*.

Resistance, is often the same as *Renitency*, or *Vis Inertiæ*. See also *Medium*.

Resolvents, are such Medicines as loosen and open. And,

Resolution, is the opening or loosening any Body. And there is said to be made a Resolution of crude Matter in the Body, when that Matter is by what means soever so changed as to become harmless or salutary ; being of it self a compleat Cure performed without any apparent Evacuation.

Respiration. The true understanding of this is absolutely necessary to a right Notion of the animal OEconomy ; it may therefore be observed, that by blowing into a Bladder a considerable Weight may be raised by the Force of our Breath : For with a Bladder that is oblong, nearly of a cylindrical Figure, and tied at both ends, if a Pipe be fixed at one end, and a

Weight at the other, and the Pipe fastened at such a distance from the Ground, as just allows the Weight to rest upon the Ground, the Bladder by an easy Inspiration will raise 7 lb. Weight, and by the greatest Inspiration of a pretty strong Man will raise 28 lb. Weight. Now the Force by which the Air enters this Pipe, is that Force by which it is driven out of the Lungs: If therefore the Force by which the Air enters the Pipe can be determined, we shall have the Force by which the Air is drove into the *Aspera Arteria*.

But the Pressure of Air upon the Bladder is equal to twice the Weight it can raise, because the upper part of the Bladder being fixed, it resists the Force of the Air, just as much as the Weight at the other end. And again, since the Air presses every way equally, the whole Pressure will be to that part of it which presses on the Orifice of the Pipe, as the whole Surface of the Bladder is to the Orifice of the Pipe; that is, as the Surface of a Cylinder, whose Diameter, for instance, is 4 Inches, and Axis 7, is to the Orifice of the Pipe. If the Diameter of the Pipe be 0.28, and therefore its Orifice 0.616; the Surface of the Cylinder will be 88: Therefore at 88 : 0.616 :: 14, double the least Weight raised, to 0.098, which is almost two Ounces: and in raising of the greatest Weight it is near seven Ounces. These therefore are the Forces by which the Air is drove thro' the *Aspera Arteria* in an easy and a strong Expiration. Now if we consider the Lungs as a Bladder, and the *Larynx* as a Pipe, the Pressure upon the Orifice of the *Aspera Arteria*, when the Air is drove out, is to the Pressure upon the Lungs as the whole

Surface of the Lungs is to the Orifice of the *Aspera Arteria*. Let us suppose the Diameter of the *Larynx* to be 5, (which is more than it can be) then the Orifice of the *Larynx* is 0.19. Let us suppose the two Lobes of the Lungs to be two Bladders or Spheres, whose Diameters are each 6 Inches, their Surfaces are each 113 Inches, and the Pressure upon the *Larynx* will be to the Pressure upon the whole external Surface as 0.19 to 226, which is as 1 to 1189; and therefore if the Pressure upon the *Larynx* in an ordinary breathing is 2 Ounces, the Pressure upon the whole external Surface of the Lungs is 148 Pound; and the utmost Force, when the Pressure upon the *Larynx* is 7 Ounces, will be equal to 520 Pound Weight. But the Lungs are not like an empty Bladder, where the Air presses only upon the Surface; for they are full of Vesicles, upon the Surface of each of which the Air presses as it would upon the Surface of an empty Bladder: and therefore to know the whole Pressure of the Air, we must determine the internal Surfaces of the Lungs. To do this, let us suppose that $\frac{1}{5}$ part of the Lungs is taken up with the Branches of the *Trachea Arteria*, that another third part the Blood-Vessels fill, and the remainder is Vesicles, where we suppose the chief Pressure upon the Blood-Vessels to be made: Now both Lobes of the Lungs contain 226 solid Inches, of which $\frac{1}{5}$, or 75 Inches, are full of Vesicles. Let the Diameter of each Vesicle be $\frac{1}{50}$ part of an Inch, the Surface of a Vesicle will be .001256, and the Solidity 0000043. by which Sum if we divide 75, (the Space filled by the Vesicles) the Quotient gives us 17441860, for the number of Vesicles

ficles in both Lobes of the Lungs. This number multiplied by .001256 the Surface of a Vesicle, gives the Sum of the Surfaces of all the Vesicles, to wit, 21906.976 Inches. And therefore the Pressure upon the *Larynx* will be to the Pressure upon the whole Surface of the Lungs, as 6.19 to 21906.976; and consequently when in an ordinary Expiration, the Pressure upon the *Larynx* is 2 Ounces, the Pressure upon the whole internal Surfaces of the Lungs will be 14412 Pound Weight; and the utmost Force of the Air in breathing, when the Pressure upon the *Larynx* is 7 Ounces, will be 50443 Pound Weight. Tho' these seem to be prodigious Weights, yet it must still be understood, that the Pressure upon each part of the Surface of the Lungs equal to the Orifice of the *Larynx*, is not greater than it is at the *Larynx*, and that these vast Weights arise from the vast Extent of the Surfaces of the Vesicles, upon which it was necessary that the Blood should be spread in the smallest capillary Vessels; that each Globule of Blood might, as it were, immediately receive the whole Force and Energy of the Air, and by that be broke into smaller Parts fit for Secretion and Circulation. And from thence we may learn the mechanical Reason of the Structure of the Lungs: For seeing the whole Blood of the Body was to pass thro' them, in order to receive the Virtue of the Air, and that could not be communicated but in small capillary Vessels, it was necessary that the Surfaces upon which they were to be spread, should be proportion'd to their number, which is admirably well provided for by the wonderful Fabrick of the Lungs.

If the Gravity of the Air was always the same, and if the Diame-

ter of the *Trachea Arteria*, and the time of every Expiration were equal in all, this Weight upon the Lungs would be always the same. But since we find by the Barometer, that there is 3 Inches difference between the greatest and the least Gravity of the Air, which is a tenth part of its greatest Gravity; there must be likewise the Difference of a tenth part of its Pressure upon the Lungs at one time and another: for the *Momenta* of all Bodies, moved with the same Velocity, are as their Gravities. This is a Difference, which such as are Asthmatick must be very sensible of, especially if we consider that they likewise breathe thicker, that is, every Expiration is performed in less time; if in half the time, and the same Quantity of Air drawn in, then the Weight of the Air upon the Lungs must be 57648 Pound, of which a tenth part is 5764 Pound: and consequently asthmatick People upon the greatest Rise or Fall of the Barometer feel a difference of the Air, equal to above one third of its Pressure in ordinary breathing. Again, if the *Trachea Arteria* is small, and its Aperture narrow, the Pressure of the Air encreases in the same Proportion as if the times of Expiration were shorter, and therefore a shrill Voice is always reckoned among the prognostick Signs of a Consumption, because that proceeds from the Narrowness of the *Larynx*, or *Trachea Arteria*; and consequently encreases the Pressure of the Air upon the Lungs, which upon every Expiration beats the Vessel so thin, that at last they break, and a Spitting of Blood brings on a Consumption apace.

Resurrection, and
Resuscitation, the same as Revivification; which see.

Retention, and *Retentive Faculty*, is that State of Contraction in the solid Parts, as makes them hold fast their proper Contents.

Rete Mirabile, the wonderful Net. See *Brain*.

Reticularis Plexus, the same as *Choroides*, which see; because the Fibres are interwoven like a Net.

Reticulum, the same as *Omentum*, thus called from its net-like Structure.

Retiformis Plexus, the same as *Reticularis Plexus*.

Retiformis Tunica, the same as *Amphiblestroides*, which see.

Retina. See *Eye*.

Retinaculum, is the name of a chirurgical Instrument, described by *Scultetus*, *Arm. Chir. Par.* 1. *Tab.* 17. *Fig.* 2. and its use given also by him, *Tab.* 39. *Fig.* 2, 3, 4. to assist in Castration, or cutting an *Hernia*.

Retort, a chymical Vessel of Glass used for distilling in a Sand-heat.

Retractores, the same as *Elevatores Labii superioris*; which see.

Revelation: What the common Acceptation of it is, every one knows: But *Helmont*, and some of the Enthusiastick Chymists, often laid Pretensions to the same Assistances in discovering their Secrets; but were never credited by any but the most ignorant.

Reverberatory, is such a chymical Furnace where the Flame and Heat is thrown back by the Brickwork upon the Vessel, so as to make the Heat more intense; as in the Distillation of acid Spirits, &c.

Revulsion, from *Revello*, to pull back; is the calling back any Humour by Evacuation. See *Pblebotomy*: And

Revulsoria, are Means which procure Revulsion.

Revivification, fetching again to

Life. Chymists use this Term to express the procuring again some Metals in their natural State from the Mixtures they may have been blended into by some Preparation, as Quicksilver is revived from *Cinnabar*, &c.

Rhachis. See *Rachis*. This is sometimes used for the Spine.

Rhagades, are Fissures appearing sometimes on the Hands, Feet, Lips, &c. but the word is used peculiarly to signify Fissures, tho' these for distinction sake are sometimes called *Rhagades ani*, about the Verge of the *Anus*, proceeding from an acrimonious Humour fretting the Part.

Rheum, from *ῥέω*, *fluo*, to flow, is a thin watery Matter ouzing thro' the Glands, chiefly about the Mouth.

Rheumatism, from the same Etymology, is a Distemper affecting chiefly the *Membrana communis Musculorum*, which it makes rigid and unfit for motion, without great pain. And this seems to be brought about much by the same Causes, as the mucilaginous Glands in the Joints are rendered stiff and gritty in the Gout. The Cure depends on Evacuation, and a plentiful use of Volatiles and Diluters.

Rhodon, from *ῥόδον*, *Rosa*, a Rose. Some Compositions wherein this is the chief Ingredient, have their names from hence; as *Diarrhodon*, &c. Hence also,

Rhodofaccharum, from the former, and *Saccharum*, Sugar, is Sugar of Roses.

Rhomboides, is a Muscle thus called from its Figure, which lies under the *Cucullaris*, and ariseth from the two inferior Spines of the Neck, and four superior of the Back; and is inserted fleshy into the whole Basis of the *Scapula*, which it draws backwards.

Rhombus, is a quadrilateral Figure, having two acute and two obtuse Angles.

Rhythm, from *ῥυθμίζω*, *ad numeros aptos refero*, to bring to a Calculation, or to compute: is used to express a certain number of Pulses in any given time.

Ribs. See *Costæ*.

Rigation, the same as *Irrigation*, the sprinkling or moistning any thing or part.

Right Line, is the nearest Distance between any two Points.

Rigidity, is said of the Solids of the Body, when being stiff or unpliant they cannot readily perform their respective Offices. This is to be remedied by Fomentations, Bathing, &c. but a Fibre is then said to be rigid, when its Parts are so strongly cohered together, as not to yield to that action of the Fluids, which ought to overcome their Resistance, in order to the preservation of Health.

Rigor, is a convulsive Shuddering from Cold, or an Ague-fit.

Rima, is any Fissure or Chink; hence it is applied to several parts of the Body that have any resemblance thereunto in Shape; as the *Rima Pudendi*, or *Fissura Magna*, is the *Vulva*; and *Rima Laryngis*, is the Aperture of the Larynx, &c.

Rimula, a little Chink or Fissure; is only a Diminutive of the foregoing, and applied to lesser Parts of the same Make; as that small Aperture between the *Cartilaginee Arytenoides*, commonly called the *Glottis*.

Ripeners, or Drawers; are such Medicines externally applied, as do by their Activity and Warmth penetrate the Pores, and mix with and rarify any obstructed Matter, so that it may be rendered fit for discharge upon laying open the Part by Caustick or Incision.

Riwand, and *Riwandzini*, are Arabick Words for Rhubarb, and which *Rolfinkius*, and some Latin Writers still retain.

Rob, is an antient Term for inspissated Juices, but is now laid aside.

Roborantia, from *Robur*, Strength, are such Medicines as strengthen the Parts, and give new Vigour to the Constitution. See *Strengtheners*.

Roche, is applied to the Rock-Alum; the Term in French signifying Rock.

Roriferous Ducts, Dew-dropping Pipes: the *Thoracick Duct* is thus by some called, from its slow manner of conveying, and as it were instilling the Chyle into the common Stream of the Blood: The Lymphaticks also and any other Vessels conveying slowly small Quantities of Fluid, are thus called by *Bilsius*, *Bartholine*, and some others.

Rosacea, or *Rosata*, is a Name given to many Compounds, where Roses are the principal Ingredients: And,

Rosalia, is a Distemper taken notice of by *Martian* in his Notes upon *Hippocrates*, very common to Children, not much unlike the Measles; and wherein broke out small red Pimples of the bigness of Millet-Seed: probably the same as our *Febris Miliaris*, unless in the Colour at the Eruption.

Roseolæ, is by some Authors used much for the same thing; and *M. A. Severinus* hath particularly wrote a large Treatise *de Roseolis Saltantibus*; and assigned therein Reasons for his giving thereunto the Epithet of *Saltantes*.

Rostriformis Processus, from *Rostrum*, a Beak, and *Forma*, Shape, is the same as *Coracoides*; which see.

Rostrum, is used to express the Pipe which conveys the distilling Liquor into its Receiver, in the common Alembicks: also for a crooked Scissars which the Surgeons in some Cases make use of for the Dilatation of Wounds.

Rotator, a Roller. See *Trochanter*.

Rotula, a little Wheel or Pulley, the same as *Patella*; which see.

Rotula, is also used in the same sense as *Tabella*, or Lozenge.

Rotundus, is one of the Muscles of the *Radius*, thus called from its round Shape. It arises fleshy from the internal Extuberance of the *Humerus*, and goes obliquely to be inserted into the middle and external Parts of the *Radius*; with others helping to turn the Palm upwards.

Ructation, and

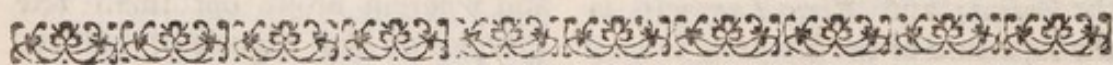
Ructus, is a Belching that arises from Wind and Indigestion; and rather to be cured with proper Stomachicks than Carminative and hot Liquors.

Ruminant, Cud-chewers, is a general Name for all those Animals that chew the Cud.

Ruptile, is used by *Fallopious* for

any thing easy to be broke; and he assigns the Cause of *Ruptibility*, as he calls it, to a multitude of Pores wanting due moisture in them.

Rusma, an Ingredient of a Composition used to take off Hair, without the Trouble of shaving. For being mixed up into a thin Paste with an equal quantity of Quick-lime, and a sufficient proportion of Water, and rubbed over any hairy part of the Body, it will in the space of a minute or two, so loosen the Hair by the Roots, that it may be gently stroked off with the Hand. This method of taking off Hair is much practised among the *Turks*, the *Italians*, and the *French*. The *Rusma Tartarorum* is said to be a Preparation of Honey, boiled to a high Consistence, and applied in the manner of a Plaster; but the genuine *Rusma* is a Species of Earth found in *Turkey*, and otherwise called by the Name of *Susma*. There is mention made of it in the *Philosophical Transactions* for the Month of *December*, in the Year 1666.



S.

S. A. *Secundum Artem*, according to Art, is a Term frequently used in Prescription: and then properly when the making up of the *Recipe* in Perfection, requires some uncommon Care or Dexterity.

Sabulous, is that gritty or sandy Matter which often washes away by the Kidneys, and settles in the Urine.

Saccharum, Sugar. The native Salt of the *Sugar-Cane*, obtained by the Expression and Evaporation of its Juice. 'Tis an admirable Medicine of a very detergent Nature. Many Accusations have been brought against it by such Persons as were never at the Pains to analyze or thoroughly consider its Nature. Such Men have no right to be heard. But whosoever will take the Trouble may

may be satisfied that it is a very noble Salt of very extraordinary Virtues, tho' it certainly contains a latent Corrosive. 'Tis wonderfully well disposed to unite with various Substances, so as to preserve them in great Perfection. The Confectioner's Art, and a very considerable part of Pharmacy will witness to this Truth. The Nature, Properties, Virtues and Use of Sugar would require a Volume to do them Justice. This Term is also by our Chymists applied to many Preparations having some Resemblance thereunto; as the *Saccharum Saturni*, and the like. And

Saccharine, is frequently ascribed to things having the Taste, or any other of the chief Qualities of Sugar; as *Bonetus* gives an instance, *Med. Sept. Lib. 2. Sect. 3. Cap. 1.* of a Person whose Spittle was sweet, for which reason he calls it *Saccharina Saliva*.

Saccus, and

Sacculus, is strictly a Bag, whence from their resemblance many parts of the Body are thus called; as

Sacculus Chyliferus, the same as *Receptaculum Chyli*; and

Sacculus Cordis, the *Pericardium*, &c.

Sacculi Medicinales, are Bags of Ingredients to be suspended in Liquors in making Diet-Drinks.

Sacer: Some give this name to part of the *Transversalis Dorsi*; which see.

Sacer Ignis, the Holy Fire; some have fancy'd to give this name to a *Herpes Exedens*, (which see) but it does not appear from what reason: As also is,

Sacer Morbus, given to the Epilepsy, upon the Apprehensions of somewhat supernatural being concerned in its Production, or Cure.

Sacrolumbus, is a Muscle that

ariseth fleshy from the superior part of the *Os Sacrum*, posterior part of the *Ilium*, and from all the Spines and transverse Processes of the *Vertebrae* of the Loins. It gives a small Tendon to the posterior part of each Rib near its Root, where a small Bundle of fleshy Fibres arises and unites with each ascending Tendon to the third, fourth, fifth, and sixth *Vertebrae* of the Neck. This with the *Serratus Psoicus inferior*, and *Triangularis*, help to contract the Ribs in Expiration. But they are of small force, and seem only to accelerate the Motion of the Ribs, which fall down chiefly by their own Gravity, and the elasticity of the Ligaments by which they are tied to the *Vertebrae*.

Sacrum Os. See *Vertebra*.

Saga, one who deals in *Præstigiæ* or Inchantments; which Practice some of the chymical Enthusiasts very much give into.

Sagittalis Sutura. See *Suture*.

Sal, Salt. See *Principles*.

Salacious, is Lustful, or addicted to *Venery*.

Salitura, is a Pickle made with Salt; the same as *Muria* or Brine.

Saliva, is often used for *Sputum*, every thing that is spit up; but it more strictly signifies that Juice which is separated by the Glands, called *Salival*. See *Mouth*: whence

Salivation, is a Method of Cure much practised of late in venereal, scrophulous, and other obstinate Cases, by promoting a secretion of Spittle: The manner how Mercury effects this, may be understood by what has been explained under that Word. To which it may be here added, that the safest way of raising a Salivation, is by the use of internal Medicines; since what-

soever Mischiefs can be apprehended from these, may in a greater degree follow the external use of Mercury; not only because, as has been already hinted, the mineral Globules being intimately combined with Salts in the several Preparations given inwardly, will, by the irritation of these, be easily and fully thrown out at the Organs of Secretion, till the Blood is quite discharged of its Load; whereas in all the Daubings with Mercurial Ointments, we can never be certain that none of the heavy Particles are left lodged in the Interstices of the Fibres or Cells of the Bones: but also in as much as by computing the Proportion of Mercury, in all the Doses necessary to promote a Spitting, and the weight of the same Mineral usually applied, when this is done by Unction, it will appear, that the quantity in the latter Case vastly exceeds that in the former; and consequently, that the Inconveniencies to be feared will be in the same proportion. Therefore this external Management of Mercury is only to be allowed of, where either the Case will bear the Violence of such a Method, or outward Ulcers and Tumors require a particular Cure by Liniments, &c.

Nor is it improper to remark, that we do hereby see how this use of this Mineral comes to produce that Effect so often complained of (tho' not always with Reason) of making the Bones foul or carious. For if the *Laminae* or Fibres of these are already so much broken and spoiled by a Disease, as that the Circulation of the Fluids thro' them cannot be maintained, they must necessarily be corrupted more by the Weight of the Mercurial Globules: tho' here also it is plain, that the *outward* Use of this Re-

medy will be more to be blamed than the *inward*.

And indeed, as the earliest use of Mercury was in Unguents and Emplaisters; so most of the Prejudices and Outcries about it are owing to Effects produced this way. For the first Attempts of the Cure of *Venerreal* Maladies by this Remedy, were learned from the *Arabians*; who having recommended mercurial Ointments in the *Lepra* and *Scabies*, gave a handle to the *Italian* Physicians to try their Efficacy, in removing the Foulness of the Skin from a new and terrible Contagion: neither were they sparing of their Liniments, which they continued to rub in twelve or fifteen, nay sometimes for above thirty Days together; so that it is no wonder if they often met with very untoward Symptoms from so severe a Treatment; and if (as some of them do affirm) they now and then found Mercury in the rotten Bones of their Patients; who had, it may be, suffer'd too much, both from their Disease and their Physicians. Hence,

Salivantia, are Medicines which promote Spitting.

Salsamentum, and

Salsugo, are any Salt-pickles, or Brines.

Salvatella, is a Vein which terminates in the little Finger.

Salubris, and

Salutaris, both from *salus*, Health, express any thing in Health, or conducive thereunto; and even such Diseases are by some called *Salutary*, as are curable, and leave the Constitution better than before; as the Gout, &c.

Salutatores, *Saluters*. There were a Set of Enthusiasts or Impostors in *Spain*, of the Order of St. *Katherine*, who pretended to the Cure of many Diseases, by touching or breathing

breathing only upon the Patient, in their ordinary Intercourses with them.

Sampsuchinon, σαμψύχινον, is a Name which hath been given to an Oil, and an Ointment wherein Marjoram was the chief Ingredient; from *Sampsuchus*, a synonymous Term for that Plant.

Sanative, from *Sanitas*, Health, is any thing conducing thereunto.

Sancti Viti Chorea. See *Chorea Sancti Viti*.

Sanctus, holy. This hath been applied to many things both simple and compound, as whimsical Persons have conceived of their Vertues; as the *Guaiacum* is called *Lignum Sanctum*, and even our own Dispensatories retain a purging Powder under the Title of *Pulvis Sanctus*.

Sandaraca, hath been used to signify many different things, as a waxy Substance falling with Spring-Dew, in which Bees are said much to delight: It is also the Arabian Name for Gum-Juniper, or the *Vernix*; as likewise for a mineral Production not much unlike Arsenick, on which account that is sometimes called *Arsenicum rubrum*.

Sandyx, is Cerufs burned till it resembles the red Arsenick in Colour; or is a red Earth, the same probably as the red Orpiment.

Sanguification, making Blood. This may be understood by considering what is explained under the Term *Digestion*: For as the Chyle is made out of our Aliments by the Contractions and Attritions of the Stomach, so the Chyle is made into Blood by the Attrition of the Arteries thereupon. See further under Blood, Lungs, Phlebotomy, &c.

Sanguine, Bloody, or of a Constitution abounding with Blood; from

Sanguis, Blood; which see.

Sanguisuga, Blood-sucker, a Name given by some to a Leech, from its Faculty of drawing Blood from Animals.

Sanies, a thick and bloody Pus, or Matter.

Sanitas. See *Hygieia*.

Sapa, the Name of an old Form of Medicine like *Rob*, which is a Juice boiled up to some Consistence; strictly that of Grapes, tho' used also for others ordered after the same manner.

Saphena, probably from σαφής, manifestus, easy to be seen, because it lies very plain in sight; is a Vein in the Leg. See *Vein*.

Sapientiae Dentes, thus called, because they appear not till Persons are of years of Discretion. See *Dentes*.

Sarcocoele, from σὰρξ, Caro, Flesh, and κήλη, Tumor, a Swelling; is a fleshy Excrecence of the Testicles, which sometimes grows so large as to stretch the *Scrotum* much beyond its natural size. Also

Sarcoma, is of the same signification; as is likewise

Sarcosis.

Sarcoticks, from the same Derivation, are Medicines that fill up Ulcers with new Flesh, the same as Incarnatives; which see. Many other Words are also compounded at pleasure from the same Foundation, not of any moment to insert here.

Sartorius, called also *Longus Tibiæ*, is a Muscle that ariseth from the inferior Part of the Spine of the *Ilium*, and running obliquely by the inside of the Thigh, is inserted into the internal side of the *Tibia*, three or four Fingers breadth below its upper Extremity. By this we throw one Leg cross another.

Saturantia, is sometimes used in the same Sense as *Absorbents*; which see.

Saturnus. Chymists ascribe this Name to Lead; because they will have that Metal to be under the Influence of the Planet *Saturn*. See *Lead*.

Satyriasis, and

Satyrismus, from *σατύριος*, *Satyrus*, a Satyr, or kind of Ape or Monkey, which is greatly addicted to Venery, whence this signifies a lustful Disposition.

Saxifrage, quasi *Saxum frangere*, to break the Stone, is applicable to any thing having this Property, but is a Term most commonly given to a Plant, from an Opinion of its Medicinal Virtues to this Effect.

Saxonicus, is an Epithet which hath been given to a compound Powder, yet retained in some Dispensatories, for its supposed Efficacy in breaking the Stone, or expelling it.

Scabies, a Scab, is used sometimes for the Itch, and such like cutaneous Eruptions.

Scala, a Scale or Ladder, is applied to a Chirurgical Instrument, for resting and defending the Limbs in case of Fractures or Dislocations; of which *Scultetus* gives a Figure. *Arm. Chir. Part I. Tab. 29. Fig. 3.* and its Use, *Tab. 49. Fig. 1.* but figuratively some have applied this to a Man's Life, which they divide into different Ages, calling the whole *The Scale of Life*. Some also will have it, that the *Scala Jacobi*, *Jacob's Ladder*, denotes only such a Knowledge of the Air, and the Elements above us, as in a mystical Sense may be said to ascend up into Heaven.

Scalenum, is a Muscle of the Neck that ariseth from the first and second Ribs, and ascending, is in-

serted into all the transverse Processes of the Neck except the first. This Muscle seems to be three; but such Division is not of any real Use. It is perforated for the Passage of the Veins, Arteries, and Nerves; because the Neck is more easily moved than that part of the Ribs to which they are fastened: therefore it is justly reckoned amongst the Benders of the Neck.

Scapellatum, is by some Authors used in the same Sense as the Greeks applied *Phimos*, *φίμωσις*, for a Denudation of the Glands of the *Penis*, when the Prepuce could not draw over it.

Scaphoides, from *Scapha*, *σκάφη*, a Boat, and *εἶδος*, *forma*, Shape, the same as *Naviculare Os*: which see.

Scapulae, *ὀμοπλάται*, or Shoulder-blades, are two large and broad Bones, like the Triangle called *Scalenum*; they are situated on each side of the upper and back-part of the *Thorax*. The Substance of the Scapula is thin, but solid and firm; its outside is somewhat convex, and its inside concave; its upper edge is called *Costa superior*, and its lower *Costa inferior*; its broad end is called its Basis, which, with the two edges, make the upper and lower Angles. They have each three Processes, of which the first runs all along the middle of their outside, and is called their Spine. That end of the Spine, which receives the Extremity of the *Clavicula*, is called *Acromion*. The second Process is a little lower than the *Acromion*; 'tis short and sharp like a Crow's Bill, therefore called *Coracoides*; these two Processes are tied to one another by a strong Ligament which serves to keep the Head of the *Humerus* in the Cavity of the third Process, which is called *Corvix*.

This

This Process is the Extremity of the Scapula, which is opposite to its Basis. It has a round *Sinus*, tipped about its Brim with a Cartilage, which receives the Head of the *Humerus*. The Use of the *Scapula* is to receive the Extremities of the *Clavicula* and *Humerus*, for the easier Motion of the Arm, and to give rise to the Muscles which move the Arm.

Scapus, is a Term in Botany for the strait Stalk or Shaft of a Plant, standing upright like a Pillar or Column.

Scarf Skin. See *Cuticula*.

Scarification, is an Incision of the Skin with a Lancet, or such-like Instrument; and is most practised in Cupping, which acts by Stimulation as well as by Evacuation.

Scarificatorium, is the Instrument to make Scarification withal, and is of late very conveniently ordered by a number of Points set in a Plane, which are all struck into the Part at once.

Scarletina Febris, Scarlet-Fever, the same as Purple-Fever; which see.

Sceletum, a Skeleton. This is the Bones of the Body preserved together as much as can be in their natural Situations: And those in a human Body, are

The <i>Os Frontis</i>	1
<i>Occipitis</i>	1
<i>Offa Parietalia</i>	2
<i>Temporum</i>	2
<i>Officula Auditus</i>	8
<i>Os Ethmoides</i>	1
<i>Sphenoides</i>	1
<i>Mali</i>	2
<i>Maxillare</i>	2
<i>Unguis</i>	2
<i>Nasi</i>	2
<i>Palati</i>	2
<i>Vomer</i>	1

<i>Maxilla Inferior</i>	1
<i>Dentes Incisivi</i>	8
<i>Canini</i>	4
<i>Molares</i>	20
<i>Hyoides</i>	1

61

<i>Vertebræ Cervicis</i>	7
<i>Dorsi</i>	12
<i>Lumborum</i>	5
<i>Offis Sacri</i>	6
<i>Os Coccygis</i>	3
<i>Scapulæ</i>	2
<i>Claviculæ</i>	2
<i>Costæ</i>	24
<i>Sternum</i>	1
<i>Offa Innominata</i>	2

64

The <i>Humerus</i>	2
<i>Ulna</i>	2
<i>Radius</i>	2
<i>Offa Carpi</i>	16
<i>Metacarpi</i>	8
<i>Digitorum</i>	30

60

The <i>Os Femoris</i>	2
<i>Rotulæ</i>	2
<i>Tibia</i>	2
<i>Fibula</i>	2
<i>Offa Tarsi</i>	14
<i>Metatarsi</i>	10
<i>Digitorum</i>	28

60

In all 245

Besides the *Offa Sesamoidæa*, which are said to be found to the Number of 48.

Scelotyrbe, from σκίλον, *Crus*, the Leg, and τὺρβη, *Tumultus*, Up-roar; signifies those Pains in the Legs

Legs that generally attend scorbutick Habits; whence it is also frequently used for the Scurvy it self, and applied to some Medicines contrived against such Disorders.

Sceptick, is one who doubts the Truth of any thing, till thorowly examined; tho' some go so far under this Pretence, as hardly to be convinced by any Evidences. *Galen* makes mention in his Time of a publick School or College of Physicians, who professed themselves *Scepticks*; but *Cartesius* hath of late given much Encouragement to this Sect, whom he hath taught to call every thing in question till re-examined; and our Countryman Mr. *Boyle* hath wrote a Book well known, under the Title of the *Sceptical Chymist*; where every thing is laid down rather by way of Enquiry, than as Matter well known and settled.

Schesis, σχήσις, is a Disposition of the Body accidentally contracted, not yet so fully confirmed, but that it may easily again be altered; in Distinction from ἔξις, which is a confirmed Habit. Hence also *Schetic Febris* is one that will soon give way to Remedies, contrary to the *Hectica*, which is so confirmed in the Habit as not to be removed but by long Time, and great Difficulty.

Scholium, is a Remark made at pleasure, and as it were by the by; on any Proposition, before advanced and treated of.

Sciatica. See *Gout*.

Schirrbus,

Schirrhoma, and

Schirrhosis, from σκίρρῶω, *induro*, to harden; is an Induration of the Glands from gritty obstructed Matter, as it happens frequently to the Liver in a Jaundice, and the like.

Sclerophthalmia, σκληροφθαλμία; is a *Lippitudo dura*, wherein the

Eye-Lids turn out red, hard, and dry; and very difficult to cure. Whence,

Sclerotica Tunica, so called from σκληρόω, *induro*, to harden; is the same as *Cornea*. See *Eye*. Thus also

Sclerotics, are Medicines which harden and consolidate the Parts they are applied upon.

Scobs, most properly signifies the Pot-Ashes, or the *Scoria* of any Metal, but is by some more laxly applied, as *Scribonius Largus* mentions a *Scobs eborea*, as does also *Celsus* give it to various things.

Scopus, σκοπός, *Scope*, is by some used in the same Acceptation as *Intention* or *Indication*; but others have very critically distinguished between them, not of moment enough to take notice of here.

Scorbutica, are Medicines which prevail against the

Scorbutus, Scurvy; a Disease that some Writers make various Distinctions about, tho' not to any great purpose. It is a Constitution wherein the Blood is unequally fluid, and is best remedied by *Stimuli*, Exercise, and such means as assist in Sanguification.

Scoriae, are the Recrements of Metals, i. e. Dross.

Screation, is by some taken for hawking up somewhat to spit out, and others for the Matter it self so raised.

Scrobiculus Cordis, the same as *Anticardium*; which see.

Scrophula, the same as *Struma*, the King's-Evil; is a preternatural Obstruction and Erosion of the Glands.

Scrotocèle, from *Scrotum*, the Cod, and κύλη, *Tumor*, a Swelling; is a Rupture of the

Scrotum. See *Generation Parts of, proper to Men*.

Scro-

Scrotum Cordis, the same as *Pericardium*.

Scruple, a medicinal Weight consisting of 20 Grains, and making the third of a Dram.

Scutum, signifying an Helmet, hath by Anatomists been applied to many Parts of the Body having resemblance thereunto in Figure; as,

Scutiforme Os, the same as *Patella*; thus called from its resemblance to a Shield in Shape, as this Term imports. Hence also,

Scutiformis Cartilago, is the *Cartilago Eniformis*; which see.

Secession, the going off by Secretion, as the Excrements are particularly said to be formed by the Secession of those Parts, whereof they consist, from the animal Fluids, thro' their proper Outlets.

Secretion. See *Animal Secretion*.

Section, is properly the cutting any thing whatsoever; and the Manner or Position in which it is done with respect to the Figure of any Part, making it said to be perpendicular, parallel, transverse, or the like.

Secondary Fever, is that which arises after a Crisis, or the Discharge of some morbid Matter, as after the Declension of the Small-Pox, or Measles; and such a Fever is frequently dangerous.

Secundine, or After-Birth, is all that is brought from the *Uterus* after Delivery, as the *Chorion*, *Ammion*, &c. See *Fætus*.

Secundum Naturam, κατὰ φύσιν, according or agreeable to Nature, in opposition to a preternatural, or out of the common Course of Agency in Nature.

Segment, is a Figure contained between a Chord and an Arch of the same Circle, or so much of the Circle as is cut off by that Chord.

Segregation, is a total Separation of solid Parts from their Contact with one another, as in some fractured Bones, or the like.

Sella Equina, and

Sella Sphenoides, and

Sella Turcica, are various Names for the same thing. See *Brain*.

Semeiotica, is that Part of Physick which treats of the Signs of Health and Sickness.

Semen, Seed. For so far as this is concerned in *Botany*, see *Vegetable*. And besides what hath been said under *Animalcule*, *Conception*, *Generation*, and *Fætus*, (which see) for the Secretion of this Fluid, it may be considered, that the Blood is carried to the Testicles by the Spermatick Arteries, which, contrary to the constant Method of Nature in framing the other Arteries, are smallest where they spring from the Trunk of the great Artery, and immediately dilate to a considerable Bigness: Which evidently shews, that there could be no other Design in it but to retard the Velocity of the Blood. We cannot suppose that the only Intention was, that a small Quantity of Blood might go to the Testicles; because then there had been no occasion for giving this Artery a different Figure from all others; that narrow Orifice would have been sufficient of it self for that purpose, which the Wideness of the Artery immediately afterwards does neither hinder nor further. The Orifices of the spermatick Arteries are so small, that they cannot be measured, as may the Dimensions of the other Arteries; and yet they are hardly gone from the *Aorta* before they dilate as big, if not bigger, than one of the Lumbals, which is 434.2. Now, if we suppose their Orifices to be each 17.3, then the Blood will move 25 times slower

flower where the Artery dilates than it does at its Orifice. Again, we constantly find that all the Parts of the Body are supplied with Blood by small Arteries from the nearest Trunks. If this Method had been observed in sending the Blood to the Testicles, they had received their Arteries from the Iliacks; and they had ran but a little way before they had come to the end of their Journey. But instead of this, two small Arteries are made to arise from the *Aorta*, a little below the Emulgents, and to march above a Foot before they come to the Testicles. Now if we consider, that the Velocity of the Blood in the spermatick Artery, is 25 times slower than it is at its Orifice, that is, in the *Aorta*; and that the Velocity of Blood in the Iliacks, can be but very little less than it is in the *Aorta*, where the Spermaticks arise; the Blood must move 25 times slower to the Testicles, than if it had gone after the ordinary manner from the Iliacks. And because the Space it runs thus slowly, is at least 6 times longer than if it had gone from the Iliacks; therefore it must be 150 times longer in going to the Testicles, than if it had gone according to the common Course of Nature. So that the intestine Motion of the Blood is not only allay'd, but sufficient time is afterwards allowed the Particles, which are to compose the Seed, to attract and coalesce before they arrive at the Testicles.

Semilunar Valves, thus called from their resemblance in Shape to a half Moon. See *Heart*.

Semimares, half Males, so *Rolfinkius*, and some others, call those who have been castrated, as Eunuchs, Geldings, &c.

Semimembranosus, half membranous, is a Muscle that riseth tendi-

nous from the Protuberance of the *Ischium*, immediately below the *Seminervosus*, and is inserted by a large Tendon into the upper and back part of the *Tibia*. This is one of the four Muscles that bend the Leg.

Semimetalla, half Metals, such as the *Marcasites*, *Stibium*, *Bismuth*, and the like.

Seminalis Capsula, or Seed-Bag, is the Husk that contains the Seed of any Plant.

Semination, is called by *Blasius* the Immission of the Male-Seed into the Womb in Coition.

Seminervosus, half nervous, is a Muscle that arises from the Protuberance of the *Ischium*, and is inserted by a round Tendon into the internal Part of the *Epyphysis* of the *Tibia*, and helps to bend the Leg.

Semispeculum, is an Instrument described by *Hildanus* for dilating the Neck of the Womb.

Semispinatus. See *Transversalis Dorfi*.

Semitertian. Altho' many have wrote concerning this, particularly *Sennertus*, *Hoffman*, *Willis*, and *Sylvius*; and tho' *Spigelius* hath wrote a whole Treatise about it, yet it is difficult to collect from them all what they meant by it; tho' it seems to be taken for a common Tertian, joined with more than ordinary Symptoms of Malignancy, and rather remitting than intermitting, there being no Intervals quite free from the Fever.

Sensation. All Sensation is performed by the immediate Action of the finer and more fluid Parts of Bodies upon the Organs of Sense; the Impulse communicated by these subtle Parts of Bodies, upon the Organs fitly disposed, is thro' them transmitted to the Nerves, appropriated and contrived for such a Sense, and thro' them to the Brain.

Thus

Thus in Vision, the Light reflected from the Surfaces of Bodies is transmitted thro' the Humours of the Eye, and congregated upon the *Retina*, in the same manner it was reflected from the Body; and thereby an Impulse modify'd after a certain manner, strikes the Filaments of the Optick Nerves, which convey this Impulse to the Brain. In Hearing, the Sound, after divers Modifications in its Passage thro' the *Meatus Auditorius*, strikes on the *Tympanum*, which moving the Bones of the Barrel, and they the inclosed Air of the Labyrinth, the auditory Nerves there are moved after the same manner they would have been had the common Air acted upon them, with the advantage of a better qualify'd and gentler Impulse than they could have had otherwise. In Smelling, Tasting, and Touching, the Effluvia and more subtle Parts of Bodies act immediately upon the Nerves themselves, and they communicate this Action to the Brain: So that in some manner, all Sensation is nothing but touching, several ways diversify'd. See *Brain*, *Narcoticks*.

Sensorium; the common Sensory in Man is supposed to be that Part of the Brain where all the Points or Extremities of the Nerves meet and unite, that is, in the *Medulla Cerebri*.

Septenarius, and *Septennium*, containing the Space of seven Years: Some of the Antients reckoned every Constitution underwent some remarkable Change in every such Revolution, whence the seventh Year was called *Critical*, or the *Climacterick Year*; but such Observations are now much out of Use.

Septick, *σχεπτικὸς*, is a Medicine that is very styptick, or corrosive.

Septum Auris. See *Ear*.

Septum Cordis. See *Heart*.

Septum Narium. See *Nasus*.

Septum Transversum. See *Diaphragm*. All which Parts are thus called from their making a Partition like a cross Wall, which the Word imports.

Serena Gutta, the same as *Amaurosis*, which see.

Serous, from *Serum*, Whey, is used to signify the watry Part of the *Blood*, which see.

Serpigo, a tetterous Eruption like the *Herpes*, or *Impetigo*.

Serratus: Several Muscles are called by this Name from their resemblance in Shape to a Saw. As,

Serratus Anticus Minor, ariseth thin and fleshy, from the second, third, fourth, and fifth superior Ribs; and ascending obliquely, it is inserted fleshy into the *Processus Coracoides* of the *Scapula*, which it draws forward. It also helps in Respiration.

Serratus Anticus Major; which comes from the whole Basis of the *Scapula*, and is inserted into the seven true Ribs, and first of the false Ribs, by so many distinct Portions representing the Teeth of a Saw.

Serratus Posticus Superior, ariseth by a broad and thin Tendon from the two inferior Spines of the *Vertebrae* of the Neck, and the three superior of the Back; and growing fleshy, is inserted into the second, third, and fourth Ribs by so many distinct Indentions. These two help to draw the Ribs upwards, and bring them to right Angles with the *Vertebrae*; and consequently make the Cavity of the *Thorax* wider and shorter.

Serratus Posticus Inferior, arises with a broad and thin Tendon from the three inferior Spines of the *Vertebrae* of the Back, and from the two superior of the Loins; its Fibres ascending obliquely, grow fleshy,

fleshy, and are inserted by four Indentations into the four last Ribs.

Serofity. See *Serous*.

Sesamoidæa Offa. See *Digitus*.

Sesquialtera, is a Name given to that kind of Fever by *Helmont*, which others call a *Semitertian*, or a *Hemitritæos*.

Sessilis, is a Name given to any low, flat Tumours, or the Eruptions in the Small-Pox, when they rise not well, and are indented at the Top.

Setaceum, a Seton, is when the Skin is taken up with a Needle, and the Wound kept open by a Skein of Silk, that Humours may vent themselves; for the same purposes Issues, tho' generally with more Efficacy. Farriers call this Operation in Cattle, *Rowelling*.

Sickness Falling. See *Epilepsy*.

Sideration, is either such a sudden Mortification, as the common People call a *Blast*; or is a sudden Depravation of Sense, as in an *Apoplexy*.

Sief, the Name of an antient Form of Medicine, amongst the *Arabians*, but now out of use.

Sigmoides, or *Sigmoidales*, are Valves thus called from the Greek *Sigma*, and *ειδος*, *forma*, Shape; because of their resemblance thereunto in Figure. See *Heart*.

Sign. See *Diagnostick*.

Siliqua, in Botany, is the Seed-vessel, Husk or Pod, of such Plants as are of the leguminous kind.

Silver. See *Luna*.

Similar Bodies; such are thus called, which have their constituent Particles of the same kind, as to their sensible Qualities.

Similar Parts, are those of the same Texture, and manner of Formation.

Simple, expresses any thing of the same kind, and not compounded of

different or of many sorts, tho' agreeing in Nature.

Simple Quantities, are such as have but one Sign, as $2a$, and $-2b$; whereas $a + b$, and $+d - c + b$, are compound Quantities. These are used only in algebraical Calculations.

Sinapism, is a Cataplasm made chiefly of Mustard, to apply outwardly to any particular Part.

Sinciput, is the Fore-part of the Head. See *Cranium*.

Sine, is a right Line, drawn from one end of an Arch perpendicularly upon the Diameter drawn from the other end of that Arch; or, it is half the Chord of twice the Arch.

Singultus, the Hiccup, is a convulsive Motion of the Stomach, and Parts adjacent, particularly the Diaphragm.

Sinus, signifies any Cavity, and Anatomists variously apply it to many Parts of a human Body; as the

Sinus Laterales, and

Sinus Longitudinales. See *Dura Mater*.

Sinus Offium, are those Cavities of the Bones which receive the Heads of other Bones, and so of many other Parts.

Siphon. See *Syringe*.

Sitis, Thirst. See *Hunger*.

Skin. See *Cutis*.

Skull. See *Cranium*.

Sleep. See *Narcotick*.

Smelling. See *Sensation*.

Snow. Of this it hath been observed, that many Parts are of a regular Figure, for the most part being as it were so many little Rowels, or Stars of six Points, being perfect and transparent Ice; upon each of which Points are set other collateral Points, at the same Angles as the main Points themselves: Amongst these

these there are divers other irregular, which are chiefly broken Points and Fragments of the regular ones. Others also by various Winds seem to have been thawed, and froze again into irregular Clusters. So that it seems as if the whole Body of Snow is an infinite Mass of Icicles irregularly figured; that is, a Cloud of Vapours being gathered into Drops, the said Drops forthwith descend; upon which descent, meeting with a freezing Air as they pass thro' a cooler Region, each Drop is immediately froze into an Icicle, shooting it self forth into several Points: But still continuing their Descent, and meeting with some intermitting Gales of warmer Air, or in their continual Waftage to and fro, touching upon each other, some are a little thaw'd, blunted, and again froze into Clusters, or entangled so as to fall down in what we call Flakes. The Lightness of Snow, altho' it is firm Ice, is owing to the Excess of its Surface in comparison to the Matter contained under it; as Gold it self may be extended in Surface till it will ride upon the least Breath of Air. See *Ice* and *Freezing*.

Sol, the Sun. The Chymists use this Term for Gold, because they will have that Metal to be under the Sun's Influence in a particular manner: But what should have been the principal Inducements of torturing this Metal with so much Violence, to obtain from it some medicinal Vertues, is not easily to be guessed; unless it was to keep up the Authority of an ill-deserved Regard, and a Jealousy that they could not be well in the common Opinion for Physicians, who could not do extraordinary things in their Profession, with a Metal which had such a prodigious Influence almost

on every other account. Many indeed there have been, who have honestly opposed this Artifice, but the contrary sides have a long time prevailed, and to such a degree, that this Metal it self has not only been transformed into all the Shapes imaginable for medicinal Purposes, but even its Name has been transferred to do honour to, and enhance the Price of many other worthless Preparations that bore but any Resemblance to its sensible Qualities. Hence many Tinctures of a yellow Colour, are presently the Golden Tincture of something or other. Most indeed acknowledge, that Gold in Substance, or reduced into the smallest Particles by the Hammer, as in the Leaf-Gold, is not digestible in the Stomach, so as to be transmitted into the Blood, and to be there of any efficacy. But there are nevertheless many who are confident of its doing extraordinary Matters, if reduced into a Powder, by Amalgamation with Mercury, and by evaporating the Mercury afterwards. *Zacutus Lusitanus* is one of the smartest Pleaders on this side the Controversy, against *Musa*, *Picus Mirandula*, and *Platerus*; who besides many Instances of its Efficacy, urges the Authority of *Avicen*, *Serapion*, *Geber*, and many of the Arabian Physicians, with those of other Countries, and of later date. *Quercetan*, *Schroder*, *Zwelfer*, and *Et-muller*, with many other more modern practical Physicians, fell into the same Opinion. But which side soever is in the right, the present Practice rejects all Pretensions to Medicine therefrom; tho' most of the other Metals are in high esteem.

Soleus, a Muscle of the Foot, the same as *Plantaris*, which see.

Solids. The whole quantity of solid Matter in the Body is possibly

no more than the meer Matter of the Nerves, filled, swelled up, and distended by the nutritious Juices, as appears from the Observations of *Malpighi*; and the last Divisions of the Solids are hardly distinguishable from Fluids.

Solidity. See *Cohesion*.

Solution. See *Dissolution*.

Solution of Continuity, is a Term used by Surgeons for every Division of the Parts made by Wounds or any other Causes.

Solutiue, the same as *Laxative*; which see.

Somniferous, from *somnus*, Sleep, and *fero*, to bring; the same as *Narcoticks*, *Opiates*, &c. which see. Hence also,

Somnolency, is any Propensity to Sleep, or a Drowsiness.

Sophists, σοφισταί, originally and strictly signified those who abounded in Knowledge and Wisdom; but in length of Time many false Pretenders to those Qualities debased the Term into Disgrace, making it stand for a Cheat, or Juggler: whence,

Sophistication, is counterfeiting or adulterating any thing with what is not so good, for the sake of unlawful Gain. This Practice unhappily obtains in all the Parts of Medicine which deal with Simples or Compounds: and in many Cases the Cheat is carried on so artificially, as to prevent a Discovery even from Persons of the most discerning Faculty.

Soporales: Thus the Antients called the internal jugular Veins, from an Opinion of their being particularly concerned in Sleep; but *Blancard* blames them, because *Carotid*, which is given by common consent to their correspondent Arteries, is of the same Import, and founded upon the same Conjecture.

Soporiferous, that which occasions Sleep, from *sopor*, Sleep, and *fero*, to bring.

Sory, is a mineral Production not unlike the *Chalcitis*, which see.

Sound. This hath employ'd the Enquiries of many great Men to explicate. The greatest of whom, *Sir Isaac Newton*, saith, That it arises from a Propagation of the Pulse of the Air, and that this consisteth not in the Motion of an *Æther*, or finer Air, but in the Agitation of the whole common Air: Because, by Experiment, he found that the Progress of Sound depended on the Density of the whole Air. With this agrees *Monfieur Carré*, of the Royal Academy of Sciences at *Paris*, who shews, That Sound, when considered with relation to Body, consists only in the Motion of the Air, but in such a Motion as is very different from Wind. Sound is from little Vibrations or Shakings, which the Parts of sonorous Bodies occasion in the Air, whereas Wind consists in a local Motion of the Air, without Vibrations. The Motion of the Air in Winds, will act strongly on Flame, but will not affect the Ear with Sound, but on the Interposition of some Body, which may occasion Vibration; whereas the Agitation of the Air in Sounds affects not Flame, for a lighted Candle put near a Bell which hath been struck, will not have its Flame agitated by the Sound. As to the Manner and Times of its Progression, Persons have varied, by means of the Diversity of those Experiments on which they have grounded their Calculations, which is another's Province to teach. So far as *Hearing* is concerned in Sounds, see what

what hath been said under that Term.

Space, if considered barely in Length, between any two Beings, is the same Idea that we have of *Distance*; but if it be considered in Length, Breadth, and Thickness, it is properly called Capacity: And when considered between the Extremities of Matter, which fills the Capacity of Space with something Solid, Tangible, and Movable, or with Body; it is then called Extension: so that Extension is an Idea belonging to Body only; but Space 'tis plain may be considered without it. So that Space, in the general Signification, is the same thing with Distance, considered every way, whether there be any solid Matter in it, or not. Space therefore is either Absolute or Relative. Absolute Space considered in its own Nature, and without regard to any thing external, always remains the same, and is immovable; but relative Space, is that movable Dimension or Measure of the former, which our Senses define by its Positions to Bodies within it: and this the Vulgar use for immovable Space.

Relative Space, in Magnitude and Figure, is always the same with absolute, but 'tis not necessary it should be so numerically. Thus if you suppose a Ship to be indeed in absolute Rest, then the Places of all things within her will be the same absolutely and relatively, and nothing will change its Place. But then suppose the Ship under Sail, or in Motion, and she will continually pass thro' new Parts of absolute Space: But all things on Board considered relatively, in respect to the Ship, may be notwithstanding in the same Places, or

have the same Situation and Position, in regard to one another.

Spadones, strictly signifies all Creatures which have been castrated; but *Paulus Ammannus* applies the Term to those who have a peculiar kind of Contraction or Convulsion in the genital Parts, in the same Sense as Spasm, *σπασμὸς*: whence *Erotian* enlarges it to signify spasmodick Affections also of other Parts; in which Latitude it is frequently met with in the Writings of *Hippocrates*.

Spagyrick Medicine, or *Spagyriccal Art*, is the same as Chymistry, the Word importing to extract, or collect or gather together, because it teaches how to extract, and separate the purer Parts of Substances from mixed Bodies: And,

Spagyrist, is the same as a Chymist.

Sparadrap, is an antient Name for what we now call a Cerecloth.

Spasma, or *Spasmus*, from *σπᾶω*, *contraho*, to contract, signifies any convulsive Motion, because it contracts or pulls the Parts it affects. Hence,

Spasmodick Medicines, are such as are good against Convulsions: and,

Spasmiology, from *Spasmus*, and *λέγω*, *dico*, to discourse, is any Treatise of Convulsions.

Spatula, is an Instrument used by Apothecaries and Surgeons, where, with they spread their Plaisters, Unguents, &c. or stir their Medicines together.

Species, is a Term used variously, in Logick and Metaphysics, for an Idea that relates to some other more general one, and has under it self only Individuals: In Algebra, for

those Symbols or Marks which represent the Quantities in any Equation, or Demonstration: In Vision, for such superficial and wonderfully fine Images of Bodies, as are producible by Light, and which by that are delineated upon the Bottom of our Eyes: And in Medicine, for those simple Ingredients, out of which other more compound are made. But common Custom without any just Propriety, has in Pharmacy, affixed it to some Aromatick and Cathartick Powders, which are themselves compounded of many things.

Specifick Gravity, is the appropriate and peculiar Gravity or Weight, which any Species of natural Bodies have, and by which they are plainly distinguishable from all other Bodies of different

kinds. By some 'tis not improperly called relative Gravity, to distinguish it from absolute Gravity, which increases in Proportion to the Bigness of the Body weighed. Thus, if any Body weigh a Pound, one as big again will weigh two Pounds: and let the Bodies be of what Nature or Degree of Specifick Gravity soever, a Pound of one will be as much as a Pound of the other, absolutely considered: thus, as is commonly said, a Pound of Feathers is as heavy as a Pound of Lead. But if you consider Lead and Feathers relatively, the Specifick Gravity of the former, will be much greater than that of the latter; or Lead, Bulk for Bulk, will be much heavier than Feathers; and Gold heavier than Lead, &c.

An Estimate of the Specific Gravity of Solids.

	<i>The Weight.</i>		<i>Diminution of Weight.</i>	<i>Proport. Gravity.</i>
	<i>In Air.</i>	<i>In Water.</i>		
O F Crude Mercury	gr. 60.	gr. 55 $\frac{3}{4}$	gr. 4 $\frac{1}{4}$	14
Lead		54 $\frac{1}{4}$	5 $\frac{3}{4}$	11 $\frac{2}{3}$
Copper		53	7	8 $\frac{1}{2}$
Braſs		id.		
Crude Tin		id.		
Regulus of Antimony		52	8	7 $\frac{1}{2}$
Reg. of Steel and Copper		id.		
Block-Tin		id.		
Iron		51 $\frac{1}{2}$	8 $\frac{5}{6}$	7 almost
Cinnabar of Antimony		51	9	6 $\frac{2}{3}$
Litharge of Silver		id.		
— of Gold		50 $\frac{1}{2}$	9 $\frac{1}{2}$	6
Silver Sixpence		49	11	5 $\frac{1}{2}$
Calcined Copper		49	11	5 $\frac{1}{2}$
Glaſs of Antimony		48	12	5
Lapis Calamin.		id.		
— Tutty		47	13	4 $\frac{8}{9}$
Crocus Metal.		46 $\frac{1}{2}$	13 $\frac{1}{2}$	4 $\frac{1}{2}$
Crude Antimony		45	15	4
Steel prep. with Sulphur		41	19	3 $\frac{2}{3}$
				White

	<i>The Weight.</i>		<i>Diminution of Weight.</i>	<i>Proport. Gravity.</i>
	<i>In Air.</i>	<i>In Water.</i>		
White Lead	gr. 60.	gr. 41	19	$3\frac{3}{19}$
Green Glafs		39	21	$2\frac{1}{21}$
Red Coral		id.		
Flint		38	22	$2\frac{8}{11}$
Bole Armon.		id.		
Lapis Judaicus		$38\frac{1}{9}$	$21\frac{8}{9}$	$2\frac{1}{2}$
Flint Glafs		id.		
Bone of Sheep juſt killed		33	27	$2\frac{6}{27}$
Filings of Steel		30	30	2
<i>Terra Lemnia</i>		id.		
Ivory		29	31	$1\frac{2}{31}$
Hartſhorn		28	32	$1\frac{3}{8}$
Mineral Sulphur		id.		
Crude Tartar		27	33	$1\frac{2}{33}$
Venice Glafs		$26\frac{1}{2}$	$33\frac{1}{2}$	$1\frac{1}{67}$
Ruſt of Braſs		25	35	$1\frac{2}{7}$
Burnt Lead		24	36	$1\frac{6}{9}$
Gum Arabick		18	42	$1\frac{2}{21}$
Opium		16	44	$1\frac{4}{11}$
<i>Lignum Guaiacum</i>		15	45	$1\frac{1}{2}$
Gum Tragacanth		id.		
Myrrhe		12	48	$1\frac{1}{4}$
<i>Cortex Guaiaci</i>		id.		
Gum Guaiacum		11	49	$1\frac{1}{9}$
Reſin of Scammony		10	50	$1\frac{1}{5}$
<i>Lignum Nephritic.</i>		id.		
Iſinglaſs		6	54	$1\frac{1}{9}$
China-Root		4	56	$1\frac{1}{4}$
Frankincenſe		id.		
Gall		2	58	$1\frac{1}{29}$
Gentian	lefs 15			$\frac{60}{75}$
Peruvian Bark	lefs $16\frac{1}{2}$			$1\frac{2}{3}$
Oak	lefs 26			$\frac{60}{80}$
Fir	lefs 48			$\frac{60}{108}$

The Weight of Salts in Spirit of Wine were found to be as follows.

	<i>The Weight.</i>		<i>Diminution of Weight.</i>	<i>Proport. Gravity.</i>
	<i>In Air.</i>	<i>In Water.</i>		
Of Crude Mercury —————	gr. 60.	gr. 57 $\frac{1}{3}$	gr. 2 $\frac{1}{3}$	17 near
<i>Mercurius Dulcis</i> —————		56	4	15
<i>Panacea Rubr.</i> —————		55	5	12
<i>Merc. Dulc.</i> 3d time sub. ———		id.		
————— 4th time sub. ———		54	6	10
<i>Turbith Mineral</i> —————		id.		
<i>Corrosive Sublimat.</i> —————		52 $\frac{1}{4}$	7 $\frac{1}{2}$	8 almost
<i>Sugar of Lead</i> —————		42	18	3 $\frac{6}{8}$
<i>Fix'd Salt of Nitre</i> —————		id.		
<i>Magistery of Coral</i> —————		39	21	2 $\frac{8}{11}$
<i>Sympathetick Powder</i> —————		id.		
<i>Tartar Vitriolized</i> —————		38 $\frac{1}{2}$	21 $\frac{1}{2}$	2 $\frac{3}{4}$
<i>Glauber's Sal Mirabil.</i> —————		38	22	2 $\frac{8}{11}$
<i>Emetick Tartar</i> —————		37 $\frac{1}{2}$	22 $\frac{1}{2}$	
<i>Sal Guaiaci</i> —————		37	23	2 $\frac{1}{3}$
————— <i>Prunella</i> —————		id.		
————— <i>Polychreston</i> —————		id.		
————— <i>Enixum</i> —————		id.		
<i>Cream of Tartar</i> —————		34	26	3 $\frac{4}{12}$
<i>White Vitriol</i> —————		id.		
<i>Salt of Steel</i> —————		33	27	2 $\frac{6}{27}$
<i>Green Vitriol</i> —————		32		
<i>Red Chalcantum</i> —————		id.		
<i>Salt of white Vitriol</i> —————		id.		
<i>Nitre</i> —————		id.		
<i>Volatile Salt of Hartshorn</i> ———		27	33	1 $\frac{2}{3}$
<i>Ens Martis</i> once subl. —————		26	34	1 $\frac{1}{7}$
<i>Sal Armoniac</i> purify'd —————		id.		
<i>Ens Martis</i> 3d time subl. ———		22	38	1 $\frac{1}{19}$

An Estimate of the Specific Gravity of Liquids,

The Weight of a Piece of Lead in Air, Gr. 455.

	Weight.	Diminution of Weight.	Proport.
In Oil of Vitriol ——— gr.	379	gr. 76	$5\frac{7}{8}$
Hermetick Spirit of Nitre	383	72	$6\frac{7}{8}$
Sp. Nitr. with Oil Vitr. —	396	59	$7\frac{1}{2}$
—— of common Nitre —	397	58	$7\frac{1}{2}$
—— Nitre Bezoartick —	id.		
Double <i>Aqua Fortis</i> ———	400	55	$8\frac{1}{2}$
Spirit of Vitriol ———	406	49	$9\frac{1}{2}$
Sp. Salt with Oil Vit. —	408	47	$9\frac{1}{2}$
Solut. of common Sal $\frac{2}{3}$ } with $\frac{3}{4}$ 6 of com. Wat. }	id.		
Sp. of Sal. Armo. Succ. —	409	46	$9\frac{1}{2}$
—— with Pot-Ashes ———	id.		
Simple <i>Aqua Fortis</i> ———	410	45	$10\frac{1}{2}$
Solution of Sal Enix $\frac{3}{4}$ } in Water $\frac{5}{8}$ ——— }	id.		
A Decoct. of Gentian ———	$410\frac{1}{2}$	$44\frac{1}{2}$	$10\frac{3}{4}$
Spirit of Tartar ———	411	44	$10\frac{1}{2}$
A Decoct. of Snakeweed	id.		
Sp. of Hartsh. not rectif.	id.		
A Decoct. of Sarsaparilla	412	43	$10\frac{3}{4}$
—— of China-Root ———	id.		
Spirit of common Salt ———	$412\frac{1}{2}$	$42\frac{1}{2}$	$10\frac{5}{8}$
A Decoction of Alum —	id.		
A Solut. of Alum $\frac{3}{4}$ } $\frac{3}{4}$ 1. in Water $\frac{3}{4}$ 6 — }	413	42	$10\frac{3}{8}$
Syden. Liqu. Laudan. —	id.		
Liqu. Panacea of Opium	id.		
Decoct. of the Peru Bark	id.		
—— of Pomegranates —	id.		
In a Solut. of Sal Armo. } pur. $\frac{3}{4}$ 1. and White }	id.		
Vit. $\frac{3}{4}$ 1. in Water $\frac{3}{4}$ 5. }			
Urine ———	$413\frac{1}{2}$	$41\frac{1}{2}$	$10\frac{8}{8}$
Sweet Spirit of Nitre ———	414	41	$11\frac{1}{2}$
Common Water ———	id.		
A Tinct. Alo. with Water	id.		
A Decoct. of red Sanders	id.		
Distill'd Vinegar ———	$414\frac{1}{4}$	$40\frac{3}{4}$	
Mint }			
Rue } Water Distill.	415	40	$11\frac{3}{8}$
(Savin)			

	Weight.	Diminution	Proport.
		of Weight.	
(Vinegar —————	gr. 415 $\frac{1}{4}$	19 $\frac{3}{4}$	
Milk —————	415 $\frac{1}{2}$	39 $\frac{1}{2}$	
A Decoction of Savin ———	id.		
An Infus. of Horehound ———	416	39	11 $\frac{2}{3}$
————— of Mint ———	id.		
————— of Wormwood ———	id.		
Elix. Pro. with Sal Vol. ———	416 $\frac{1}{2}$	38 $\frac{1}{2}$	
An Infusion of Tea ———	id.		
Spirit of Saffron ———	417	38	11 $\frac{3}{8}$
Spirit of Sal Armo. with } quick Lime ——— }	418 $\frac{1}{2}$	36 $\frac{1}{2}$	
<i>The same</i> <i>Piece of</i> <i>Lead.</i> } Sweet Spirit of Salt ———	id.		
Tincture of Castor ———	419	36	12 $\frac{1}{2}$
Sp. of Wine with Camph. ———	id.		
Mynsicht's Tinct. Steel ———	420	35	13
Tinct. Sulph. with Spi- } rit of Turpentine — }	id.		
Oil of Turnips ———	id.		
Tincture of Coral ———	421	34	13 $\frac{1}{2}$
Spirit of Wine ———	421 $\frac{1}{2}$	33 $\frac{1}{2}$	13 $\frac{3}{8}$
Oil of Turpentine ———	422 $\frac{1}{2}$	32 $\frac{1}{2}$	
Spirit of Wine rectify'd ———	423	32	14 $\frac{3}{8}$
(Boil'd Water ———	424	31	14 $\frac{1}{2}$

The Numbers in the last Column shew the Proportion of the specifick Gravity of Fluids, if compared reciprocally: For as 11 $\frac{3}{8}$ is to 5 $\frac{7}{6}$, so is the Gravity of Oil of Vitriol to the Gravity of Spirit of Saffron, *viz.* about double.

The Scales for these Purposes are ingeniously contrived and sold by Mr. Hauksbee in Crane-Court in Fleet-street.

Specifick Medicines, is a Term heretofore much in use for such whose Operations could not be accounted for: but a more natural way of reasoning hath brought a great many of those things to light which first occasioned the Use of this Refuge; and convinces us that all others that yet remain obscure, must operate by their mechanical Properties, altho' perhaps the Fineness of their Parts may elude the Senses, and consequently all Certainty as to the particular Manner of their Agency. See *Dispensatory*, pag. 4.

Specillum, an Instrument with

which Surgeons search Wounds, in the manner of a Probe.

Speculation, is strictly what we contemplate by the Mediation of Vision; but is often figuratively used for those Operations in the Mind as require no such Helps, more properly by Mr. Locke called Reflection, as the other belongs to Sensation; and hence Speculation is by the Institution-Writers made to express that Part of Medicine which contemplates, and directs the Rules for Practice from Principles of Theory and Reason.

Spe-

Speculum Ani, is an Instrument with which Surgeons dilate the Fundament to extract Bones, or any thing that may be there lodged. And,

Speculum Matricis, is an Instrument to do the same Office with respect to Matter obstructed in the Womb; or to assist in any manual Operations relating thereto.

Speculum Oculi, and

Speculum Oris, are for the same purpose, to inspect the Eye or Mouth with.

Spelter, the same as *Zinck*, which see.

Sperma. See *Semen*.

Sperma Ceti, *Parmasitty*. The Antients were great Strangers to this Drug; and *Schroder* himself seems very much unacquainted with it, not well knowing whether to make it an animal or a mineral Substance, tho' he places it among the Minerals, and calls it *Aliud Genus Bituminis*, his preceding Articles being about such Substances. It is now almost universally known, that a particular sort of Whale affords the Oil whence this is made; and that it is very improperly called *Sperma*, because it is only the Oil that comes from the Head which it can be made from. I say made from, because it is by some peculiar Management, which is in the Knowledge only of very few, mightily changed from what it is naturally, before it comes to be fit for use in the Shops; the Oil it self being very brown and rank. The peculiar Property of it is to shoot into Flakes, not much unlike the Crystallization of Salts, after it has stood a due time to rest in a proper Vessel. But in this state 'tis yellow, and has a certain rankness, from which 'tis in great measure freed, and rendered white, by squeezing it

between warm metalline Plates in a Press; and afterwards exposing the remainder to the open Air, which still blanches it farther, and takes away its offensive Scent, till at length it becomes perfectly pure, inodorous, flaky, smooth, white, and in some measure transparent. That Fish which about 31 Years since was taken in the *Thames*, and brought ashore at *Blackwall*, was discovered accidentally to be the true *Parmasitty* Whale. A Person buying some quantity of the Oil which a poor Body had scummed off the Water, as it melted from it, for a small Value, set it in a place out of the way, until some use, which it might be thought fit for, should happen; but after a long time looking upon it, the Owner found it hardened into a Cake, or a solid Consistence, which a Person skilled in the Manufacture hearing of, bought it, and procured from it as good a *Parmasitty* as any yet met with in *London*.

Spermatick Parts, are those concerned in secreting the Seed. See *Generation*. And

Spermatocoele, from *Sperma*, Seed, and *κόλη*, *Tumor*, a Swelling; is a Rupture occasioned by a Distension of the feminal Vessels.

Sphacelus, from *σφάττω*, *interficio*, to kill; because it is looked upon to be a fatal Sign, and is actually a Mortification (which see) upon the part affected.

Sphenoides, from *σφην*, *Cuneus*, a Wedge, and *εἶδος*, *Forma*, Shape, is the same as *Cuneiforme Os*. See *Cranium*.

Sphenopharyngæus, and

Sphenopalatinus, and

Sphenopterigopalatinus, are all Names for the same Muscles, described under *Pteristaphylini*; which see.

Sphere,

Sphere, is any round Ball, whose right Lines from the Center to the *Periphery* are equal: and this is common to all Bodies of this Figure, that they are to one another as the Cubes of their Diameters; whence

Spheristicos, σφαιριστικός, is one so called by *Galen*, who exercises at that Game with Balls, which we commonly call Racket, for their Health; and hence the Place so made use of was called the *Sphaeristerium*.

Spheroid, from *Sphere*, and σφαιρικός, *Forma*, Shape; is a solid Figure made by the Rotation of a Semi-Ellipsis about its Axis, and is always equal to $\frac{2}{3}$ of its circumscribing Cylinder; making a kind of oblong Sphere.

Spheroides, is by Anatomists applied to Parts which approach near to that of a Sphere in Shape.

Sphincter, from σφίγγω, *constringo*, to bind together; is ascribed to such Muscles as draw up, and keep shut the Parts; as the

Sphincter Vesicæ. See *Bladder*. And,

Sphincter Labiorum. See *Orbicularis*. And,

Sphincter Ani. See *Intestines*. And so of other Places of like Formation.

Sphinx, was the Name of a fictitious Being said to puzzle *OEdipus* the *Theban* with Riddles: whence some have justly enough called the strange Notions of the Chymists *Sphingis Ænigmata*.

Spica, signifies properly the Tops of any Herbs, but is chiefly used for the Lavender kind; hence,

Spicata, is a Term given to some Compositions that take in such Ingredients, for those of principal Efficacy.

Spine, is used in the same sense as *Acantha*, and therefore is some-

times used for such Parts as shoot out sharp, like a Thorn; particularly the

Spine, or Back-bone. See *Vertebrae*.

Spina Ventosa, is used for a Caries, or Rottiness of the Bone from sharp Humours.

Spinal Marrow. See *Marrow*.

Spinati Musculi, are two Muscles on the Sides of the Neck, arising from the five superior Processes of the *Vertebrae* of the *Thorax*, and inferior of the Neck; and in their Ascent they become more fleshy, and are largely inserted into the inferior Part of the *Vertebrae* of the Neck laterally. They draw the Neck backwards.

Spiral Line, is generated by a Rotation round any Center, but continually receding further from it: as in the Figure.



Spiracula, are the same as Pores, or any breathing Passages.

Spirit, as a Principle in Body, see *Principle*; in an animal Body, is no other than the nervous Fluid, and is a fine soft Juice separated from the Blood, preserving a due Moisture and Elasticity. See *Fibre*.

Splanchnicks, from σπλαγχνικός, *Viscera tractare*, to operate upon the Bowels; are such Medicines as are supposed to cleanse the Bowels and *Viscera*.

Splen, the Spleen. The Spleen is situated in the left *Hypochondrium*, under the *Diaphragma*, between the Ribs and the Stomach, above the left Kidney. It is tied to the *Peritonæum*, to the Midriff, and to the *Omentum*. It is of a blueish or leaden Colour, of an oblong Figure, thick at the Edges, and not thin, as the Liver. It has two Membranes. The external comes from the *Peritonæum*. The internal Membrane

brane is finer and thinner than the external: For if you blow into the Splenick Artery, the Air shall pass thro' the one, but not the other. Its Fibres are not irregularly woven, as those of other Membranes seem to be; but they come from innumerable Points, as Rays from so many Centres, and the Fibres of one Point are regularly woven with the Fibres of the Points surrounding it. It receives Veins, Nerves and Arteries from those that enter the Spleen. The Substance of the Spleen is not only kept together by its two Membranes, but also by innumerable Fibres which come from the Points of the internal Membrane, and are inserted in the Points of the opposite side of the same Membrane; the Expansion of the Extremity of these Fibres seems to compose the internal Membrane. The Spleen is composed of an Infinity of Membranes, which form little Cells and Cavities of different Figures and Bigness, which communicate with one another, and which are always full of Blood. At the Extremities of the Blood-Vessels in the Spleens of Sheep, we find several small, white, and soft Specks, which *Malpighi* calls Glands. The Spleen has Arteries from the *Cæliack*, whose Capillary Branches make frequent Inosculation upon the Membranes of the Cells. Its Veins, whose Extremities communicate with the Cavities of the Cells, as they come out of the Spleen, unite and make the *Ramus Splenicus* of the *Vena Portæ*, which carries the Blood from the Spleen to the Liver. These, with its Nerves, which are considerable from the *Plexus Splenicus*, are equally distributed thro' the whole Substance of the Spleen, being all included in a common *Capsula*. There are likewise a few *Lymphatick Vessels*

which arise from the Spleen, and discharge them into the Lumbar Glands.

The Spleen being always full of a dark-coloured Blood, was by the Antients thought to be the Receptacle of the *Atra Bilis*, a Humour no where to be found. And all that has been said about its Use by the Moderns, has been to little satisfaction, till Dr. *Keil* taught us thus to reason thereupon. We must consider that the Bile is composed of Particles, which slowly combine and unite together, and that by reason of the Vicinity of the Liver to the Heart, and of the swift Motion of the Blood thro' the *Aorta*, these Particles could not in so small a time, and with so great a Velocity, have been united together, had not the Blood been brought thro' the Coats of the Stomach, Intestines, and *Omentum*, by the Branches of the *Vena Portæ* to the Liver. But because all these Parts were not sufficient to receive all the Blood which was necessary to be sent to the Liver, therefore Nature framed the Spleen, into whose Cavities the Blood being poured from a small Artery, moves at least as slowly as any that passes otherwise to the Liver; by which means the Particles which compose the Bile in the Blood which passes thro' the *Ramus Splenicus*, by so long and slow a Circulation, have more Chances for uniting them, which otherwise they could not have had, had they been carried by the Branches of the *Cæliack* Artery directly to the Liver; and consequently without the Spleen, such a Quantity of Bile as is now secreted, that is, as Nature requires, could not have been secreted, by the Liver. And this he takes to be the true Use of the Spleen.

Spleneticks, and

Splenica,

Splenica, are Medicines against Distempers of the Spleen.

Splenii Musculi, also from their Shape, called *Triangulares*, are Muscles that arise from the four upper Spines of the *Vertebrae* of the Back, and from the two lower of the Neck, and ascending obliquely, adhere to the upper transverse Processes of the *Vertebrae* of the Neck, and are inserted into the upper part of the *Occiput*. They pull the Head backwards to one side.

Spondylus, *σπόνδυλος*, from *sponda*, a Bed: some have thought fit to call the Spine, or Back-bone thus, from the Shape and Fitness of the *Vertebrae*, to move every way upon one another.

Spongiosum Os, and

Spongoides, from *Spongia*, a Sponge, and *ἴδιος*, *Forma*, Shape, is the same as *Os Cribriforme*, because it is hollow and porous like a Sponge or Sieve.

Sponsus: what the proper Signification of this is every one knows, but the Chymists have given it to *Mercury*, as *Maritus* to Sulphur, to express their fitness to join, or be joined with, one another.

Sporadick, is used for such Diseases as reign in the same Place and Time.

Springy. See *Elastick*.

Spuma, strictly signifies Froth of any kind: whence some physical Writers in a figurative sense apply it variously, either to the Humours or Excrements of an human Body, as they happen to partake of this Quality. The Chymists likewise according to Custom use it in a very whimsical manner for many things, as the *Spuma Duorum Draconum* is the *Butyrum Antimonii*; Mercury and Antimony, of which it is made, with them being the two Dragons.

Spurious, are such Diseases as in some Symptoms cannot be brought under any distinct Head, and therefore joined with the name of some with which they most agree, and which are therefore often called also bastard; as a bastard Pleurisy, a bastard Quinsy, and the like.

Sputum, expresses every thing that is brought up by Spitting, different from the *Saliva*, which only comes thro' those Ducts that take their Names from it. But from some Resemblance hereunto the Chymists will also have other Things thus called; as Litharge of Silver or Gold, *Sputum Lunæ*, vel *Solis*.

Squammous Suture, from *squamma*, a Scale; is such a Suture where the Bones lie over one another like Scales. See *Suture*.

Squillum; some have fancy'd thus to call the *Fimus Equinus*, Horse-Dung, which is often prescribed in pleuritick Affections, and has been proved by repeated Experience a more excellent Remedy than others of the same Intention, tho' much more costly and hard to obtain.

Squinzy, is the same as *Angina*, and is often mortal, because it shuts exactly the Chink of the *Larynx*, if the Muscles thereof are much inflamed; wherefore *Bronchotomy* in such Cases is absolutely necessary, which tho' rarely practised, yet may be safely used.

Stacte, signifies that kind of Myrrh which distils or falls in drops from the Tree. 'Tis also used by some Writers for a more liquid kind of Amber, than what is commonly met with in the Shops; whence in *Scribonius Largus*, *Aegineta*, and some others, we meet with a *Collyrium*, and several other Forms wherein this was the chief Ingredient,

ent, distinguished by the name of *Stactica*.

Stamina, are the Solids of a human Body: and in Botany those little fine Threads or Capillaments, which grow up within the Flowers of Plants encompassing round the Style, and on which the Apices grow at their Extremities: whence Botanists call that a

Stamineous Flower, which is so far imperfect as to want those coloured Leaves which are called *Petalæ*, and consists only of the *Stylus* and the *Stamina*. And such Plants as do bear these *Stamineous Flowers*, Mr. Ray makes to constitute a large Genus of Plants, which he calls *Herbæ flore imperfecto sive apetalæ stamineæ*. And these he divides into such as, 1. Have their Fruit or Seed totally divided from the Flower; and these are such Plants as are said to be of *different Sexes*: The reason of which is, that from the said Seed some Plant shall arise with Flowers and no Fruit, and others with Fruit and no Flowers: As *Hops*, *Hemp*, *stinging Nettles*, *Spinage*, *Cynocrambe*, *Mercurialis*, and *Phyllon*. 2. Such as have their Fruit only a little disjoined from their Flowers; as the *Ambrosia*, *Bardana minor*, *Ricinus*, and the *Heliotropium Tricoccon*. 3. Such as have their Fruit immediately contiguous, or adhering to their Flower: And the Seed of these is either, 1. Triangular: And of this sort, some are lucid and shining, as the *Lapathum*, *Rhabarbarum*, and *Bistorta*, to which also may be reckoned the *Perficaria*. Others are rough, and not shining; as the *Helleborus Albus*, *Fagopyrum*, *Convulvulus niger*, and the *Polygonum*. 2. Such as have a roundish Seed a little flatted or compressed, or of any other Figure but the former *Triquetrous* or

Triangular one. And these have their Flower, or the Calyx of the Flower adhering to the Bottom or Basis of the Seed or Fruit; as the *Potamogeton*, *Blitum Sylvestre*, *Parietaria*, *Atriplex*, *Blitum Sativum*, *Amuranthes Hoclocerieus*, and the *Saxifraga Aurea*. 3. Such whose Flowers adhere to the top or uppermost of the Seed; as the *Beta*, *Asarum*, *Alchimilla*. And to the kind of Plants, Mr. Ray reduces also the *Kaligeniculatum Sedum fruticosum*, the *Scoparia*, or *Belvidere* of the *Italians*.

Stannum, Tin, whence Lead is also made; and hence *Stannaries* are those Works to refine Tin from the Dross wherewith it is naturally produced.

Staphis, *σταφίς*, is strictly a Grape, or a bunch of Grapes; whence from their Likeness thereunto it is applied to many other Things, especially the glandulous Parts of the Body, whether natural or distempered: hence also,

Staphyle, *σταφύλη*, and

Staphyloma, *σταφύλωμα*, are names given to some of those Parts when inflamed or swelled.

Stapes. See *Ear*.

Stapis Musculus, or *Musculus Stapidis*, is a Muscle of the Eyebrows.

Statics, is a Species of Mechanics conversant about Weights, and shewing the Properties of Gravity, Levity, or Equilibrium of Bodies. When it is restrained to Fluids, it is called *Hydrostatics*, which see.

Status Morbi, the same as *Acme*; which see.

Steatoma, from *στέαρ*, *sebum*, Suet; is a Swelling consisting of a Matter much like Suet, soft, without pain, contained in a *Cystis*, and easily turned out upon Incision.

Steel. See *Mars*.

Stegnosis,

Stegnosis, from στεγω, *conspiro*, to fix or harden, is an Obstruction of the Pores; and

Stegnoticks, are therefore the same as Astringents; which see.

Stella, a Star, by the Chymists, is very oddly applied to many things, as *Stella Occidens*, to the Sal Ammoniac; *Stella Terræ*, to Talk, &c. from some Resemblances to a Star upon them.

Stenos, στενός, signifies any thing narrow or strait: whence,

Stenothoraces, στενοθώρακες, are those who have narrow Chests, and on that account are liable to phthical Affections; and so of many others from the same Foundation.

Sterility, Barrenness, arises from various Causes, and is as variously to be remedied according to the Influence of such Causes.

Sternohyoides. See *Lingua*.

Sternothyroide. See *Larynx*, and *Lingua*.

Sternum, the Breast-bone, is situated in the middle of the Breast; it is composed of seven or eight Bones in Infants, which at first are Cartilaginous, but which harden and unite into three Bones after they are seven Years old: the Substance of these Bones is not solid, but somewhat spongy. The first and uppermost Bone is the biggest and largest; it is uneven and rough on its outside, but smoother on its inside, where it has a shallow Furrow which gives way for the descent of the Wind-pipe. It has a *Sinus* lined with a Cartilage on each side of its upper end, wherein it receives the Heads of the *Claviculæ*. The second is longer and narrower than the first, and on its sides there are several *Sinus's*, in which the cartilaginous Ends of the Ribs are received. The third is shorter, but broader than the second; it receives

into the lateral *Sinus's* the Extremities of the last true Ribs; it terminates in a Cartilage which hardens sometimes into a Bone, called *Cartilago Xiphoides*, or *Ensisformis*, because it is broad at its upper end, where it joins the third Bone, and grows narrower to its Extremity, where it is sometimes forked; and sometimes it bends inwards, compresses the upper Orifice of the Stomach, and causes a great Pain and Vomiting. The use of the *Sternum* is to defend the Heart, and to receive the Extremities of the true Ribs.

Sternutation, Sneezing, is a convulsive shaking of the Nerves and Muscles, first occasioned by an Irritation of those in the Nostrils: Hence,

Sternutatories, are Medicines which procure Sneezing.

Stibium, is an antient name for Antimony, but now seldom used.

Stigmata, are particular Marks in the Face or other Parts of the Body, commonly called *Moles*, and whence some Enthusiasts and Impostors pretend to foretel many future Events as to the Fortunes of such Persons.

Stimulate, is a Property in angular or sharp Bodies, whereby they cause Vibrations and Inflections of the Fibres, and a greater derivation of nervous Fluid into the Part affected.

Stillatitious, is any thing procured by Distillation.

Stomachi Ventriculus, or Γαστήρ, lies immediately under the Midriff; the Liver covers a part of its right side, the Spleen touches it on the left side, and the *Colon* at its Bottom, to which also the Cawl is tied. Its Figure resembles a Bag-pipe, being long, large, wide, and pretty round at the Bottom, but shorter and

and less convex on its upper part, where it has two Orifices, one at each end, which are somewhat higher than the middle between them. The left Orifice is called *ισοθία*, to which the *Oesophagus* is joined. By this Orifice the Aliments enter the Stomach, where being digested, they ascend obliquely to the *Pylorus*, or right Orifice, which is united to the first of the Intestines. At this Orifice the Tunics of the Stomach are much thicker than they are any where else; and the inmost has a thick and strong Duplicature in form of a Ring, which serves as a Valve to the *Pylorus* when it contracts and shuts. The Stomach is made of four Membranes or Coats. The first and inmost is made of short Fibres which stand perpendicularly upon the Fibres of the next Coat: they are to be seen plainly towards the *Pylorus*. When the Stomach is distended with Meat, these Fibres become thick and short. Whilst they endeavour to restore themselves by their natural Elasticity, they contract the Cavity of the Stomach, for the Attrition and Expulsion of the Aliments. This Coat is much larger than the rest, being full of Plaits and Wrinkles, and chiefly about the *Pylorus*: These Plaits retard the Chyle, that it run not out of the Stomach before it be sufficiently digested. In this Coat there are also a great number of small Glands which separate a Liquor, which besmeares all the Cavity of the Stomach, and helps the Concoction of the Aliments: therefore this Coat is called *Tunica Glandulosa*. The second is much finer and thinner; it is altogether nervous; it is of an exquisite Sense, and it's called *Nervosa*. The third is Muscular, being made of strait and circular Fibres; the strait run upon the upper

part of the Stomach, between its superior and inferior Orifices; and the circular run obliquely from the upper part of the Stomach to the Bottom. Of these the innermost descend towards the right side, and the outermost towards the left, so that by their Action both ends of the Stomach are drawn towards its middle, and the whole is equally contracted; by their Contraction and continual Motion, the Attrition and Digestion of the Aliments is in a great measure performed. The fourth Tunic is common, it comes from the *Peritonæum*. The Stomach sends Veins to the *Porta*, viz. the *Gastrica*, *Pylorica*, and *Vas Breve*, and Branches to the *Gastro-epiplois dextra* & *sinistra*, which are accompanied with Branches of the *Arteria Cœliaca*, all which lie immediately under the fourth Coat of the Stomach. The eighth Pair of Nerves, or *Par Vagum*, gives two considerable Branches to the Stomach, which descending by the sides of the Gullet, divide each into two Branches, the external and internal. The two external Branches unite in one, and the internal do so likewise; both which piercing the Midriff, form, by a great number of small Twigs, upon the upper Orifice of the Stomach, a *Plexus*: and then the internal Branch spreads it self down to the Bottom of the Stomach; and the external Branch spreads it self upon the inside, about the upper Orifice of the Stomach. This great number of Nerves, which is about the upper Orifice, renders it very sensible; and from them also proceeds the great Sympathy betwixt the Stomach, Head, and Heart: upon which account *Van Helmont* thought, that the Soul had its Seat in the upper Orifice of the Stomach. The *Plexus Nervosus* of the *Hypochondria*

chondria and *Mesenterium* give several Branches to the Bottom of the Stomach ; therefore in Hyfterick and Hypochondriack Passions the Stomach is also affected. See *Digestion*. Hence,

Stomachicks, are such Medicines as are serviceable to the Stomach.

Stone, is an Aggregate of many of the harder Parts of the Urine, pent up by reason of the Straitness of the Ducts.

Strangury, is any Difficulty of Urine, from whatsoever Cause, attended with a continual involuntary Dripping.

Strata, are the same as Layers ; as, *Stratum super Stratum*, are Rows over one another ; and

Stratification, a Term also used by the Chymists, for the same Purpose.

Strength. There is no need of explaining this Term in all the respects it is used, unless as it concerns the animal OEconomy, wherein the Strengths of different Animals of the same Species or of the same Animal at different times, are in a triplicate Proportion of the Quantities of the Mass of their Blood. And the whole Strength of an Animal, is the Force of all the Muscles taken together ; therefore whatsoever encreaseth Strength, encreaseth the Force of all the Muscles, and of those serving Digestion as well as others. Yet notwithstanding the Truth of this, the Quantity of Blood may be encreased in such Circumstances, as to abate the Strength. The *Æquilibrium* between the Blood and Vessels being destroyed, wonderfully lessens the Strength. The sudden Suppression of Perspiration, tho' it increase the Quantity of the Blood, as it must considerably do by *Sanctorius's* Calculation, yet it lessens the Strength,

because the retained Matter being what ought to be evacuated, so alters the Texture of the Blood, as to make it unfit for muscular Motion. Suppose the encreased Quantity to be joined by an extraordinary Viscidity, the Quantity of small separable Parts decreasing, as the Viscidity encreases, the Quantity of animal Spirits, separated in the Brain, will be less ; and the Tensity of the Fibres being, in proportion to the animal Spirits, forced into them, they will not be able to counterpoise the great weight of the Blood, and so the Strength will be diminished. *Bellini* proves, that if the Blood be so vitiated, as to increase or diminish Strength, 'tis the same as if the Blood was in a natural State, but its Quantity encreased or diminished in the same Proportion : So that the Blood, when vitiated, may so impair the Strength of the Muscles, as to spoil even Digestion ; and yet in some Cases it may be so vitiated, as to help Digestion, and to encrease Strength.

Strengtheners. By this Term we would be understood to mean such things as add to the Bulk and Firmness of the *Solids* ; and these differ from Cordials, as a Bandage does from a Flesh-brush. The former are such as facilitate, and drive on the vital Actions ; but these such as confirm the *Stamina*, and maintain the Solids in such a Condition, as to exert themselves into Action on all proper Occasions, with the greatest Force and Vigour.

The continual Waste which constant Motion makes in the Constitution, were it not for frequent and proper Supplies, would soon wear the Body quite out. The Attritions and Abrasions of the circulating Fluids would quickly carry away the Canals in which they circulate, were
not

not somewhat furnished in their Composition, which is suited to fall into, adhere with, and recruit that which is washed off. And those Particles must be much more disposed so to do, whose Adhesions are greatest when once they come into Contact; such are those of Bodies we call glutinous, and which easily form themselves into Jellies, and such-like Consistencies; for the Parts of such Bodies are very light, by the Over-portion of their Surfaces to their Solidities, whereby their Motions are both more languid when in Circulation; and when once they stop, their Cohesions will be much the stronger with whatsoever they happen to fall into Contact. Medicines of this Tribe are therefore of great Service in Hecticks, where the swift Motion of a thin sharp Blood wears away the Substance of the Body instead of nourishing it; for they not only retard the inordinate Motion, but give such a Weight and Consistence to the Juices, as fits them also for Nourishment.

There are likewise other Causes, which may weaken the Solids, by adusting, or occasioning them to relax too much. Whatsoever therefore acts as a *Stimulus*, and crisps and corrugates the Fibres into a more compacted Tone, which most austere and pointed Bodies do, will remove such Weakness, and increase Strength: and as also too much Moisture may contribute to such Relaxation, what has no other Quality but absorbing and drying up such superfluous Humidities, may deserve, tho' accidentally, to come under this Denomination.

Striæ, are the small Hollows or Channels in Shells, Plants, or any other Bodies.

Strictor, the same as *Sphincter*; which see.

Struma, is a Distemper, wherein the Glands are very much indurated, and distinguished by some Writers into different kinds from the Parts which are chiefly affected, the same as *Scrophula*, and what we commonly call the King's-Evil, from a strange Conceit of its being curable by the *Royal-Touch*; concerning which may be consulted *Wiseman* in his Chirurgical Treatises: And hence,

Strumous, expresses such Swellings in the Glands as happen in this Distemper.

Stupefiers, the same as *Narcotics*; which see.

Stupha, a Stupe, the same as *Fomentation*.

Stupor, a Numbness, occasioned by any accidental Bandage that stops the Motion of the Blood and nervous Fluids, or from a Decay in the Nerve, as in a Palsy.

Stygia, is ascribed to a Water made from Sublimate, and directed in most Dispensatories, on a Supposition of its poisonous Qualities, from *Styx*, a Name given by the Poets to one of the Rivers in Hell: the *Aqua Regia* is also thus sometimes called from its corrosive Qualities.

Style, so Botanists call that middle prominent Part of the Flower of a Plant, which adheres to the Fruit or Seed; 'tis usually slender and long, whence it has its Name. And hence,

Styliformis Processus, is from its shape thus called. See *Granium*. And

Styloceratohyoides, are the same as *Ceratohyoides*; which see.

Styloglossus; see *Lingua*. And,

Styloides, the same as *Styliformis*.

And,

Stylohyoides; see *Lingua*. And,

Stylopharyngæus; see *Oesophagus*.

These are several Terms com-

pounded of *Stylus*, and Words expressing the Parts whereunto it is applied; which see under those Words.

Stypticks, signifies any thing that binds together, the same as Astringents; but generally expresses the most efficacious sort, or those which are applied to stop Hæmorrhages.

Subclavian, is applied to any thing under the Arm-pit, or Shoulder, whether Artery, Nerve, Vein, or Muscle. And hence,

Subclavius, is a Muscle that ariseth from the lower side of the *Clavicula*, near the *Acromium*, and descends obliquely, to be inserted into the upper part of the first Rib, near the *Sternum*.

Subcutaneous, is any thing under the Skin: whence some Writers, and particularly *M. A. Severinus*, call those Tumours, such as do not extend far enough to affect it; or where the obstructed Matter gathers all together below it.

Subduction, is variously applied; but the only Signification worth notice here is given it by *Bellini*, who applies it to that Motion of an Artery when it is in its Systole, or draws from the Touch inwards.

Sublimation, differs very little from Distillation, excepting that in Distillation only the fluid Parts of Bodies are raised, but in this the solid and dry; and that the Matter to be distilled may be either solid or fluid: but Sublimation is concerned only about solid Substances.

There is also another Difference, namely, that Rarefaction, which is of very great Use in Distillation, has hardly any room in Sublimation; for the Substances which are to be sublimed, being solid, are incapable of Rarefaction: and so 'tis only Impulse which can raise them.

However, it may not be improper to inquire a little more nicely into the reason of such a Diversity in the Elevation of Bodies; why some do ascend with a gentle Heat, and others are not to be raised with the most vehement Fire. And such an Inquiry will more properly come in here, because this Head contains all the Business of Volatility and Fixation; concerning which so much has been writ, and so little to the Purpose.

Fixed Bodies are such as abide the Fire; volatile, such as not being able to endure the Fire, are raised by the Force of its Heat. We will therefore begin with the first, and explain the Manner how in volatile Substances, which seem to be of the same Nature, there happens to be so great a Variety and Difference of Elevation.

The Cause of this Elevation and Ascent in the Particles of Bodies, is to be ascribed to the Fire, not only on the account of Impulse, but of another Property the Fire has; namely, to insinuate it self into all the Interstices of these Bodies, and thereby break the Cohesion of their Parts, so that they are at last divided into very small Parts, if not into the smallest, which Art can reduce them into. Particles thus separated and divided, lose much of their Gravity. For the Gravity of the same Particle decreases in the same Proportion as the Cube of its Diameter is lessened. Suppose therefore a Body, whose Diameter is 12, and its Gravity 12: If then its Diameter be made less by 1, (*viz.* 11.) the Gravity of that Body will be only $9\frac{1}{4}$, or thereabouts. For 1331, which is the Cube of the last Diameter, bears the same Proportion to $9\frac{1}{4}$, which 1728, the Cube of the first Diameter, does to 12, the Gravity

Gravity of the Body. But if the Diameter be reduced to 10, the Gravity will but just exceed 6; and if it is diminished half, that is to 6, then the Gravity will be less than 2. So that very minute Corpuscles, when their Diameter is lessened as much as may be, have scarce any Gravity at all. Therefore when once they are divided after such a manner as has been described, they are very easily sublimed.

Nor does there only a Decrease of Gravity follow from this Division of the Particles of Bodies, but there is another thing too, which is the Result of it, that conduces very much to quicken the Ascent; and that is, the Variety of their Surfaces. *For the Surface of a Body decreases in a very different manner from Gravity only, as a Square of the Diameter is lessened.* Therefore where the Gravity decreases in such a Series, as express'd by the Numbers 1728, 1331, 1000, the Diminution of the Surface will observe this Proportion, *viz.* 144, 121, 100. And when upon reducing the Diameter to 6, the Gravity will be less than 2, the Surface will still amount to 36. So that tho' the Gravity of a Particle be so lessened, as to be reduced almost to nothing, yet there will be Surface enough left, which will serve to raise it. This Argument, which is drawn from the Largeness of the Surface, and which has been explained by Calculation, may be demonstrated as it were to Sense, by the following Experiment. If Water be pour'd upon the Filings of Iron, and a little Oil of Vitriol dropt upon it, a Fermentation will presently arise, and the Globules of Air, in striving to disengage and extricate themselves, will carry up with them some of the Particles of Iron to the

Surface of the Water. This can happen upon no other account, but that the Proportion of Gravity in the Filings of Iron is very small in respect to the Largeness of their Surface; and therefore Iron is forced upwards by a Body, which is a great deal specifically lighter than it self. But how much this must contribute to a more quick Ascent, has been in general explained already, and will be much more evident to the Senses, from the Sublimation of Camphire, Benzoin, and Arsenick: whose Particles, as they cohere but loosely, are for that reason diffused into a large Surface: upon which account they are the easiest to be sublimed of any. Nay, these solid Particles, upon account of their Surface, will sooner ascend than some Fluids. So Flower of Sulphur rises sooner than Oil, not only that of Vitriol, but any other, tho' ever so light. By this Contrivance of Nature, *viz.* that the Gravity of Bodies decreases in a triplicate; but their Surface in a duplicate Proportion of their Diameter; it comes to pass that Bodies which have a very different Gravity, may be raised with the very same Force. Thus the Salts of Animals, as of Hartshorn, human Blood, of Vipers, &c. being composed of very minute Corpuscles, as is found by Experience in distilling them, do easily ascend, because the Surface in them is not lessened so much as the Gravity is. And the Salts of Vegetables, as of Tartar and Balsam, &c. which are of a more close Texture, by reason of their large Surfaces, are without much difficulty raised. The Corpuscles also of Minerals and Metals, tho' very compact and heavy, do in some measure give way to the Fire, and are capable of being sublimed.

In all these Instances the Breadth of the Surface, which exposes the Particles more to the *Impetus* of the Fire, is the reason why they are raised with as much ease, as if their Gravity had been lessened by diminishing their Surface: So that Particle, tho' ever so different in Weight, may be equally raised by the same Degree of Heat, if the Proportion of their Gravity be reciprocal to that of their Surfaces.

Sublimate, Crude. See *Mercury*.

Sublimis, the same as *Perforatus*; which see.

Sublingual Glands. See *Mouth*.

Sublinguales, both from *sub*, under, and *lingua*, the Tongue. The latter are Medicines to roll about in the Mouth, as Lozenges, and the like.

Submersus, is said of any thing dipped under Water: whence by some it is applied to a low and almost undiscernible Pulse.

Subscapularis Musculus, covers all the internal side of the *Scapula*. It ariseth fleshy from the upper and lower *Costa*, and is inserted into the Neck of the *Humerus*. It draweth the Arm to the Ribs.

Subsidence, is the Settling of any thing; the same as Sediment.

Substance, in a physical Sense, is the same as Matter, which see.

Substitute, is said of one Medicine put in the room of another, nearest to it in Vertue, when that cannot be had.

Subsultus, from *sub*, under, and *salio*, to leap; is the same as *Spasmodick*, or a Convulsion, from the Sense of leaping, which the Nerves give to the Hand lying upon them.

Subtile Matter. See *Matter*.

Subtilization, is making any thing smaller, so as to rise in Vapour. See *Distillation* and *Sublimation*.

Sububeres, hath been used by

some Writers for those Infants who yet suck, in distinction from those who were weaned, and then called *Exuberes*, from the two opposite Prepositions *Sub* and *Ex*; and *Ubera Mammæ*, the Breasts.

Succedaneum, is any thing substituted in the room of another. But *Bellini* also uses it for those Symptoms, which by others have been called *Super-venientia*; which see.

Succenturiati Renes. See *Kidneys*.

Succubus, the same as *Incubus*; only that this is supposed of the Female, as that is an evil Spirit of the Male-kind: but such Figments are now in derision.

Succus, is any Juice; whence,

Succus Nervosus, the animal Spirits.

Succus Nutritius, Chyle.

Succus Pancreaticus, the Juice separated by the Sweatbread, &c.

Succussion, and *Succussion*, is such a shaking of the nervous Parts as is procured by strong *Stimuli*, like *Sternutatories*, Friction, and the like, which are commonly used in Apoplectick Affections.

Sudarium, is a Name given to a Cloth, with which Sweat has been wiped off; whence many such are shewed amongst the Relicks of the *Roman Church*, to which strange Vertues have been ascribed: and even *Helmont* vindicates their Opinion of a Cloth, said to have been so used by *St. Paul*; affirming it to have a real magnetick Vertue.

Sudor, Sweat. This differs much from Perspiration, and is the Consequence of accelerating the Blood's Motion by *Stimuli*, or Exercise, or a Relaxation of the Pores; the latter is the Cause of Fainting, and cold Sweats. See *Perspiration*, from an Acquaintance with which, this will be best understood. Hence,

Sudo-

Sudorificks, from *Sudor*, Sweat, and *facio*, to make, are such Medicines as promote Sweat.

Suffimentum, and

Suffitus, is the same as Fumigation, by burning things upon live Coals, and receiving the Steam for many medicinal purposes.

Suffocation, Choaking. This is used in Histerick Cases, wherein the *Uterus* is imagined to be obstructed, and as it were suffocated with ill Humours.

Suffusion, the same as *Cataract*; which see.

Sulphur, is Brimstone. As it is reckoned a *Principle* by Chymists; see that Term.

Summitates, Tops, are the Tops of Herbs.

Superbus, the same Muscle as *Attollens*, which see; thus called, because as it lifts up the Eye-brows, it gives an Heir of Pride.

Supercilium, the Eye-brow; see *Eye*.

Superficies, the same as *Surface*; which see.

Superfætation, from *super*, above or over, and *Fætus*, an Embryo, is when one Conception follows another by a future Coition, so that both are in the Womb together, but come not to their full time for Delivery together.

Suprascapularis superior, the same as *Supraspinatus*; which see.

Suprascapularis inferior, called also *Infraspinatus*, is a Muscle that helps to draw the Arm backwards. It covers all the Space that is between the Spine and the *Teres minor*, and is inserted into the Neck of the *Humerus*.

Supervenientia signa, are such as arise at the declension of a Distemper.

Supinatores, are two Muscles, the *longus* and *brevis*: The first riseth

by a fleshy beginning, three or four Fingers Breadth, above the external Extuberance of the *Humerus*. It lies all along the *Radius*, to whose inferior and external Part it is inserted by a pretty broad Tendon. The last comes from the external and upper-part of the *Ulna*, and passing round the *Radius*, 'tis inserted into its upper and fore-part, below the Tendon of the *Biceps*. These turn the Palm of the Hand upwards.

Suppedanea, the same as

Supplantalia, from *sub*, under, and *Planta*, the Sole of the Foot; are any things applied for medicinal Purposes to that Part.

Suppositorium, from *sub*, under, and *pono*, to put, is a Form of Medicine to be thrust up the Fundament, when Clysters are not so convenient.

Suppuration, is the Ripening or Change of the Matter of a Tumour into *Pus*, which may be effected either by natural Means, or by the *Vis Vitæ*, or by the use of artificial Compositions, by way of Plaisters, Cataplasms, or the like. See *Abscess* or *Imposthume*.

Supraspinatus, is a Muscle that arises fleshy from all the Basis of the *Scapula* that is above the Spine. It fills all the Space between the upper side of the *Scapula* and its Spine, to which it is also attached. It passes above the *Acromium*, over the Articulation of the *Humerus*, which it embraces by its Tendon. It helps to lift the Arm upwards.

Suppression, is used for the Stoppage of the Menfes, Urine, or any other Discharge.

Sura, signifies the Calf, or fleshy Part of the Leg; but is often applied to the Shin-Bone, so as to mean the same as *Fibula*; which see.

Surface, is the bare outside of any Body, without any Dimension of Thickness.

Suspended or *Appended*, is said of external Remedies, which are wore about the Neck, Wrists, or the like.

Suture, is a particular articulation. The Bones of the *Cranium* are joined to one another by four Sutures. The first is called the *Coronalis*. It reaches transversely from one Temple to the other. It joins the *Os Frontis* with the *Offa Parietalia*. The second is called *Lambdoidalis*, because it resembles the Greek Letter (Δ) *Lambda*. It joins the *Os Occipitis* to the *Offa Parietalia* and *Petrofa*. The third is called *Sagittalis*. It begins at the top of the *Lambdoidalis*, and runs strait to the middle of the *Coronalis*. It joins the two *Offa Parietalia* together. The Fourth is called *Sutura Squamosa*, because the Parts of these Bones which are joined by this Suture, are, as it were, cut slope-wise, and lapped over one another.

This suture joins the semicircular Circumference of the *Offa Temporum* to the *Os Sphenoides Occipitis*, and to the *Offa Parietalia*. The first three Sutures were called *Suturae Veræ*; and the last *Sutura Falsa*, because it was supposed to have no Indentations, which is false.

The Bones of the *Cranium* are not only joined to one another, but they are also joined to the Bones of the upper Jaw by three other Sutures. The first is the *Transversalis*; it runs across the Face, it passes from the little Angle of the Eye down to the bottom of the Orbit, and up again by the great Angle of the Eye over the Root of the Nose, and so to the little Angle of the other Eye. It joins the *Os Frontis* to the Bones of the upper Jaw. The second is the *Ethmoi-*

dalis; it surrounds the Bone of that Name, and joins it to the Bones which are about it. The third is the *Sutura Sphenoidalis*; it surrounds the *Os Sphenoides*, joins it to the *Os Occipitis*, the *Offa Petrofa*, and to the *Os Frontis*.

Swallowing. See *Deglutition*.

Symbol, and *Symbolism*, is said either of the Fitness of Parts with one another, or of the Consent between them by the Intermediation of Nerves, and the like.

Symmetry, is an exact and beautiful Proportion of Parts to one another.

Sympathy, from *συμπάχω*, *compator*, to suffer with; is the Consent of one Part with another, or a fellow-feeling of the same Passion.

Symptom, from *συμπίπτω*, *accido*, to happen; is such a Conjunction of Appearances, or such an Appearance of any one thing, as indicates what will be the Issue of a Disease, and the Means of Cure. Hence,

Symptomatical, is often used to denote the Difference between the primary and secondary Causes in Diseases; as a Fever from Pain is said to be symptomatical, because it arises from Pain only: and therefore the ordinary means in Fevers are not in such cases to be had recourse to, but to what will remove the Pain; for when that ceases, the Fever will cease without any direct Means taken for that.

Synaestomasis, is used much in the same sense as *Anaestomasis*; which see.

Synarthrosis, and

Synchondrosis. See *Articulation*.

Syncope, from *συνκόπτω*, *coincido*, to fall down; is a sudden Fainting, or swooning away. It comes from various Causes, but mostly hysterical,

cal, and is therefore to be treated as such, unless when manifestly from somewhat else, and then it is to be managed accordingly.

Syndrome, from συνδρόμη, *Concursus*, a Combination of Diseases.

Synocha, and

Synochus, from συνοχέω, *sustineo*, to support or hold on, or συνεχέω, *contineo*, to continue; both signifying much the same: yet Writers have made the former an intermitting, and the latter a continued Fever.

Synteretica, is that Part of Medicine which secures the present Enjoyment of Health.

Syntexis, the same with Attenuation; which see.

Synthesis, from συντίθημι, *compono*, to compound, is sometimes used in opposition to *Analysis*, and signifies the Combination of any thing to-

gether of different Parts; the same as Contexture.

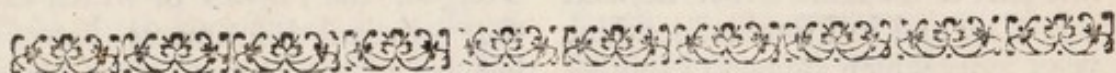
Syphilis, a Term used for the *Lues Venerea*. Some will have it from συν, *cum*, with, and φιλία, *Amor* or *Amicitia*, Love or Friendship; because it proceeds from the infectious Intercourses of Lovers in Coition. Others will have it from the name of a Shepherd so called, who was remarkably afflicted with it. However some Authors of note use the Term, and *Fracastorius*, a famous Italian Physician, gives it for the Title of a Poem he wrote upon that Distemper.

Syphon, and

Syringe, are Instruments well known, as is their Use.

Systema, the same as *Synthesis*, from συνίστημι, *constituo*, to put together; this is much used for a methodical treating upon any Subject.

Systole. See *Artery*.



T.

T*abella*, a Morsel, is used for the same Form of Medicine as Lozenge.

Tabes, a Consumption; which see.

Tabes Dorsalis, the Back Consumption, is a *Gonorrhœa Simplex*, or any feminal Weakness; because the Complaint is most sensible in the Loins.

Tabula; whence,

Tabulatum, the same as *Tabella*.

Tabum, is used by some Authors to express a kind of Matter, arising from a decay of natural Heat, or due Circulation; very different from what is commonly understood by *Pus*, which is a salutary Maturation, and wanting only Vent; whereas the other is also most com-

monly attended with a Gangrene.

Tania, a broad Worm, like a piece of Tape; for which reason it is called the Tape-Worm.

Talisman, is a Representation of somewhat, that by a magical Power does strange Feats, by way of Incantment; and the use of such preposterous Conceits have been vindicated by some physical Writers, especially in Plagues, and such Calamities, as have been thought the Tokens of divine Wrath.

Talpæ and *Nates*, are Tumours generally confined to the Head, and appearing as the Consequence of the Venereal Disease. The *Talpæ* elevate the Skin from the *Pericranium*, and generally denote a

Foulness of the Bone beneath : But the *Nates* are usually seated in the Neck.

Talus, is the same as *Astragalus*. In its upper part it has a convex Head, which is articulated with the two *Fociles* of the Leg by *Ginglymus*, it being divided by a little *Sinus* which receives the small Protuberance in the middle of the *Sinus* of the *Tibia*. And without this Articulation, we must always, in going, have trod upon the Heel with our fore Foot, and upon our Toes, with our hind Foot. The fore-part of the *Astragalus*, which is also convex, is received into the *Sinus* of the *Os Naviculare*. Below, towards the hinder-part of its under side, it has a pretty large *Sinus*, which receives the upper and hind part of the *Os Calcis*. But towards the fore-part of the same side it has a Protuberance, which is received into the upper and fore part of the same Bone. Betwixt this *Sinus* and its Protuberance there is a Cavity which answers to another in the *Os Calcis*, in which is contained an oily and mucous sort of Substance for moistening the Ligaments, and facilitating the obscure Motion of these Bones when we go.

Tangent, is a right Line drawn without a Circle, perpendicular to the *Radius*, and touching the Circle but in one Point.

Tapping. See *Paracentesis*.

Tarantism, is a Distemper arising from the Bite of a *Tarantula* : And

Tarantani, are those who are so bit. Of this very odd Effect, with its Cure, *Baglivi*, an Italian Physician, hath wrote a very rational Account, whereby it appears that the odd Effects of this Bite, and its Method of Cure by Musick, are by no means fabulous, as some have supposed,

Tarsus, is the Space between the Bones of the Leg, and the *Metatarsus*, consisting of seven Bones, viz. the *Astragalus* or *Talus*, *Calcaneum*, *Naviculare*, three *Ossa Cuneiformia*, and the *Cubiforme* ; which see under those Names.

Tartar. This is what is found sticking to Wine-Casks, like a hard Stone, either white or red, as the Colour of the Wine from whence it comes. The white is preferable, as containing less Dross or earthy Parts : The best comes from *Germany*, and is the Tartar of the *Rhenish* Wine. Some of the old Chymists have pretended to do strange Things with Preparations from this Material : and have taken abundance of Pains in its Volatilization.

Taste, expresses that Sensation which all things taken into the Mouth give particularly to the Tongue, the *Papillæ* of which are the principal Instruments hereof ; but for all the Diversities of those Sensations, we are very short in Words to express them.

Technical, from *τέχνη*, *Ars*, Art, is used for such Terms as are peculiar to the Rules and Documents of particular Arts.

Teeth. See *Dentes*.

Tegument, is the Covering of any thing ; so the Skin is a Tegument of the Body.

Telephium, *τελέφιον*, was a Name by some of the Antients given to an incurable Ulcer, from *Telephus*, who received a Wound from *Achilles*, which terminated in such a one.

Temperantia, and

Temperata, signify often the same as Sweetners or Correctors : And such things as bring the Body to a due

Temperament, and

Tempe-

Temperies, is that diversity in the Blood of different Persons, whereby it is more apt to fall into some certain Combinations in one Body than another, whether into Choler, Phlegm, &c. from whence Persons are said to be of a bilious or phlegmatick Temperament, or the like.

Temporalis, is a Muscle that ariseth by a semicircular fleshy Beginning, from a part of the *Os Frontis*, from the lower part of the *Parietale*, and upper part of the *Temporale*; from whence going under the *Zygoma*, and gathering together as to a Centre, it is inserted by a short and strong Tendon into the *Processus Coronæ* of the lower Jaw. This Muscle is also called *Crotaphites*.

Temporum Offa, the Bones of the Temples. See *Cranium*.

Tenacity, expresses that Property in viscid Substances by which they adhere together. And,

Tenacula, both from *Teneo*, to hold, hath been given to a surgical Instrument, not much differing from the *Forceps*.

Tenar, the same as *Abductor Pollicis*, which see; as also the *Abductor Pollicis Pedis*, is sometimes thus called by Anatomists.

Tendon, from *tendo*, to stretch, is the Extremity of a Muscle, where its Fibres run into a strong springy Chord; and this is called the Head or Tail, as it happens to be at the Origin or Insertion of the Muscle.

Tenesmus, is a continual Inclination of going to stool, from the Irritation of some sharp Humours.

Tension, expresses any thing stretched out; as the Fibres or Membranes are in certain Circumstances.

Tentigo. See *Priapismus*.

Tepedarium, was a Room, belonging to the antient Bathing-Places, where Persons gradually

prepared themselves for Entrance, or going out.

Terebellum, or

Terebra, *τρύπανον*, is often used for the *Trepan*, but sometimes also for any Instrument to perforate the Bones with, of other parts as well as the Head.

Teredum, signifies the same with *Caries*, which see.

Teres, signifying any thing long and round, is a Name given by some to a Worm thus shaped, which is apt to breed in human Bodies, chiefly in Children,

Teres major, the same as *Pronator*; which see.

Teres minor, is a Muscle that cometh from the inferior Edge of the *Scapula*, upon which it runs, between the former, and the *Teres major*, and is inserted into the Neck of the *Humerus*; it helps to draw the Arm backwards.

Terra damnata, condemned Earth, is the remainder after some Distillations, where all that will rise is drawn off; the same as *Caput Mortuum*.

Terra Mortua, the same as *Terra damnata*.

Terminthus, is a little Tumour like the *Epinyctis*; which see.

Ternary, consisting of the number Three, which some chymical and mystical Writers have made strange work with: But the most remarkable distinction of this kind, and the only one worth notice, is that of *Hippocrates*, who divides the Parts of an human Body into *Continentes*, *Contentas*, and *Impetum facientes*; tho' the latter is resolvable into the Mechanism of the two former, rather than any thing distinct in its self.

Tertian, is an Ague intermitting but one Day, so that there are two Fits in three Days.

Tertium

Tertium Quid, invented by the Chymists to exprefs that Result of the Mixture of some two things, which forms somewhat very different from both.

Testaceous, by Naturalists is a Term given only to fuch Fish whose ftrong and thick Shells are entire and of a piece; becaufe thofe which are joined, as the Lobfters, &c. are called cruftaceous: but in Medicine all Preparations of Shells and Subftances of the like kind is thus call'd.

Testes Cerebri. See *Brain*.

Testicles. See *Generation Parts of, proper to Men and Women*.

Tetanus, from *τείνω*, *tendo*, to ftretch, is a convulfive Motion that makes any part rigid and inflexible.

Tetrapharmacum, from *τέσσαρες* *quatuor*, four, and *φάρμακον*, *Medicamentum*, a Medicine; is any Remedy confifting of four Ingredients.

Tetrapetalous, from *τέσσαρες* *quatuor*, and *πέταλον*, *Folium*, a Leaf, are fuch Flowers as confift of four Leaves round the Style. Plants having a tetrapetalous Flower, constitute a diftinct kind, and by Mr. Ray are divided into, 1. Such as have an uniform tetrapetalous Flower, and their Seed-Veffels a little oblongifh, which therefore he calls *Siliquofæ*. As the *Keiri*, or *Leucoium Luteum*, and the other common *Leucoium*; the *Dentaria*, the *Leucoium Siliquofum*, *Anyffon*, *Viola Lunar*, *Paronychia*, *Hesperis*, *Alliaria*, *Rapa*, *Napus*, *Sinapi*, *Rapiftrum*, *Eruca spuria*, *Eryfimum*, *Cardamine*, *Turritis*, *Pilofella Siliquofa*, and the *Raphanus Ruficanus* and *Aquaticus*. 2. Such as have their Seed-Cafe or Veffel fhorter, which therefore for diftinction he calls *Capsulatæ* and *Siliculofæ*; as the *Myagrum*, *Draba*, *Leucoium*, *Siliqua fubrotunda*, *Cochlearia*, *Nafturtium*, *Lepidium vulgare*, *Thlafpi*, *Brasica Marina*, *Glaftum*,

Eruca marina, &c. 3. Such as have a kind of or feeming tetrapetalous Flower, i. e. a monopetalous one divided deeply into four Partitions, and thefe he calls *Anomalous*, as the *Papaver*, *Agremone*, *Veronica*, *Tithymallus*, *Plantago*, *Coronopus*, *Pfyllium*, *Lyfimachia filiquofa*, *Alfine spuria*, &c.

Texture, is that peculiar Difpofition of the conftituent Particles of any Body, as makes it to have fuch a Form, or be of fuch a Nature, or be endued with fuch Qualities.

Thalamus, fignifies a Bed, whence fome Parts are diftinguifh'd by it, having Refemblance thereunto in office; as,

Thalami Nervorum Opticorum. See *Brain*.

Theca, fignifies any Cafe or Covering; whence Botanifts apply it to fome Parts of particular Flowers: and *Hildanus* uſes it for a Cafe for chirurgical Inſtruments.

Thenar, the ſame as *Tenar*.

Theophrasti; the Difciples of *Theophrastus Paracelfus* were by ſome thus called.

Theorem, is a Propofition upon any Subject that is demonſtrable, differing from a Problem in this, that it barely afferts a thing to be prov'd, whereas a Problem ſuppoſes ſome *Data*, then requires them to be put together; and laſtly, afferts the thing required to be done, which is to be proved by the Demonſtration.

Theoria, from *θεωρέω*, *contemplor*, to contemplate, is the ſpeculative part of any Science, that directs to the Rules of Practice.

Therapeutick, from *θεραπεύω*, *fano*, to make well; is that part of Phyſick that reſpects the Preſcription of Medicine, or the Method of Cure.

Theriaca, probably from *θηρ*, *Fera*, a Beaſt, and *αἰέομαι*, *fano*, to cure; becauſe it is apply'd to ſuch things

things as are chiefly calculated for curing the Bites of poisonous Animals; and for the same reason good in all Malignities. It was first given to the celebrated Composition of *Andromachus*, which is one of our officinal Capitals; but many Writers since have also ascribed it to many other Medicines of like Form and Virtue.

Thermæ, from *θερμαίνω*, *calefacio*, to make warm, are hot Baths. See *Baths* and *Bathing*.

Thermometer, from the former; and *μέτρον*, *Mensura*, a Measure; is an Instrument to measure or estimate the Heat or Cold of any particular Place, or of the same Place in different Seasons, and at different Times.

Thesis, is any short Sentence or Subject taken to discourse or dispute upon in the Schools, prior to the conferring Degrees of Physick, &c.

Thessalici; the Disciples of *Thessalus* were by some thus called, who was the first of the Sect of the *Methodists*.

Thigh. See *Femur*.

Thirst. See *Hunger*.

Thoracick Medicines, are such as are good for Distempers of the Breast.

Thoracick Duct. See *Lacteal Veins*. Both from

Thorax, the Breast. All that lies betwixt the Basis of the Neck and the *Diaphragm* or Midriff; that is, down to the last Ribs, is called the *Thorax* or Chest. The fore-part of the *Thorax* is call'd the Breast; in it are the *Claviculæ* or Channel-Bones, and the *Sternum* or Breast-Bone, which is in the middle; it begins at the *Claviculæ*, and terminates in the *Cartilago Xiphoides* or Sword-like Cartilage. Under the *Sternum* lies the *Mediastinum*, and the Heart in its *Pericardium*. The *Mammæ* or Breasts are two round Tumours which appear upon the

fore-part of the Chest, under which are situated part of the Ribs, the *Pleura*, and the Lungs: There stands upon their Center a little Protuberance, called *Papilla* or Nipple, which is encompassed with a reddish Circle, call'd *Areola*. The Hollow in the middle of the Breast, below the Breasts, is called *Scrobiculus Cordis*. The hinder part of the *Thorax* is call'd the Back, composed of twelve *Vertebræ* or Joints, and two *Scapulæ* or Shoulder-blades, which are the two upper Parts of the Back on the sides of the *Vertebræ*. The lateral Parts of the *Thorax* are called *Peristerna*.

Thimion, is a small Wart rising upon the Skin of the Body; being somewhat slender, but flat; is hard and rough at the Top. The worst kind of them, are those which are apt to bleed.

Thymus, is a conglobate Gland, situated in the upper part of the *Thorax* under the *Claviculæ*, where the *Cava* and *Aorta* divide into the Subclavian Branches. This Gland is big in Infants, but as they grow in Age, it grows less. Its Arteries and Veins are Branches of the *Carotides* and *Jugulars*. It has Nerves from the *Par Vagus*, and its Lymphatick Vessels discharge themselves in the *Ductus Thoracicus*. The learned Dr. *Tyson* supposes the Use of this Gland to be for a *Diverticulum* to the Chyle in the Thoracick Duct of a *Fætus*, whose Stomach being always full of the Liquor in which it swims, must keep the Thoracick Duct distended with Chyle; because the Blood which the *Fætus* receives from the Mother fills the Veins, and hinders the free entrance of the Chyle into the Subclavian Vein. The Surgeons have given the Name of *Thymi* to some little Excrescencies, resembling the Tops of the Herb Thyme.

Thy-

Thyreocarytænoides, from *Θύρεος*, *Scutum*, a Helmet, *ἀνύω*, *haurio*, to draw, and *ἴδιον*, *Forma*, Shape; is a Muscle of the *Larynx*, thus called from its Shape and Office, as it assists in opening the Wind-Pipe, and drawing in Air. See *Larynx*.

Thyroidææ, from part of the former Etymology, are Glands of the *Larynx*; which see: And

Thyroides, is from the same Derivation. See also *Larynx*.

Tibia, is the inner and bigger Bone of the Leg, called also *Focile Majus*: 'tis hard and firm, with a Cavity in its middle; 'tis almost triangular: its fore and sharp Edge is call'd the Shin. In its upper Extremity it has two large *Sinus*'s, tipt with a soft and subtile Cartilage, call'd *Cartilago Lunata* from its Figure: It runs in between the Extremities of the two Bones, and becomes very thin at its edge. Like those in the Articulation of the lower Jaw, it facilitates a small side Motion in the Knee. The *Sinus*'s receive the two Protuberances of the Thigh-Bone; and the Production which is between the *Sinus*'s of the *Tibia* is received in the *Sinus*, which divides these two Protuberances of the *Femur*. By Bending our Knee, we bring our Leg in walking in a strait Line forwards, which without this Articulation we could not have done: but, like those who have the Misfortune to have a wooden Leg, we must have brought our Foot about in a Semi-circle in going even upon a Plain, but more evidently upon an Ascent. On the side of this upper end it has a small knob, which is received into a small *Sinus* of the *Fibula*; and on its fore-part, a little below the *Patella*, it has another, into which the Tendons of the Extensors of the Leg are inserted. Its lower Extremity, which is much

smaller than its upper, has a remarkable Process which forms the inner Ankle, and a pretty large *Sinus* divided in the middle by a small Protuberance; the *Sinus* receives the convex Head of the *Astragalus*, and the Protuberance is received into the *Sinus* in the convex Head of the same Bone. It has another shallow *Sinus* in the side of its lower end, which receives the *Fibula*.

Tibiæus, and

Tibialis Musculus; of this Name there are two Muscles, the *Anticus*, which arises fleshy from the upper and fore-part of the *Tibia*, and adhering to the external side of the *Tibia*, as it descends it passes under the *Ligamentum Annulare*, and is inserted into the *Os Cuneiforme*, which answers to the great Toe; and the *Posticus*, which arises from the superior and back-part of the *Tibia* and *Fibula*, and the Membrane that ties them together; and descending by the hinder-part of the *Tibia*, it passes thro' the Fissure of the inner Ankle, and is inserted into the under-side of the *Os Naviculare*; this moveth the Foot inwards, and the former bendeth it forwards.

Tide. Dr. Halley hath made the following abstract of the Theory of Tides from Sir Isaac Newton. The Principle upon which this Author proceeds to explain most of the great and surprizing appearances of Nature, is no other than that of Gravity; whereby in the Earth all Bodies have a Tendency towards the Centre, as is most evident; and from undoubted Arguments 'tis proved, That there is such a Gravitation towards the Centre of the Sun, Moon, and all the Planets.

From this Principle, as a necessary Consequence, follows the spherical Figure of the Earth and Sea, and of all the other celestial Bodies; and

and tho' the Tenacity and Firmness of the solid Parts support the Inequalities of the Land above the Level, yet the Fluids pressing equally, and easily yielding to each other, do soon restore the *Æquilibrium*, if disturbed, and maintain the exact Figure of the Globe.

Now this Force of the Descent of Bodies towards the Centre, is not in all Places alike, but is still less and less as the Distance from the Centre increases: and in the said Book it is demonstrated, that this Force decreases, as the Square of the Distance increases; that is, the Weight of Bodies, and the Force of their Fall is less, in Parts more remov'd from the Centre, in the Proportion of the Squares of the Distance.

As for Example: A Tun Weight on the Surface of the Earth, if it were rais'd to the height of 4000 Miles, which is, suppose, the Semidiameter of the Earth, would weigh but a quarter of a Ton, or 500 l. Weight.

If to 12000 Miles, or 3 Semidiameters from the Surface, that is 4 from the Centre, it would weigh but one 16th part of the Weight on the Surface, or a hundred and a quarter: So that it would be as easy for the Strength of a Man at that height, to carry a Tun Weight, as here on the Surface to carry a hundred and a quarter.

And in the same Proportion do the Velocities of the Fall of Bodies decrease: for whereas on the Surface of the Earth, all things fall 16 Foot in a Second, at one Semidiameter above, this Fall is but 4 Foot: and at three Semidiameters, or four from the Centre, it is but $\frac{1}{16}$ of the Fall at the Surface, or but one Foot in a Second; and at greater Distances both Weight and Fall become very little, but yet at all given Distances, is still something, tho' the Effect become insensible.

At the Distance of the Moon (which suppose to be 60 Semidiameters of the Earth) 3600 Pounds weigh but one Pound, and the Fall of Bodies is but $\frac{1}{3600}$ of a Foot in a Second, or 16 Foot in a Minute, that is, that a Body so far off descends in a Minute no more than the same at the Surface of the Earth would do in a Second of Time.

And as we said before, the same Force decreasing after the same manner, is evidently found in the Sun, Moon, and all the Planets; but more especially in the Sun, whose Force is prodigious, becoming sensible even at the immense distance of *Saturn*. This gives room to suspect, that the Force of Gravity is in the celestial Globes proportional to the Quantity of Matter in each of them: And the Sun being at least 10000 times (for Instance, tho' he is far bigger) as big as the Earth, its Gravitation, or attracting Force, is found to be at least 10000 times as much as that of the Earth, acting on Bodies at the same Distances.

Whence also, all the surprizing *Phænomena* of the Flux and Reflux of the Sea, he shews in like manner to proceed from the same Principle.

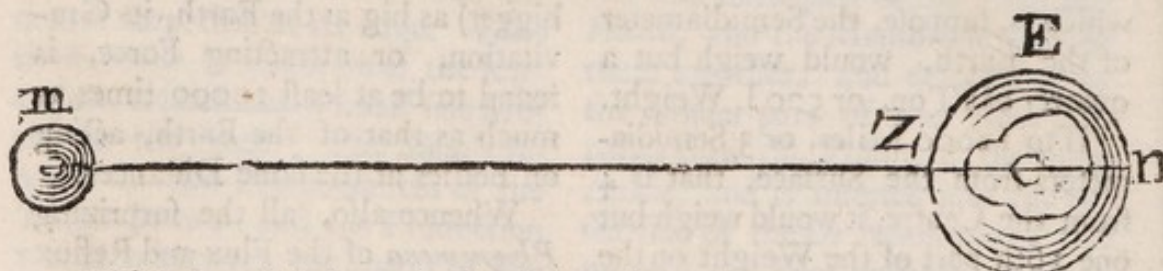
If the Earth were alone, that is to say, not affected by the Actions of the Sun and Moon, it is not to be doubted, but the Ocean being equally pressed by the Force of Gravity towards the Centre, would continue in a perfect Stagnation always at the same height, without ever ebbing or flowing; but it being by him demonstrated, that the Sun and Moon have a like Principle of Gravitation towards their Centres, and that the Earth is within the Activity of their Attractions, it will plainly follow, that the Equality of the Pressure of Gravity towards the Centre will thereby be disturbed. And tho' the

the smallness of these Forces, in respect to the Gravitation towards the Earth's Centre, renders them altogether imperceptible by any Experiments we can devise, yet the Ocean being fluid, and yielding to the least Force, by its rising, shews where it is least prest, and where it is more prest by its sinking.

Now if we suppose the Force of the Moon's Attraction to decrease as the Square of the Distance from its Centre increases (as in the Earth, and other Celestial Bodies) we shall find, that where the Moon is perpendicularly either above or below the Horizon, either in Zenith or Nadir, there the Force of Gravity is most of all diminished, and consequently that there the Ocean must necessarily swell, by the coming in of the Water from those parts where the Pressure is greatest, *viz.* in those

Places where the Moon is near the Horizon. But that this may be the better understood, 'twas thought needful to add the following Scheme, where *M* is the Moon, *E* the Earth, *C* its Centre, *Z* the Place where the Moon is in the Zenith, *N* where the Nadir.

Now by this Hypothesis it is evident, that the Water in *Z* being nearer, is more drawn by the Moon, than the Centre of the Earth *C*, and that again more than the Water in *N*; therefore the Water in *Z* has a Tendency towards the Moon, contrary to that of Gravity, being equal to the Excess of the Gravitation of *Z*, above that in *C*. And in the other Case, the Water in *N* tending less towards the Moon, than the Centre *C*, will be less press'd, by as much as is the difference of the Gravitations towards the Moon in *C* and in *N*.



This being rightly understood, it follows plainly, that the Sea, which otherwise should be Spherical, upon the Pressure of the Moon, must form it self into a Spheroidal, or oval Figure, whose longest Diameter is where the Moon is Vertical, and shortest where she is in the Horizon; and that the Moon shifting her Position, as she turns round the Earth once a Day, this Oval of Water shifts with her, occasioning thereby the two Floods and Ebbs, observable in each 25 Hours.

And this may suffice as to the general Cause of the Tides: It remains now to shew how naturally this Motion accounts for all the Particulars that have been observed

about them; so that there can be no room left to doubt, but that this is the true Cause thereof.

The Spring-Tides upon the New and Full Moons, and the Neap-Tides on the Quarters, are occasioned by the attractive Force of the Sun, in the New and Full, conspiring with the Attraction of the Moon, and producing a Tide by their united Forces; whereas in the Quarters, the Sun raises the Water where the Moon depresses it, and on the contrary; so as the Tides are made only by the difference of their Attraction.

That the Force of the Sun is no greater in this Case, proceeds from the very small Proportion the Semidiameter

midiameter of the Earth bears to the vast Distance of the Sun.

It is also observed, that, *cæteris paribus*, the *Equinoctial* Spring-Tides in *March* and *September*, or near them, are the highest, and the Neap-Tides the lowest: which proceeds from the greater Agitation of the Waters, when the fluid Spheroid revolves about a great Circle of the Earth, than when it turns about in a lesser Circle; it being plain, that if the Moon were constituted in the Pole, and there stood, the Spheroid would have a fix'd Position, and that it would be always High-water under the Poles, and Low-water every where under the *Equinoctial*: and therefore the nearer the Moon approaches the Poles, the less is the Agitation of the Ocean; which is of all the greatest when the Moon is in the *Equinoctial*, or farthest distant from the Poles.

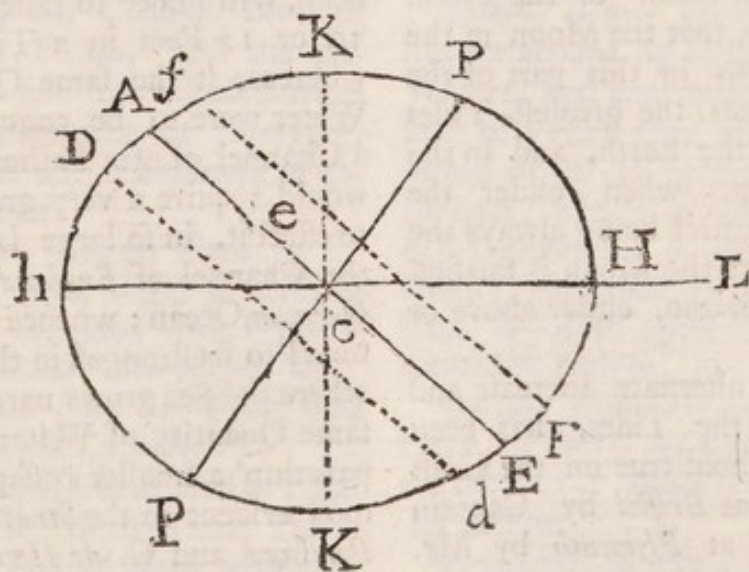
Whence the Sun and Moon, being either conjoined or opposite in the *Equinoctial*, produce the greatest Spring-Tides; and the subsequent Neap-Tides being produced by

the *Tropical Moon* in the Quarters, are always the least Tides, whereas in *June* and *December* the Spring-Tides are made by the *Tropical Sun* and *Moon*, and therefore less vigorous; and the Neap-Tides by the *Equinoctial Moon*, and therefore are the stronger.

Hence it happens, that the Difference between the Spring and Neap-Tides in these Months, is much less considerable than in *March* and *September*.

And the Reason why the highest Spring-Tides are found to be rather before the *Vernal*, and after the *Autumnal Equinox*, viz. in *February* and *October*, than precisely upon them, is, because the Sun is nearer the Earth in the Winter-Months, and so comes to have a greater Effect in producing the Tides.

Hitherto we have considered such Affections of the Tides as are universal, without relation to particular Cases; what follows from the differing Latitudes of Places, will be easily understood by the following Figure.



Let *APEP* be the Earth covered over with very deep Waters, *C* its Centre, *PP* its Poles, *AE* the *Equinoctial*, *Ff* the *Parallel of Latitude*

of a Place, *Dd* another *Parallel* at equal Distance on the other side of the *Equinoctial*, *Hh* the two Points where the Moon is Vertical; and let

let KK be the great Circle wherein the Moon appears Horizontal.

It is evident, that a Spheroid described upon Hb and KK , shall nearly represent the Figure of the Sea; and Cf , CD , CF , Cd , shall be the Heights of the Sea in the Places f , D , F , d , in all which it is High-water: And seeing that in twelve Hours time, by the diurnal Rotation of the Earth, the Point F is transferr'd to f , and d to D ; the Height of the Sea CF , will be that of the High-water, when the Moon is present, and Cf that of the other High-water, when the Moon is under the Earth; which in the Case of this Figure is less than the former CF .

And in the opposite Parallel Dd , the contrary happens: The rising of the Water being always alternately greater and less in each place, when it is produced by the Moon declining sensibly from the *Equinoctial*, that being the greatest of the two High-waters in each Diurnal Revolution of the Moon; wherein she approaches nearest either to the *Zenith* or *Nadir* of the Place. Whence it is, that the Moon in the northern Signs in this part of the World, makes the greatest Tides when above the Earth, and in the southern Signs when under the Earth; the Effect being always the greatest where the Moon is farthest from the Horizon, either above or below it.

And this alternate Increase and Decrease of the Tides, has been observed to hold true on the Coast of *England*, at *Bristol* by Captain *Sturmy*, and at *Plymouth* by Mr. *Colepress*.

But the Motions hitherto mentioned, are somewhat altered by the Libration of the Water; whereby tho' the Action of the Luminaries

should cease, the Flux and Reflux of the Sea would for some time continue: This Conservation of the impressed Motion diminishes the Difference that otherwise would be between two consequent Tides, and is the reason why the highest Spring-Tides are not precisely on the New and Full Moons, nor the Neaps on the Quarters; but generally they are the third Tides after them, and sometimes later.

All these things would regularly come to pass, if the whole Earth were covered with Sea very deep; but by reason of the Shoalness of some Places, and the Narrowness of the Straits, by which the Tides are in many places propagated, there arises a great diversity in the Effect, not to be accounted for, without an exact Knowledge of all the Circumstances of the Places; as of the Position of the Land, and the Breadth and Depth of the Channels by which the Tide flows: for a very slow and imperceptible Motion of the whole Body of the Water, where it is (for example) two Miles deep, will suffice to raise its Surface 10 or 12 Feet in a Tide's time: whereas, if the same Quantity of Water were to be conveyed upon a Channel of 40 Fathom deep, it would require a very great Stream to effect it, in so large Inlets as are the Channel of *England*, and the *German Ocean*: whence the Tide is found to set strongest in those Places where the Sea grows narrowest, the same Quantity of Water being to pass thro' a smaller Passage. This is most evident in the Straits between *Portland* and *C. de Hogue* in *Normandy*, where the Tide runs like a Sluice, and would be yet more between *Dover* and *Calais*, if the Tide coming about the Island from the North did not check it. And this

Force

Force being once impress'd upon the Water, continues to carry it about the Level of the ordinary height in the Ocean, particularly where the Water meets a direct Obstacle, as it is in *St. Maloes*; and where it enters into a long Channel, which running far into the Land, grows very strait at its Extremity, as it is in the *Severn-Sea* at *Chepstow* and *Bristol*.

The Shoalness of the Sea, and the intercurrent Continents, are the reason that in the open Ocean the Time of High-water is not at the Moon's Appulse to the Meridian, but always some Hours after it, as it is observed upon all the West Coast of *Europe* and *Africa*, from *Ireland* to the *Cape of Good Hope*: In all which, a *South-West* Moon makes High-water; and the same is reported to be on the West of *America*.

And from this Theory hath Dr. Mead very learnedly accounted for the Influences of the heavenly Bodies, and particularly of the Sun and Moon, upon the human Frame; by shewing the Consent between the animal Fluids, and the Atmosphere; and the Consequences of their condensing or rarefying, according to the Differences of external Pressure.

Tinæ Os. See *Os Tinæ*.

Tincture, from *tingo*, to dye, is any Liquor saturated with Ingredients of any kind. See *Extraction*.

Tinea, is a Sore or Tetters that discharges a salt Lymph.

Titillation, is a Sensation of Pleasure from the Touch of some Parts, but chiefly said of those concerned in Generation.

Toes: These are made up of 14 Bones; the great Toe hath two, and the rest hath three each: they are like the Bones of the Fingers,

but shorter. In the Toes are found twelve *Ossa Sefamoidea*, as in the Fingers.

Tongue. See *Lingua*.

Tone, is a Term in Musick, signifying a certain Degree of Elevation or Depression of Sound, from the greater or lesser Tensify of the Strings. And hence,

Tonic, is used for that tremulous Motion or Vibration of the Nerves and Fibres, in a human Body, which is much altered by their different Tension.

Tonsils, or *Almonds*, are two round Glands placed on the sides of the Basis of the Tongue, under the common Membrane of the *Fauces*, with which they are covered; each of them hath a large oval *Sinus*, which opens into the *Fauces*, and in it there are great number of lesser ones, which discharge themselves thro' the great *Sinus*, of a mucous and slippery Matter, into the *Fauces*, *Larynx*, and *Oesophagus*, for the moistening and lubricating these Parts. When the Muscle *Oesophagus* acteth, it compresseth the *Tonsillæ*.

Topbus, is any gritty or earthy Matter abounding in some mineral Waters, and concreting upon the sides of Vessels they are long contained in, or to hard Bodies lying in them; whence also from its likeness thereunto it is applied to the chalky Substance which is sometimes deposited upon the Joints of arthritick Persons.

Topicks, from *τόπος*, *Locus*, a Place, or Part; are such Things as are externally apply'd to any particular Part.

Torcularis, a Press or Skrew; whence some Parts of the Body are thus called from their resemblance thereunto in Shape, or for the Similitude of their Office. Hence also a Contrivance to stop Bleeding in

Amputations is by the Surgeons thus called.

Tormina, is used to express Pains of any kind, and according to the Differences of Parts, or Symptoms, is variously distinguished. But in a more particular manner we express the Gripes, by *Tormina ventris*.

Toxica, is the name of a particular sort of Poison, said to be used by the Indians to their Arrows, in order to render Wounds made with them incurable.

Trachotomy, the same as *Bronchotomy*, which see.

Trachea. See *Aspera Arteria*.

Tragea, is a Term that hath been used to express Powders grossly beat, but is now obsolete.

Tragus, is a Protuberance of the Ear opposite to the *Antitragus*. See *Ear*.

Tralucet, from *trans*, thro', and *luceo*, to shine; the same as transparent: which see.

Transfusion, from *trans*, thro', and *fundo*, to pour; is chiefly used for the letting the Blood of one Animal out, so as to be immediately received by another; but this is found not reducible to any good purpose in the Practice of Physick, notwithstanding what may be said thereof in Theory.

Transmutation, from *trans*, thro', and *muto*, to change; hath been a Term much used amongst Chymists for the changing one Metal into another: but such Pretensions are now only laughed at.

Transparent, from *trans*, thro', and *appareo*, to appear, is any thing that may be seen thro'; which probably is because the Pores of such Bodies are all right, and nearly perpendicular to the Plane of their Surface, and so consequently do let the Rays of Light pass freely thro' them without being refracted.

Transpiration, from *trans*, thro', and *spiro*, to breathe, the same as Perspiration; which see.

Transversalis Abdominis, is a Muscle that lies under the *Obliqui*, and arises from the *Cartilago Xiphoides*, from the Extremities of the false Ribs, from the transverse *Apopophyses* of the *Vertebrae* of the Loins; it is fixed in the inner side of the Spine of the *Ilium*, and is inserted in the *Os Pubis*, and *Linea alba*. This with the *Obliqui* (which see) unites its Tendons, as it approaches the *Linea alba*, and is the only Muscle that is cut in the Operation of the *Bubonocoele*; it has a fine and thin Membrane that closes exactly its Ring or Hole, thro' which the Vessels pass.

Transversalis Colli, is a part of the

Transversalis Dorsi: Some make three of this Muscle, viz. the *Sacer*, the *Semispinatus*, and *Transversalis Colli*. It ariseth from the *Os Sacrum*, and from all the transverse Processes of the *Vertebrae* of the Loins, Back, and Neck, except the two first, and is inserted by so many distinct Tendons to all their superior Spines. It moves the whole Spine obliquely backwards.

Transversalis Humeri, the same as *Ter's minor*; which see.

Transversalis Pedes, comes from the Bone of the *Metatarsus*, that sustains the Toe next the little Toe, and passing across the other Bones, it is inserted into the *Os Sesamoides* of the great Toe: Its use is to bring all the Toes close to one another.

Transversalis Penis, arises from the *Ischium*, just by the *Erectores*, and runs obliquely to the upper part of the Bulb of the *Urethra*. It helps to press the Veins upon the back of the *Penis* against the *Os Pubis*.

Pubis, which is the Cause of Erection.

Tarpezium, is a Species of a Quadrangle, consisting of four unequal sides. Whence,

Tarpezius, is a Name given to the Muscle *Cucullaris*, (which see) for its likeness in Shape thereunto.

Traumatick, from *τραυματίζω*, *vulnèro*, to wound; are such Medicines as are given in case of Wounds, inward Sores, or Bruises; the same as *Vulnerary*.

Trees, and Shrubs of our native Growth in *England*, are thus distinguished by Mr. *John Ray*. 1. Such as have their Flower disjoined and remote from the Fruit; and these are, 1. *Nuciferous ones*, or such as bear Nuts, as the Walnut-Tree, the Hazel-Nut Tree, the Beach, the Chesnut, and the common Oak. 2. *Coniferous ones*, or such as bear a squamose or scaly Fruit, of a kind of conical Figure, and of a woody or hard Substance, in which are many Seeds, which when they are ripe, the Cone opens or gapes, in all its several Cells and Partitions, and so they drop out. Of this kind are the *Scotch Firs*, Male and Female; the Pine, which in our Gardens is called the *Scotch Fir*; the common Alder-Tree, and the Birch-Tree. 3. *Bacciferous ones*, or such as bear Berries; as the Juniper and Yew Tree. 4. *Lanigerous ones*, or such as bear a woolly downy Substance; as the black, white, and trembling Poplar, Willows and Osiers of all kinds. 5. Such as bear their Seeds (having an imperfect Flower) in leafy Membranes or Cases; as the Horn-beam or Hard-beam, called in some places the Hornbeech. II. Such as have their Fruits and Flowers contiguous; and these are either with the Flower placed on the Top of the Fruit, or

else have it adhering to the Base of Bottom of the Fruit. 1. Trees and Shrubs with the Flower placed on the Top or upper-part of the Fruit: Of these, some are *Pomiferous*, as Apples and Pears; and some *Bacciferous*, as the Sorb or Service-Tree; the White or Haw-Thorn, the Wild Rose, Sweet-brier, Currants, the great Bilberry-Bush, Honey-Suckle, Ivy, &c. 2. Trees whose Flower adheres to the Base or Bottom of the Fruit, are either such as have their Fruit moist and soft when ripe, as, (1.) *Pruniferous ones*, whose Fruit is pretty large and soft; with a Stone in the middle; as the Black-Thorn or Slow-Tree, the black and white Bullace-Tree, the Black Cherry, &c. (2.) *Bacciferous ones*, as the Strawberry-Tree in the West of Ireland, Mistletoe, Water-Elder, the Dwarf, a large Laurel, the Viburnum or way-faring Tree, the Dogberry-Tree, the Sea Black-Thorn, the Berry-bearing Elder, the Privet, Barberry, common Elder, the Holly, the Buck-Thorn, the Berry-bearing Heath, the Bramble, and the Spindle-Tree or Prickwood. Such as have their Fruit dry when 'tis ripe; as the Bladder Nut-Tree, the Box-Tree, the common Elm and Ash, the Maple, the *Gaule* or Sweet-Willow, common Heath, Broom, Dyers Weed, Furze or Gorse, the Lime-Tree, &c.

Tremor, is an involuntary trembling of the Nerves, like a Palsy.

Trepanum, a Surgeon's Instrument to cut away any part of a Bone, particularly in Fractures of the Skull, and on some other Occasions.

Triangularis Labii, called also *Depressor Labii superioris*, is a Muscle that arises from the lower Edge of the lower Jaw, between the *Maseter* and the *Quadratus*, and as-

pendeth by the Angle of the Mouth to the upper Jaw.

Triangularis Pectoris, is a Muscle that arises from the lower Part of the inside of the *Sternum*, and is inserted into the Cartilages where they join the Bones of the fourth, fifth, sixth, and sometimes seventh true Ribs: it helps to contract the Cavity of the Breast in Expiration.

Triceps, Three-headed, is a Muscle that hath three Originations, and also three Insertions, and may be conveniently divided into three Muscles: The first arises from the *Os Pubis*, and is inserted in the *Linea Aspera* of the Thigh-Bone; the second arises from the lower part of the *Os Pubis*, and is inserted about the middle of the *Linea Aspera*; the third arises from the *Os Pubis*, where it joins the *Ischium*, and is inserted into the internal and lower *Apophyses* of the Thigh-Bone. They pull the Thigh-bone downwards, and turn it a little outwards.

Tricuspides Valvulae. See Heart.

Trine Dimension, or three-fold Dimension, is Length, Breadth, and Thickness.

Trituration, from *tero*, to wear, or grind, is reducing any Substances to Powder, upon a Stone with a Muller, as Colours are ground: it is also called *Levigation*. See *Dispersatory*.

Trochanter, called also *Rotator*. There is the *major* and *minor*, or greater and lesser; they are two *Apophyses* in the upper part of the Thigh-Bone, in which the Tendons of many Muscles are terminated.

Trochisci, Troches, is a Form of Medicine to hold in the Mouth, to dissolve as Lozenges, or for the Preservation of Species that would otherwise decay.

Trochlea, a Pulley, which is accounted one of the mechanical Powers. Hence,

Trochleares, is a Name given to the oblique Muscles of the Eye, because they pull the Eye obliquely upwards or downwards, as if turned like a Pulley. And,

Trochloides, is a particular kind of Articulation, most remarkable in the first and second *Vertebrae* of the Neck.

Tropici Morbi, are such Diseases as are most frequent under or near the Tropicks.

Truncus, is the main Stem or Body of any thing, in distinction to Limbs or Branches, which spring therefrom.

Tubae Fallopiæ. See *Generation Parts of, proper to Women*.

Tubercula, Tubercles, are little Tumours that suppurate and discharge Pus, often found in the Lungs.

Tuberous, is a Term applied to such Roots as are knobby, from *Tuber*, signifying strictly a Truffle, or a subterraneous Mushroom, which such Roots resemble.

Tumor, a Swelling, expresses every kind of preternatural rising on the Body, and is diversify'd and distinguished into subordinate Species by the particular Circumstances or Accidents attending them.

Tunica Albuginea, the white Membrane. See *Generation Parts of, proper to Men*.

Tunica Cornea. See *Cornea*.

Tunica Retiformis, the Net-like Membrane. See *Amphiblestroides*.

Tunica Vaginalis. See *Generation Parts of, proper to Women*.

Turbo, signifies the Covering which some Countries wear upon their Heads of a conick Figure. Whence in natural Philosophy,

Turbinated, is apply'd to the Parts of Plants, and many other things that have resemblance to a Turbant in Shape, or are of a conical Figure.

Turgescence,

Turgescence, is any Over-fulness or Swelling.

Turiones, are the first, young, tender Shoots which Plants do annually put forth.

Turunda, and

Turundula, signify a Tent for a Wound, or any thing to be thrust into an Orifice or Capacity.

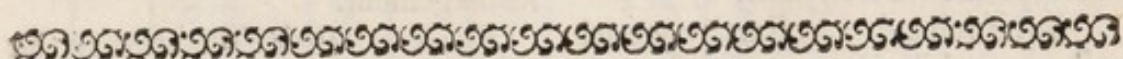
Tussis, a Cough, proceeds from various Causes, and is therefore as variously to be treated.

Tympanites, from *τυμπανίζω*, to

sound like a Drum; is that particular sort of Dropsy that swells the Belly up like a Drum, and is often cured by Tapping: from

Tympanum, a Drum, which is, for its resemblance thereunto, applied to a part of the Ear; which see.

Typus, is the constant order observed by a Fever, in its intention and remission, signifying the same with Period or Circuit, from *τύπω*, *Verbero*, to beat or afflict.



V.

V *Acuum*. See *Laws of Nature*, under the Word *Nature*.

Vagina. See *Generation Parts of, proper to Women*.

Vagina Hepatica, the same as *Capsula Communis*; which see. And,

Vaginalis Tunica, the same as *Elythroides*, which see under *Generation parts of, proper to Women*. The forementioned Parts are all distinguished by this Name from their Shape; *Vagina* signifying a Sheath, Scabbard, or Case.

Valetudinarian, is used for a sickly Person, or one always anxious about his Health; because,

Valetudo, signifies strictly Health; but is sometimes also used for a distempered Habit.

Valves, are little thin Membranes in the Vessels, as it were, like folding Doors, to prevent a Reflux of any Fluid by the same Canal. They have different Names according to the diversity of their Shapes, as *Sigmoides*, *Semilunares*, &c.

Valvulae Conniventes. See *Intestines*.

Vapours, in a medical Sense, signifies pretty much the same as *Hysterical Affection*; which see: but

in Physicks, any watry Exhalations. On which Subject Dr. *Halley* hath shewn, That if an Atom of Water be expanded into a Shell or Bubble, whose Diameter shall be ten times as great as before, such an Atom will be specifically lighter than Air, and will rise so long as that Flatus, or warm Spirit, which first separated it from the Mass of Water, shall continue to distend it to the same degree. But then that Warmth declining, and the Air growing cooler, and withal specifically lighter, these Vapours will stop at a certain Region of the Air, or else descend.

If therefore it should be supposed, that the whole Earth were covered with Water, and that the Sun, as now, should make his diurnal Course round it, this learned Person thinks, That the Air would be impregnated with a certain Quantity of aqueous Vapours, which it would retain in it like Salts dissolved in Water; and that the Sun in the day-time warming this Air, that Part of the Atmosphere would sustain a greater Proportion of Vapours (as warm Water will hold more Salts dissolved in it than

cold) which on the absence of the Vapours at Night would be discharged in Dews.

And in this Case he concludes, there could be no Diversity of Weather, other than periodically every Year alike; the Mixture of all terrestrious, saline and heterogeneous Vapours being here excluded: which he judges to be, when variously compounded and driven by Winds, the Causes of those various Seasons and Changes of Weather which we now find.

But if instead of an Earth covered all over with Water, you suppose the Sea interspersed about wide and spacious Tracts of Land, and also divided by high Ridges of Mountains, such as the *Pyrenean*, the *Alps*, and the *Apennine*, in *Europe*; *Taurus*, *Caucasus*, *Imaus*, &c. in *Asia*; Mount *Atlas*, and the *Mountains of the Moon* in *Africa*; and the *Andes*, and *Apalatean Mountains* in *America*: each of which far surpasses the usual Height to which the aqueous Vapours of themselves ascend, and on the tops of which the Air is so cold and rarefy'd, as to retain but a small part of those Vapours which are brought thither by the Winds.

The Vapours therefore thus raised from the Sea, and by the Winds carried over the low Lands to those Ridges of Mountains, are there compelled by the Stream of the Air to mount with it up to their tops, where the Water presently precipitates, gleeting down by the Crannies of the Stones; and part of the Vapour entring into the Caverns of the Hills, the Water thereof gathers, as in an Alembick, in the Basons of Stone: and these being once full, the Overplus of the Water runs down at the lowest Place of the Bason, and breaking out by the sides of the Hills, forms single

Springs; many of which running down by the Valleys, between the Ridges of the Hills, and after uniting, form little Rivulets or Brooks; and many of these meeting again in a common Channel, form large Rivers.

Varicosum Corpus, the same as *Corpus Pyramidale*; which see.

Variolæ, the Small-Pox, a Distemper well known, and to be so variously diversify'd, that it requires a great Variety in the Method of Management.

Varix, is a little Dilatation in the Veins, where the Blood turns in a kind of Eddy, and makes a Knot upon the Part.

Vas Breve, is a short Vein passing from the Stomach to the Spleen. And,

Vasa, is applied to all the Parts of the Body having any resemblance to Vessels, which are according to the Parts or Offices distinguished into *Deferentia*, *Præparantia*, *Lactea*, *Seminalia*, &c.

Vasculiferous, are such Plants as have, besides the common *Chalyx*, a peculiar Vessel to contain the Seed; sometimes divided into Cells; and these have always a monopetalous Flower, either uniform or difform.

Vastus Externus, is a Muscle that comes from the Root of the great *Trochanter*, and part of the *Linea Aspera*. And,

Vastus Internus, arises from the Root of the lesser *Trochanter*. They both help to extend the Leg.

Vegetables, are natural Bodies having Parts organically formed, but without Sensation. Of Vegetation Dr. Woodward hath made some useful Experiments, as followeth.

An. Dom. 1691. I chose (saith he) several Glass Phials, that were all, as near as possible, of the same Shape

A. Common Spear-Mint: Spring-Water.				
The Weight of the Plant when first set in Water.	Weight of the Plant when taken out of the Water.	Weight gained by the Plant during the 77 Days.	Weight of the Water expended upon the Plant.	Proportion of the Increase of the Plant to the Expenditure of the Water.
27 Grains.	42 Grains.	15 Grains.	2558 Grains.	As 1 to 170 $\frac{8}{3}$.
B. Common Spear-Mint: Rain-Water.				
28 $\frac{1}{4}$ Gr.	45 $\frac{2}{5}$ Gr.	17 $\frac{1}{2}$ Gr.	3004 Gr.	As 1 to 171 $\frac{2}{3}$.
C. Common Spear-Mint: Thames-Water.				
28 Gr.	54 Gr.	26 Gr.	2493 Gr.	As 1 to 95 $\frac{2}{8}$.
D. Common Solanum, or Nightshade: Spring-Water.				
49 Gr.	106 Gr.	57 Gr.	3708 Gr.	As 1 to 65 $\frac{2}{7}$.
E. Latbyres seu Cataputia Gerb. Spring-Water.				
98 Gr.	101 $\frac{1}{2}$ Gr.	3 $\frac{1}{2}$ Gr.	2501 Gr.	As 1 to 714 $\frac{4}{7}$.

Shape and Bigness. After I had put what Water I thought fit into every one of them, and taken an Account of the Weight of it, I strained and tied over the Orifice of each Phial a Piece of Parchment, having a Hole in the middle of it, large enough to admit the Stem of the Plant I designed to set in the Phial, without confining or straitening it, so as to impede its Growth. My Intention in this was to prevent the enclosed Water from evaporating or ascending any other way than only thro' the Plant to be set therein.

Then I made choice of several Sprigs of Mint, and other Plants, that were, as near as I could possibly judge, alike fresh, sound and lively. Having taken the Weight of each, I placed it in a Phial, ordered as above, and as the Plant imbibed and drew off the Water, I took care to add more of the same from time to time, keeping an account of the Weight of all I added. Each of these Glasses were for better Distinction, and the more easy keeping a Register of all the Circumstances, noted with a different Mark or Letter, *A, B, C, &c.* and all set in a row in the same Window, so that all might partake alike of Air, Light, and Sun. Thus they continued from *July* the 20th to *October* the 5th, which was just 77 days. Then I took them out, weighed the Water in each Phial, and the Plant likewise, adding to its Weight that of all the Leaves that had fallen off during the time it stood thus. And lastly, I computed how much each Plant had gained, and how much Water was spent upon it. The Particulars are as follow.

A. Common Spear-Mint, set in Spring-Water.

The Plant weighed, when put in *July* 20. just 27 Grains; when ta-

ken out *October* 5. 42 Grains: so that in this Space of 77 Days, it had gained in Weight 15 Grains.

The whole Quantity of Water expended during the 77 Days, amounts to 2558 Grains; consequently the Weight of the Water taken up, was $170\frac{8}{13}$ times as much as the Plant had got in Weight.

The Specimen *D* had several Buds upon it when first set in Water; these in some days became fair Flowers, which were at length succeeded by Berries. Several other Plants were tried, that did not thrive in Water, or succeed any better than the *Cataputia* foregoing.

The Phials *F* and *G* were filled, the former with Rain, and the other with Spring-water, at the same time as those above-mentioned were, and stood as long as they did; but they had neither of them any Plant: my Design in this being only to inform my self whether any Water exhaled out of the Glasses, otherwise than thro' the Bodies of the Plants. The Orifices of these two Glasses were covered with Parchment, each Piece of it being perforated with a Hole of the same bigness with those of the Phials above: In this I suspended a bit of Stick about the thickness of the Stem of one of the aforesaid Plants, but not reaching down to the Surface of the included Water. I put them in thus, that the Water in these might not have more Scope to evaporate than that in the other Phials.

Thus they stood the whole 77 days in the same Window with the rest; when, upon Examination, I found none of the Water in these wasted or gone off: tho' I observed, both in these and the rest, especially after hot Weather, small Drops of Water, not unlike Dew, adhering to the Inside of the Glasses; that

H. Hyde-Park Conduit Water alone.

The Weight of the Plant when first set in Water.	Weight of the Plant when taken out of the Water.	What gained by the Plant during the 56 Days.	What of the Water is expended upon the Plant.	Proportion of the Increase of the Plant to the Expend of the Water.
127 Grains.	255 Grains.	128 Grains.	14190 Grains.	As 1 to 110 $\frac{1}{2}$.

I. The same Water, alone.

110 Gr.		249 Gr.		139 Gr.		13140 Gr.		As 1 to 94 $\frac{2}{3}$.
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K. The same Water, with an Ounce and a half of common Garden Earth dissolved in it.

76 Gr.		244 Gr.		168 Gr.		10731 Gr.		As 1 to 63 $\frac{1}{16}$.
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L. Hyde-Park Water, with the same Quantity of Garden Mould as the former.

92 Gr.		376 Gr.		284 Gr.		14950 Gr.		As 1 to 52 $\frac{1}{16}$.
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M. Hyde-Park Water, distilled with a gentle Fire.

114 Gr.		155 Gr.		41 Gr.		8803 Gr.		As 1 to 214 $\frac{2}{11}$.
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N. The Residue of the Water which remained in the Still after that in M was distilled off.

81 Gr.		176 Gr.		94 Gr.		4344 Gr.		As 1 to 46 $\frac{2}{3}$.
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part of them, I mean, that was above the Surface of the enclosed Waters.

The Water in these two Glasses that had no Plants in them, at the end of the Experiment, exhibited a larger Quantity of terrestrial Matter than that in any of those that had the Plants in them did. The Sediment in the bottom of the Vials was greater, and the *Nubeculae* diffused thro' the Body of the Water thicker. And of that which was in the others, some of it proceeded from certain small Leaves that had fallen from that part of the Stems of the Plants that was within the Water, wherein they rotted and dissolved. The Terrestrial Matter in the Rain-Water, was finer than that in the Spring-Water.

Experiments, Anno 1692.

The Glasses made use of in this were of the same sort with those of the former Experiment; and covered over with Parchment in like manner.

The Plants here were all Spearmint, the most kindly, fresh, sprightly Shoots I could chuse. The Water and the Plants were weighed as above, and the Phials set in a Line, in a South Window, where they stood from June the 2d, to July the 28th, which was just 56 Days.

H was all along a very kindly Plant, and had run up above two Foot in height. It had shot but one considerable collateral Branch; but had sent forth many and long Roots, from which sprung very numerous, tho' small and short lesser Fibres. These lesser Roots came out of the larger on two opposite Sides for the most part; so that each Root, with its *Fibrillae*, appeared not unlike a small Feather. To these *Fibrillae*,

adhered pretty much terrestrial Matter. In the Water, which was at the last thick and turbid, was a green Substance, resembling a fine thin *Conserva*.

The Plant *I* was as kindly as the former, but had shot no collateral Branches. Its Roots, the Waters, and the green Substance, all much as in the former.

The Plant *K*, tho' it had the misfortune to be annoyed with very small Insects that happened to fix upon it, yet had shot very considerable collateral Branches, and at least as many Roots as either in *H* or *I*, which had a much greater Quantity of terrestrial Matter adhering to the Extremities of them. The same green Substance here that was in the two preceding.

The Plant *L* was far more flourishing than any of the precedent: had several considerable collateral Branches, and very numerous Roots, to which terrestrial Matter adhered very copiously.

The Earth in both these Glasses was very sensibly and considerably wasted, and less than when first put in. The same sort of green Substance here as in those above.

The Plant *M* was pretty kindly; had two small collateral Branches, and several Roots, tho' not so many as that in *H* or *I*; but as much terrestrial Matter adhering to them, as those had. The Water was pretty thick, having very numerous small terrestrial Particles swimming in it, and some Sediment at the bottom of the Glass. This Glass had none of the green Matter above-mentioned in it.

The Plant *N* was very lively, and had sent out six collateral Branches, and several Roots.

The Glass *O* had also *Hyde-Park* Conduit-Water, in which was dissolved

olved a Dram of Nitre. The Mint set in this suddenly began to wither and decay, and died in a few Days, as likewise did two more Sprigs that were set in it successively. In another Glass I dissolved an Ounce of good Garden Mould, and a Dram of Nitre. And in a third half an Ounce of Wood-Ashes, and a Dram of Nitre; but the Plants in these succeeded no better than in the former. In other Glasses I dissolved several sorts of Earth, Clay, Marls, and variety of Manures, &c. I set Mint in distilled Mint-Water; and other Experiments I made of several kinds to get Light and Information as to what hastened or retarded, promoted or impeded Vegetation.

The Glass *P*, *Hyde-Park-Conduit* Water: In this I fixed a Glass Tube of ten inches long, the Bore about one sixth of an inch in Diameter, filled with very fine and white Sand, which I kept from falling down out of the Tube into the Phial, by tying a thin Piece of Silk over that end of the Tube that was downwards. Upon Immersion of the lower end of it into the Water, this by little and little, ascended quite to the upper Orifice of the Tube: and yet in all the 56 Days which it stood thus, a very inconsiderable Quantity of Water had gone off, *viz.* scarcely 20 Grains, tho' the Sand continued moist up to the top till the very last. The Water had imparted a green Tincture to the Sand, quite to the very top of the Tube: And in the Phial, it hath precipitated a greenish Sediment, mixed with black. To the bottom and sides of the Tube, as far as 'twas immersed in the Water, adhered pretty much of the green Substance described above. Other like Tubes I filled with Cotton, Lint, Pith of Elder, and several other porous ve-

getable Substances, setting some of them in clear Water, others in Water tinged with Saffron, Cochineal, &c. And several other Trials were made, in order to give a mechanical Representation of the Motion and Distribution of the Juices in Plants, and of some other *Phænomena* observable in Vegetation. Several Plants being also set in the Phials, Q, R, S. &c. ordered in like manner as those above, in October, and the following colder Months; these throve not near so much, nor did the Water ascend in nigh the Quantity it did in the hotter Seasons, in which the before-cited Trials were made.

Vehicle, in general, signifies what carries or bears any thing along; as the *Serum* is the Vehicle to convey the Blood-Particles; and in Pharmacy any Liquid to dilute another with, or to administer it into a Patient, is thus called.

Velocity, is the Degree of Motion in any Body; the same as Celerity.

Vena, a Vein. The Veins are only a Continuation of the extreme capillary Arteries, reflected back again towards the Heart, and uniting their Channels as they approach it, till at last they all form three large Veins; the *Cava Descendens*, which brings the Blood back from all the Parts above the Heart; the *Cava Ascendens*, which brings the Blood from all the Parts below the Heart; and the *Porta*, which carries the Blood to the Liver. The Coats of the Veins are the same with those of the Arteries, only the muscular Coat is as thin in all the Veins, as it is in the capillary Arteries; the pressure of the Blood against the sides of the Veins being less than that against the sides of the Arteries. In the Veins there is no Pulse, because the Blood is thrown into them

them with a continued Stream, and because it moves from a narrow Channel to a wider. The capillary Veins unite with one another, as has been said of the capillary Arteries. In all the Veins which are perpendicular to the Horizon, excepting those of the *Uterus* and of the *Porta*, there are small Membranes or Valves; sometimes there is only one, sometimes there are two, and sometimes three placed together, like so many half Thimbles stuck to the side of the Veins, with their Mouths towards the Heart. In the Motion of the Blood towards the Heart, they are pressed close to the side of the Veins; but if Blood should fall back, it must fill the Valves; and they being distended, stop up the Channel, so that no Blood can repass them.

The Veins are best described by beginning with their Trunks. The Trunk of the *Cava Descendens* joins the Trunk of the *Cava Ascendens*, and both together open into the right Auricle of the Heart. On the inside of the Vein where the Trunks join, there is a small Protuberance, which hinders the Blood that comes from the upper-parts, from falling upon that from the inferior Parts, but diverts both into the Auricle, where the *Cava Descendens* joins the Auricle: it receives the coronary Vein of the Heart. As soon as it pierces the *Pericardium*, it receives the *Αζυγος*, or *Vena sine Pari*; this Vein runs along the right side of the *Vertebrae* of the *Thorax*, and is made by the Union of the Veins of the Ribs on each side. Its small end, at the *Diaphragma*, is divided into two Branches, which communicate with a Vein, sometimes from the Emulgents, and sometimes from the *Cava Ascendens*. The *Cava Descendens* receives next the

Intercostalis Superior, which is distributed in the Interstices of the four first Ribs, to which the *Azygos* comes not. Remark, That the Branches both of the one and the other run in the *Sinus's* which are on the lower sides of the Ribs. *Sanmichellius* hath observed, that the Trunk of the *Cava Descendens* receives a Branch called *Pneumonica*; 'tis this Branch which accompanies the *Arteria Bronchialis* of *M. Ruysch*. The Trunk of the *Cava Descendens*, as soon as it comes to the *Claviculae*, where it is sustained by the *Thymus*, is divided into two Branches, the one goes to the right, the other to the left; they are called *Subclaviae*, which receive several other Branches: The first is the *Mammaria*, which comes sometimes into the *Cava*, before it divides into the *Subclaviae*; this Vein is distributed in the Breasts, and frequently it goes lower, and makes an *Anastomosis* with some Branches of the *Epigastrica*. The second is the *Mediastina*, which is ordinarily one opening into the Trunk of the *Cava*, it goes to the *Mediastinum* and *Thymus*. The third is the *Cervicalis* or *Vertebralis*, which goes up to the *Vertebrae* of the Neck, and casts some Branches by the bye to the *Medulla Spinalis*. The fourth is the *Muscula inferior*, which comes sometimes into the Jugulars; 'tis distributed thro' the inferior Muscles of the Neck, and the superior of the Breast. The Branch that answers this, is called *Muscula Posterior*, because 'tis distributed in the Muscles which are in the hind part of the Neck. After that the *Rami Subclavii* are come out of the Cavity of the Breast, they are called *Axillares*; they receive the *Scapularis internus* and *externus*, which go to the Muscles of the *Scapula*, and to the Glands in the Arm.

Arm-pits; then they are divided into two Branches; the superior is called *Cephalica*, and the inferior *Basilica*. Into the *Basilica* open the *Thoracica superior*, which goes to the Dugs and Muscles of the Breast; and the *Thoracica inferior*, which spreads itself upon the side of the Breast, by several Branches which communicate by *Anastomosis* with the Branches of the *Azygos*, under the Muscles of the Breast. The *Subclavii* receive also the *Jugulares externi* & *interni*, which go to the Head. The *Jugulares externi* ascend towards the Ears, where they divide in two Branches, the one internal, the other external. The internal goes to the Muscles of the Mouth, and of the *Os Hyoides*. The external lying upon the *Parotides*, divide into two Branches, of which one is spread thro' all the Face, and the Branches of the one side unite with those on the other side, and form the *Vena Frontis*: The other Branch goes to the Temples and hind Head. The *Jugulares interni* ascend to the Basis of the *Cranium*, where they are divided into two Branches, of which the greatest open into the *Sinus Lateralis* of the *Dura Mater*, by the Holes thro' which the 8th Pair of Nerves come out; the least goes to the *Pia Mater*, by the Hole which is nigh the *Cella Turcica*. The *Basilica* and *Cephalica* are the two principal Veins in the Arms and Hands. The *Cephalica* creeps along the Arm between the Skin and the Muscles; it divides into two Branches: The external Branch goes down to the Wrist, where it joins the *Basilica*, and turns up to the back of the Hand, where it gives a Branch which makes the *Salvatella* between the Ring-finger, and the little Finger. The Antients used to open this Vein in Diseases

of the Head, in continued and intermitting Fevers: but the Moderns approve not of this particular Practice; since the Knowledge of the Circulation of the Blood, there is no difference whether one be blooded in the *Cephalica*, *Mediana*, or *Basilica*. The internal Branch of the *Cephalica*, together with a Branch of the *Basilica*, makes the *Mediana*. The *Basilica*, which is the inferior Branch of the *Axillaris*, divides into three Branches, under the Tendon of the *Musculus Pectoralis*. The first Branch accompanies the fourth Branch of Nerves that goes to the Arm. The second is called *Profundus*; it reaches below the Elbow, where it divides in two Branches; the one external, which goes to the Thumb, the Fore-finger, and to the *Musculi Extensores Carpi*; the other internal, which goes to the Middle-finger, to the Ring-finger, to the little Finger, and to the inner Muscles of the Hand. The third Branch is called *Subcutaneous*, towards the inner Condyle of the Arm; it divides into the *Ramus Anterior* and *Posterior*: The first goes under the Muscles of the *Ulna* to the little Finger, where it joins a Branch of the *Cephalica*; the second, near to the Elbow, sends out a Branch which goes to the Wrist; then it unites with the *Cephalica Interior*, and forms the *Mediana*. The *Mediana*, which is made of the *Cephalica Interior*, and the second Branch of the *Ramus Subcutaneus* of the *Basilica*, divides into two Branches upon the *Radius*; the one external, called *Cephalica Pollicis*, which runs between the Thumb and the Fore-finger; the other internal, which goes between the Ring-finger and the Middle-finger, and sometimes between this last and the Fore-finger. The Trunk

of the *Cava Ascendens*, between the Heart and the *Diaphragma*, does not lie upon the *Vertebrae*, but runs at a small distance from them. At the *Diaphragma* it receives the *Phrenica* or *Diaphragmatica*. When it has pierced the *Diaphragma*, it receives some large Branches from the Liver; then the *Cava Ascendens* accompanies the great Artery from the Liver to the fourth *Vertebra* of the Loins, where it divides into two great Branches called '*Iliaci*'; but before this division, it receives four Branches from each side. The first is the *Vena Adiposa*, or *Renalis*, which is spread on the Coat and Fat that covers the Reins. The second is the *Vena Emulgens*, which goes to the Kidney, where it divides into several more Branches. The third is the *Vena Spermatica*, describ'd under *Parts of Generation*, which see. The fourth is the *Vena Lumbaris*, which is not always one, but often two or three on each side, which they divide into superior and inferior; they are bestowed on the Muscles of the Loins, and on the *Peritonæum*. They sometimes call the last Branch of the *Lumbaris*, *Muscula superior*.

There are some Anatomists who have observed, that there is a Branch of the *Lumbaris* which enters the Cavity of the *Vertebrae*, and ascends to the Brain; which gave them occasion to think, against all probability, that the Seed descended by that Vein from the Brain. A little below the Emulgents, the great Artery goes above the *Cava*: and then the *Cava* divides into two Branches called *Iliacæ*, because they pass above the *Iliæ* to go to the Thighs. Near this division they receive one or two Branches called *Venæ Sacrae*; they go to the *Medulla* of the *Os Sacrum*. Then the *Venæ Iliacæ* divide into two Branches, the

one internal, the other external. The internal receives two Branches, the *Muscula Media*, which is spread thro' the Muscles of the Thigh; the *Hypogastrica*, which is sometimes double, and spread about the *Sphincter* of the *Anus*; therefore 'tis called the *Hæmorrhoidalis Externa*. The *Hypogastrica* is spread also upon the Body of the Bladder, upon the *Matrix* and its Neck. The external Branch of the *Iliacæ* receives three Branches, two before it goes into the *Peritonæum*, and the third after it goes out of it. The first is the *Vena Epigastrica*, which comes rarely into the *Cruralis*; it goes to the *Peritonæum*, ascends to the *Musculi Recti*, where it rencounters the *Mammariæ*, with which it communicates by *Anastomosis*. The second is the *Vena Pudenda*; 'tis spread upon the Parts of Generation. The third is the *Muscula inferior*, it goes towards the Articulation of the *Femur*, and is distributed to the Muscles of this Part. The *Iliaca Exterior*, after it hath received all these Branches, takes the name *Cruralis*, and then receives six Branches more. The first is the *Vena Saphæna*, which goes down under the Skin along the inside of the Thigh and Leg, accompanied with a Nerve which loses it self at the inner Ankle. The *Saphæna* turns towards the upper part of the Foot, where it gives several Branches, of which some go to the great Toe. The second is the *Ischias minor*, this Vein is little; 'tis spent on the Muscles and Skin which are about the upper Joint of the *Femur*. The third is the *Muscula Externa*, because it goes to the external Muscles of the Thigh. On the other side of the *Cruralis*, just opposite to the beginning of this Vein, there goes out another called *Muscula Interna*, which goes to the in-

internal Muscles of the Thigh. The fourth is the *Poplitea*, made of two different Branches united together ; it goes strait down by the Ham to the Heel ; it lies pretty deep, upon which account it can hardly be opened. The Branches which appear in this place are not of this Vein. The fifth is the *Suralis*, which is pretty big, and which divides into two Branches, the one external, which is least, the other internal, which is biggest. Each of these Branches divide again into two more ; the one external, the other internal. The *Suralis* distributes its Branches upon the Fat of the Leg, and makes with the Branches of the *Poplitea*, all those *Plexus* of Veins which are conspicuous on the upper part of the Foot. The sixth and last Branch of the *Cruralis* is the *Ischias Major*, which goes also to the Muscles and Fat of the Leg, and is divided afterwards into several Branches, which are distributed to the Toes.

Venenum, Poison ; which see.

Venerica Lues. See *Lues*.

Veneris Oestrum, the Heat of Love ; expresses the utmost Extasy or Desire of Enjoyment in Coition. And some are of Opinion, that infectious Women are most apt to communicate the Poison to another when they are thus excited with Desire ; whereas with Indifference they might admit the same Intercourse without giving the Infection.

Venter, signifies any Cavity, and is chiefly applied to the Head, Breast, and *Abdomen*, which are called the three Venters. Hence also,

Ventricle, is a Diminutive of the former, and applied to more contracted Divisions, as some particular Parts of the Brain, Stomach, &c. which see.

Ventriloqui, ἰσχυροφωνοί, Persons

who pretended to emit articulate Sounds out of their Stomachs, and were supposed to be under Possession of some evil Spirit.

Veratrum, a Name for *Hellebore*.

Vermes, Worms. Whence,

Vermicular, is applied to many Parts of the Body, for their resemblance either in Shape, or Motion, to Worms.

Vermicular Pulse, is a greater Degree of the *Formicans Pulsus* ; which see.

Vermifuge, from *Vermis*, a Worm, and *fugo*, to put to flight, is any Medicine that destroys or expels Worms.

Vernacular, is any thing that is particular to a Country. Whence Diseases that reign most in any particular Country are thus called.

Verruca, is a Wart : And,

Verrucous, is applied to any Excrescencies having resemblance to a Wart.

Vertebrae : The Spine includes all the Bones that are thus called ; and by it we understand that Chain of Bone which reaches from the first *Vertebra* of the Neck to the *Os Coccygis* ; they are twenty four in number, besides those of the *Os Sacrum*, seven *Vertebrae* of the Neck, twelve of the Back, and five of the Loins ; they lie not in a strait Line, for those of the Neck bend inwards, those of the Back outwards, for enlarging the Cavity of the *Thorax* : those of the Loins bend inwards again, and those of the *Os Sacrum* outwards, to enlarge the Cavity of the Basin. In each *Vertebra* we distinguish two Parts, the Body of the *Vertebra* and its Processes ; the Body is softer and more spongy than the Processes, which are harder and more solid. The fore-part of the Body is round and convex ; the hind-part somewhat concave ; its up-

upper and lower sides are plain, each covered with a Cartilage which is pretty thick forwards, but thin backwards, by which means we bend our Body forwards: for the Cartilages yield to the pressure of the Bodies of the *Vertebrae*, which in that Motion come closer to one another. This could not be effected, if the harder Bodies of the *Vertebrae* were close to one another. Each *Vertebrae* has three sorts of Processes towards its hinder part, two transverse or lateral, one on each side; they are nearer the Body of the *Vertebrae* than the rest. In each of them there is a Tendon of the Vertebral Muscles inserted. Four oblique Processes, two on the upper part, and two on the lower, by these *Vertebrae* are articulated to one another; and one acute on the hindermost part of the *Vertebrae*. These Processes, with the hinder or concave part of the Body of the *Vertebrae*, form a large Hole in each *Vertebrae*, and all the Holes answering one another, make a Channel for the descent of the Spinal Marrow, which sends out its Nerves to the several Parts of the Body by Pairs, thro' two small Holes formed by the joining of four Notches in the side of each superior and inferior *Vertebrae*. The *Vertebrae* are articulated to one another by a *Ginglymus*; for the two descending oblique Processes of each superior *Vertebrae* of the Neck and Back have a little Dimple in their Extremities, wherein they receive the Extremities of the two ascending oblique Processes of the inferior *Vertebrae*; so that the two ascending Processes of each *Vertebrae* of the Neck and Back are received, and the two descending do receive, except the first of the Neck, and last of the Back; but the ascending Processes of each *Ver-*

tebrae of the Loins receive, and the two descending are received contrary to those of the Neck and Back. The *Vertebrae* are all tied together by a hard Membrane made of strong and large Fibres: It covers the Body of all the *Vertebrae* forwards, reaching from the first of the Neck to the *Os Sacrum*: There is another Membrane which lines the Canal, made by the large Hole of each *Vertebrae*, which also ties them all together. Besides, the Bodies of each *Vertebrae* are tied to one another by the intervening Cartilages; and the Tendons of the Muscles, which are inserted in their Processes, tie them together behind. This Structure of the *Spine* is the very best that can be contrived; for had it been all one Bone, we could have had no motion in our Backs; had it been of two or three Bones articulated for motion, the *Medulla Spinalis* must have been necessarily bruised at every Angle or Joint: besides, the whole would not have been so pliable for the several Postures we have occasion to put ourselves in. If it had been made of several Bones without intervening Cartilages, we should have had no more Use of it, than if it had been but one Bone. If each *Vertebrae* had had its own distinct Cartilage, it might have been easily dislocated. And lastly, the oblique Processes of each superior and inferior *Vertebrae* keep the middle one, that it can neither be thrust backwards nor forwards to compress the *Medulla Spinalis*. Thus much of the *Vertebrae* in general; but because they are not all alike, we shall therefore descend to a more particular Examination. The seven *Vertebrae* of the Neck differ from the rest in this, that they are smaller and harder. Secondly, That their transverse Pro-

cesses are perforated for the Passage of the vertebral Vessels. Thirdly, That their acute Processes are forked and strait; but besides this, the first and second have something peculiar to themselves. The first, which is called *Atlas*, is tied to the Head, and moves with it upon the second semicircularly; its ascending oblique Processes receive the Tubercles of the *Occiput*, upon which Articulation the Head is only moved forwards and backwards; and its descending Processes receive the ascending Processes of the second *Vertebra*. It has no acute Process, that it might not hurt the Action of the *Musculi Recti*; but a small Tubercle, to which the small Ligament of the Head is inserted. In the fore-part of its great Hole it has a pretty large *Sinus*, in which lies the Tooth-like Process of the second *Vertebra*, being fasten'd by a Ligament that rises from each side of the *Sinus*, that it compresses not the *Medulla Spinalis*. It has two small *Sinus's* in its upper part, in which the tenth Pair of Nerves and the vertebral Arteries lie. The second is called *Epistropheus*, or *Vertebra Dentata*; in the middle between its two oblique ascending Processes, it has a long and round Process like a Tooth, which is received into the fore-said *Sinus*; upon it the Head with the first *Vertebra* turns half round, as upon an Axis. The Extremity of this Process is knit to the *Occiput* by a small but strong Ligament. Luxation of this Tooth is mortal, because it compresses the *Medulla Spinalis*. The third *Vertebra* is called *Axis*; and the four following have no name, nor any peculiar difference. The twelve *Vertebrae* of the Back differ from the rest in this, that they are larger than those of the Neck, and smaller than

those of the Loins; their acute Processes slope downwards upon one another: they have in each side of their Bodies a small dimple, wherein they receive the round Extremities of the Ribs; and another in their transverse Processes, which receives the little Tubercle near that Extremity of the Ribs. The Articulation of the twelfth with the first of the Loins is by *Arthrodia*, for both its ascending and descending oblique Processes are received. The five *Vertebrae* of the Loins differ from the rest in this, that they are the broadest, and the last of them is the largest of all the *Vertebrae*. Their acute Processes are broader, shorter, and wider from one another, their transverse longer, to support the Bowels, and the Muscles of the Back; they are not perforated as those of the Neck, nor have they a Dimple or *Sinus* as those of the Back. The Cartilages which are betwixt their Bodies are thicker than any of the rest. The *Vertebrae* of the *Os Sacrum* grow so close together in Adults, as that they make but one large and solid Bone, of the Figure of an *Isoceles Triangle*, whose Basis is tied to the last *Vertebra* of the Loins, and the upper part of its sides to the *Iliac*, and its Point to the *Os Coccygis*. It is concave and smooth on its fore-side, but convex and unequal on its back-side. It hath five Holes on each side, but the Nerves pass only thro' the five on its fore-side. Its acute Processes or Spines are shorter and less than those of the Loins, and the lower is always shorter than the upper. The *Os Coccygis* is joined to the Extremity of the *Os Sacrum*; it is composed of three or four Bones, of which the lower is still less than the upper, till the last ends in a small Cartilage; it resembles a little

Tail turned inwards: Its Use is to sustain the strait Gut; it yields to the Pressure of the *Fætus* in Women in Travail, and Midwives use to thrust it backwards, but sometimes rudely and violently, which is the occasion of great Pain, and of several bad Effects. From what has been said, it is easy to understand how the Motion of the Back is performed: tho' each particular *Vertebra* has but a very small Motion, yet the Motion of all is very considerable. We have said, that the Head moves only backwards and forwards upon the first *Vertebra*, and semi-circularly upon the second. The small Protuberance which we have remarked in the Bone of the hind Head, falling upon another in the first *Vertebra*, stops the Motion of the Head backwards, that it compress not the Spinal Marrow; and when the Chin touches the *Sternum*, it can move no farther forwards. The oblique or semi-circular Motions are limited by the Ligament which ties the Process of the second *Vertebra* to the Head, and by those which tie the first to the second *Vertebra*. The Motion of the other *Vertebrae* of the Neck is not so manifest; yet it is greater than that of the *Vertebrae* of the Back, because their acute Processes are short and strait and the Cartilages which are between their Bodies thicker. The twelve *Vertebrae* of the Back have the least Motion of any, because their Cartilages are thin, their acute Processes are long, and very near to one another; and they are fixed to the Ribs, which neither move forwards nor backwards. But the greatest Motion of the Back is performed by the *Vertebrae* of the Loins, because their Cartilages are thicker, and their acute Processes are at a greater distance from one another;

for the thicker the Cartilages are, the more we may bend our Body forwards; and the greater distance there is betwixt the acute Processes, the more we may bend our selves backwards. This is the Structure and Motion of the *Vertebrae*, when they are in their natural Position: but we find them also in several Persons several ways distorted. If the *Vertebrae* of the Back stick out, such as have this deformity are said to be Bunch-back'd; and in such the Cartilages which are between the *Vertebrae* are very thin and hard forwards, but considerably thick backwards, where the oblique Processes of the superior and inferior *Vertebrae* are at a considerable distance from one another, which distance fills up with a viscous Substance. This inequality of the thickness of the Cartilages happens either by a Relaxation or Weakness of the Ligaments and Muscles, which are fastened to the back-side of the *Vertebrae*: In which Case their Antagonists finding no Opposition, remain in a continual Contraction, and consequently there can be no Motion in these *Vertebrae*. If this Deformity has been from the Womb, then the Bones being at that time soft and tender, the Bodies of the *Vertebrae* partake of the same Inequality as the Cartilages. If the Bunch be towards one Shoulder, for example, towards the right, then the Cartilages on that side are very thick, but thin and dry on the other side: On the left side the oblique *Apophyses* come close together, but on the right there is a considerable distance betwixt them; and the Ligaments and Muscles are greatly extended on the right side, but those on the left are much contracted. If the *Vertebrae* are distorted inwards, all things have a differ-

different Face: The Cartilages, and sometimes the *Vertebrae*, are very thick forwards, but very thin and hard backwards: The acute and oblique Processes are very close to one another, and the Ligaments upon the Bodies of the *Vertebrae* are greatly relaxed, but the Muscles and Ligaments which tie the Processes together are very much contracted. These Distortions seldom happen in the *Vertebrae* of the Loins; but such as are so miserable, have little or no Motion of their Back.

Vertex, is the Crown of the Head, situate between the *Sinciput* and *Occiput*; hence also figuratively it is used for the Top of any Thing. And hence,

Verticillate Plants, are such as have their Flowers intermixed with small Leaves growing in a kind of Whirls about the Joints of a Stalk, as Penny-Royal, Hore-Hound, &c.

Verticity, is the Property of the Load-stone, to turn to a particular Point.

Vertigo: This is the Appearance of visible Objects that are without Motion, as if they turned round, attended with a Fear of Falling, and a Dimness of Sight. Now it is manifest, that an Object will seem to move circularly, if the Images which proceed therefrom, fall successively upon different Parts of the *Retina*: As for instance, going towards the left side, while the Object is really without Motion, and the Images flowing therefrom always represent the same Distance, such an Object will appear moving in a Circle; for in the *Retina* the Images are reversed, and painted in a contrary Situation. And this may be done when the Object is at rest, and the Eye only moved; for whether the Object moves, and the

Eye is at rest, or the Object rests while the Eye is moved, the Rays streaming from the Object will not fall upon the same Part of the Bottom of the Eye: And therefore since we judge of the Changeableness of Place in which an Object exists, from the Changeableness of the Place where the Object is painted; an Object absolutely at rest may seem to turn round by the Eye being in motion. Again, the Object and Eye being both without Motion, the Rays will not always fall upon the same Place, if the optick Nerve be alone in Motion; and therefore since a right and an oblique Incidence do not excite the same Tremors in the Nerves, and the same Species of Motion, if the optick Nerve only be moved, and the Object be at rest, it will appear to shift its Situation, that is, by the Change of Place in which it is represented.

Vesica. See *Bladder*, which it signifies: Whence from their resemblance in shape.

Vesica Biliaria, is the Bag which holds the Gall. See *Liver*. And,

Vesica Urinaria, is a Distinction sometimes given to the common Bladder.

Vesicatoria, are external Applications, which occasion

Vesication: Which is the rising up of Blisters, or little Bladders.

Vesicula, a Diminutive of *Vesica*, and applied to the same Parts, or those that are smaller in Bulk, as the

Vesiculæ Adiposæ. See *Fat*; and

Vesiculæ Seminales. See *Generation Parts of, proper to Men*.

Vespertilionum Alæ, Bats Wings, so called from their Shape. See *Generation Parts of, proper to Women*.

Vestibulum, is a Cavity in the *Os Petrosum*, behind the *Fenestra Ovalis*,

lis, and is covered with a fine Membrane. See *Cranium*.

Veterinaria, otherwise called *Mulo-medicina*, is that part of Medicine which has the Bodies of Cattle for its Object; and was in good esteem among the Antients; but the Moderns have left it wholly to be managed by illiterate Persons; tho' if it were to fall into good Hands, it might greatly conduce to the Improvement of the Art of Physick in general: *Vegetius* has wrote a Book upon this Subject, under the Title of *Mulo-Medicina*.

Vibration is properly the Swing or Motion of a *Pendulum*, and thence comes to be used for all tremulous or undulating Motions having any resemblance thereunto.

Vigilia, Watching. See *Narcticks*.

Villi, in Anatomy, are the same as Fibres; and in Botany small Hairs like the Grain of Plush or Shag, with which, as a kind of Excrescence, some Trees do abound.

Virga, is sometimes used for the *Penis*; and in Botany for Sprouts, or Suckers.

Virginale Claustrum, the same as *Hymen*.

Virgineus Morbus, the Virgin's Disease, the same as *Chlorosis*.

Virus, signifies strictly any Poison. Hence,

Virulent, is used for a Distemper attended with dreadful Symptoms.

Vis, signifies any Force. Whence,

Vis Acceleratrix. See *Acceleration*. And,

Vis Centrifuga. See *Centrifugal Force*. And,

Vis Centripeta. See *Centripetal Force*. And,

Vis Inertiae. See *Nature Laws of*. And,

Vis Motrix. See *Motion*. And

Vis Stimulans. See *Stimulate*.

Vis vitæ, is used particularly by the learned *Boerhaave*, to signify the joint Action of all the Parts of a human Body, whereby the Machine is continually recruited and put in order. But when any thing proves too hard to be conquered by this *Vis*, a Disease ensues; Nature is over-burthened, and if it cannot be lessened or thrown off, the Disease either proves mortal, or becomes incurable.

Viscera, signifies any of the Bowels or Intrails, all which may commodiously be divided into three kinds, viz. *Chylæ*, *Uropæa*, and *Spermatopæa*, or Vessels serving for the Preparation of the Chyle, the Urine, and the Seed.

Vision. For the physical Cause of Vision, see *Eye*. And the manner by which external Objects do affect the naked Eye, is thus explained to us by the Writers in Opticks.

Suppose *abc* an Object, *iklem* the Globe of the Eye, furnished with all its Coats and Humours; but here the Crystalline Humour, *gob*, is only expressed, as being principally concerned in forming the Image in the Fund of the Eye.

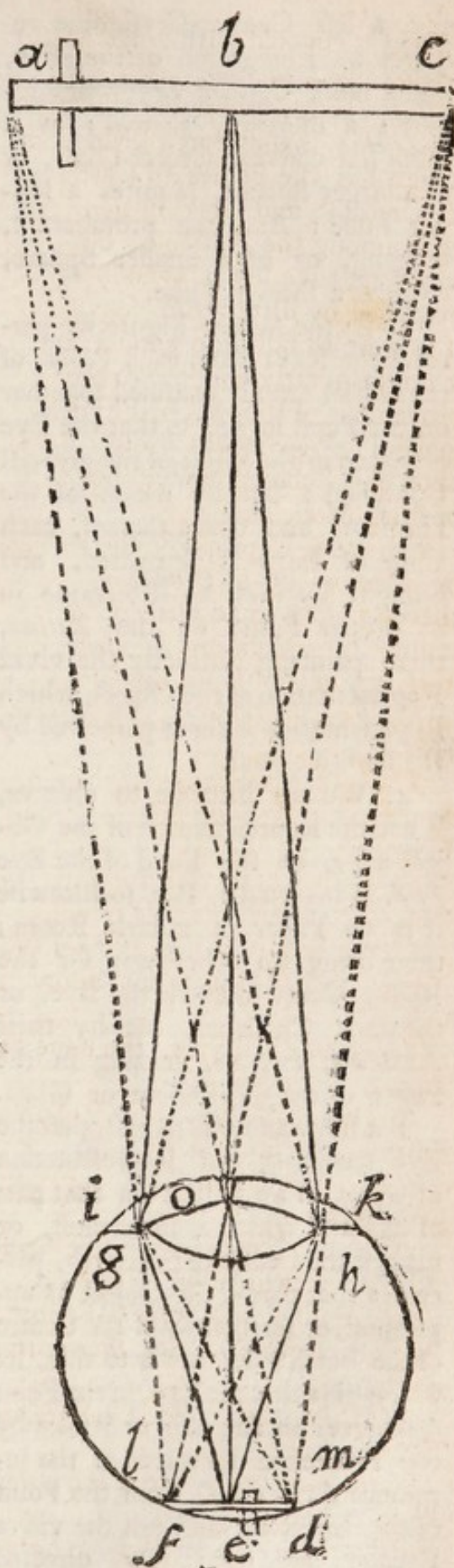
1. From each Point of the Object we may conceive Rays flowing to the Pupil of the Eye *ik*; as here from the middle Point, *b*, there proceed the Rays *bg*, *bo*, *bb*; these by means of the Coats and Humours of the Eye, and especially by the Crystalline Humour *gb*, are refracted and brought together on the *Retina*, or Fund of the Eye, in the Point *e*; and there the Point *b* is represented. For we may conceive the Crystalline Humour *gb*, as it were 'a Convex-Glass, in the Hole of a dark Chamber *ilmk*, and that *def* is the distinct Base of this Glass.

What

What is here said of the Point *b*, and its Representation at *e*, may be understood of all the other Points in the Object, as of *a* and *c*, and their Representations at *f* and *d*: For, according to Sir *Isaac Newton*'s best Hypothesis of Light, each Ray has its innate Colour, and so will represent it where it falls.

2. As in a dark Chamber that has a Hole furnished with a Convex-Glass, if the Paper that is to receive the Image in the distinct Base, be either nigher to, or further from the Glass than its due Distance, the Representation thereon is confus'd: For then the Radius Pencils do not exactly determine with their Apices on the Paper; but those from one Point are mixed and confus'd with those from the adjacent Point. So in the case of plain Vision, 'tis requisite that the Pencils should exactly determine their Apices at *d e f*, on the *Retina*, or else Vision is not distinct.

Therefore Nature has so contriv'd the Eye, that it should have a power of adapting it self in some measure to nigh and distant Objects; for they require different Conformation of the Eye, because the Rays proceeding from the luminous Points of nigh Objects, do more diverge than those from more remote Objects. But whether this variety of Conformation consists in the Crystalline's approaching nigher to, or removing further from the *Retina*, or in the Crystalline's assuming a different Convexity, sometimes greater, sometimes less, according as is requisite, is left to the Scrutiny of others, and particularly the curious Anatomists. This only may be said, that either of these Methods will serve to explain the various *Phænomena* of the Eye: And that both these may attend each other,



viz. a less Convex-Crystalline requires an Elongation of the Eye, and a more Convex-Crystalline requires a shortning thereof; as a more flat convex Object-Glass, or of a larger Sphere, requires a longer Tube: And one protuberant, bulging, or of a smaller Sphere, requires a shorter Tube.

3. By the former Figure we perceive the Rays from each Point of the Object are all confused together on the Pupil in gb , so that the Eye is placed in the Point of the greatest Confusion: but by means of the Humours and Coats thereof, each Cone of Rays is separated, and brought by itself to determine in its proper Point on the *Retina*, there painting distinctly the vivid Representation of the Object, which Representation is there perceived by the sensitive Soul.

4. We are likewise to observe, That the Representation of the Object abc , on the Fund of the Eye fed , is inverted: For so likewise it is on Paper in a dark Room; there being no other way for the Radius Cones to enter the Eye, or the dark Chamber, but by their Axis ao , bo , co , crossing in the Pole o of the Crystalline or Glass.

But how comes it to pass, that the Eye receiving the Representation of a part of an Object on that part of its Fund which is lowermost, or nighest the Centre of the Earth, perceives that part of the Object as uppermost, or farthest from the Centre of the Earth? In answer to this, let us imagine that the Eye, in the Point f , receives an Impulse or Stroke by the Protrusion forwards of the luminous Axis aof , from the Point of the Object a ; must not the visive Faculty be necessarily directed hereby to consider the Stroke, as coming from the Top a , rather than from the Bottom c ; and consequent-

ly should be directed to conclude t , the Representation of the Top?

Therefore we may be satisfy'd, by supposing a Man standing on his Head: For here, tho' the upper parts of Objects are painted on the upper parts of the Eyes, yet the Objects are judged to be erect. And from this Posture of a Man, the reason appears why we have used the Words farthest from and nighest to the Centre of the Earth, rather than upper and lower; for in this Posture, because the upper parts of the Objects are painted on that part of the Eye nighest the Earth, (tho' really the upper part of the Eye) they are judged to be farthest removed from the Earth.

What is said of Erect and Reverse, may be understood of Sinister and Dexter.

5. The Image of an erect Object being represented on the Fund of the Eye inverted, and yet the sensitive Faculty judging the Object erect, it follows, that when the Image of an erect Object is painted on the Fund of the Eye erect, the Sense judges that Object to be inverted.

6. The Magnitude of an Object is estimated by the Angle the Object subtends before the Eye. Thus, the Length of the Object ac , is estimated by the Angle aoc , fod ; and this is called the Optick Angle.

Whence it follows, that if the Eye were placed instead of the Glass at d (Fig. 2.) and abc , or efg , were Objects, the Eye would perceive them of equal Bigness.

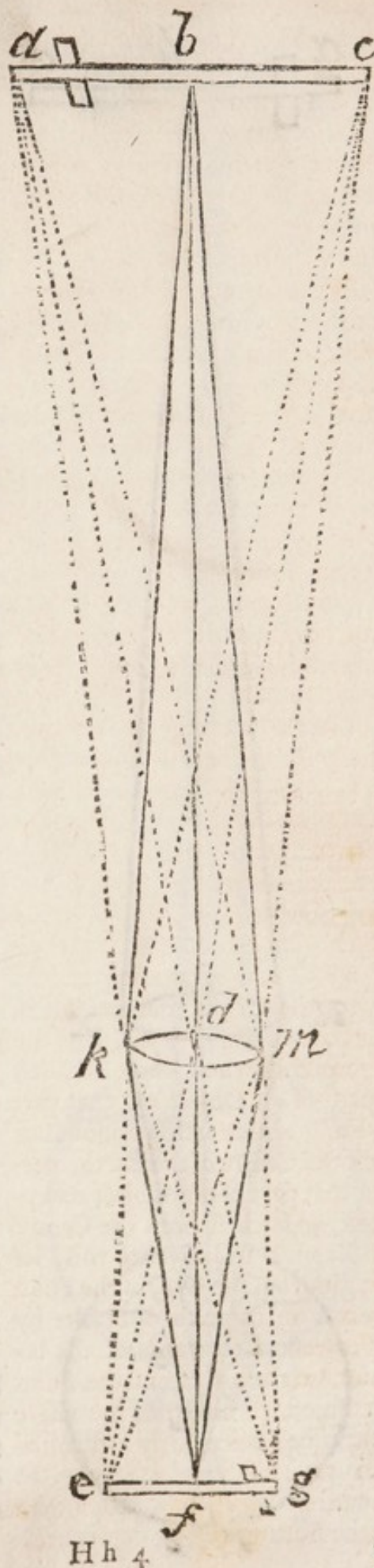
The Point o , which is the Vertex of the Optick Angle, is variously assigned by various Authors: some placing it in the Centre of the Eye; others in the Vertex of the Crystalline; others in the Vertex of the outward Coat or Serena of the Eye: but 'tis a Matter of no great conse-

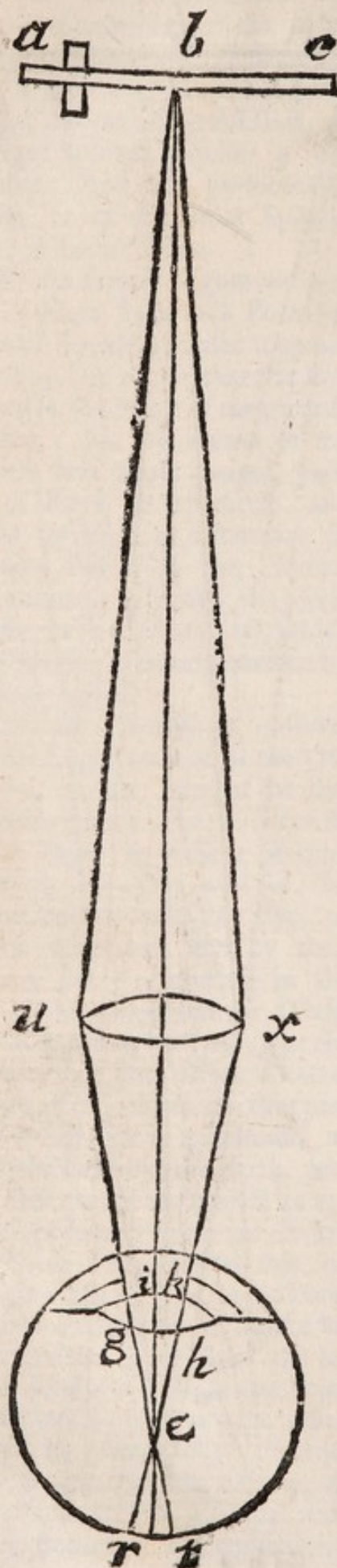
consequence where-ever we place it; for according to the Bigness of this Angle aoe , the Image on the Fund of the Eye is bigger or less.

7. We perceive the Rays that flow from the Point b do proceed to the Eye diverging, as bg , bo , bb . And if the Object ac were infinitely distant from the Eye, or so distant from the Eye, that the Breadth of the Pupil ik were insensible in comparison to this Distance; then the Rays bg , bo , bb , would proceed, as if it were parallel, and so fall on the Eye: In both which Cases, by means of the Refractions of the Eye, they are brought together, and point the Image of the Point b on the Fund of the Eye at e .

But if the diverging Rays bu , bx , (Fig. 1) that flow from the Point b , meet the Convex-Glass ux , and are thereby made to converge, as ui , xk , and so fall on the Eye, and there passing thro' the Crystalline gh , are made to converge yet more, as ie , ke : here they cross in the Point e , before they reach the Retina xt , and consequently do paint thereon the image of the Point b , confusedly, for 'tis planted on the space rt ; whereas to cause distinct Vision, it should only be painted on a correspondent Point on the Retina.

And this is the Fault of their Eyes, who are called *Myopes*, purblind, or short-sighted: For in them the Crystalline is too convex (as in Fig. 3. both the Convex-Glass and Crystalline joined together, make too great a Convexity) uniting the Rays before they arrive at the Retina: And therefore they are helped by Concave-Glasses, which take off from the too great Convexity of their Crystalline, some part of its refractive Power: Or rather these Concaves make the Rays diverge so,





that their CrySTALLINE shall be sufficient only to bring them again together, so that they be not touched, till they arrive at the Fund of the Eye.

Myopes are also helped by holding the Object very near; for then the Rays that fall on their Eye from any single Point, do more diverge than when the Eye is farther from the Point, and consequently their too convex CrySTALLINE doth but suffice to bring them together on the *Retina*.

8. On the contrary, the Eyes of old Men have their CrySTALLINE too flat (as Fig. 4.) and cannot correct the Divergence of the Rays *b u*, *b k*, to make them between the *Retina* *r t*, [but beyond the Eye at *e*. Wherefore for their help it is requisite they add the adventitious Convexity of a Glass, that both it and the CrySTALLINE together, may be sufficient to unite the Rays just at the *Retina*. And from hence it appears, that Spectacles help old Men, not by magnifying an Object, but by making its Appearance distinct; for old Men cannot read the largest Print without Spectacles, and yet with Spectacles they read the smallest; tho' these with Spectacles do not appear so large as those without Spectacles.

9. What is said of the confused or distinct Representation of a Point in the Object, may be understood of the confused or distinct Representation of the whole Object; at least for those Parts that lie pretty nigh adjacent to that Point that is looked at. For here we do not see a Point, in the strict Sense of the Mathematicians, but in a physical Sense, for the smallest Part imaginable; and the whole Object consisting of such Points, what is shewn of one Point, may be understood of every Point in the Object.

Distinct

Distinct Vision is caused when the Pencils of Rays from each Point of an Object do accurately determine in correspondent Points of the Image on the *Retina*.

Confused Vision is caused when these Pencils intermix one with another.

Clear Vision is caused by a great Quantity of Rays in the same Pencil illuminating the correspondent Point of the Image strongly and vigorously.

Faint Vision is when a few Rays make up one Pencil : and tho' this may be distinct, yet 'tis dark and obscure ; at least not so bright and strong, as if more Rays concurred.

Visitation: Epidemical and Pestilential Diseases, are by some thus called, from a Supposition of their being sent immediately from Heaven, as a Token of divine Wrath.

Visual Point, is in the Horizontal Line, wherein all the ocular Rays unite ; as when a Person stands in a strait long Gallery, wherein looking forward, the Sides, Floor, and Ceiling seem united, and touch one another in a Point or common Centre.

Visual Rays. See *Rays*.

Vita, Life, is a circulating Blood.

Vital, is every thing having Life : And,

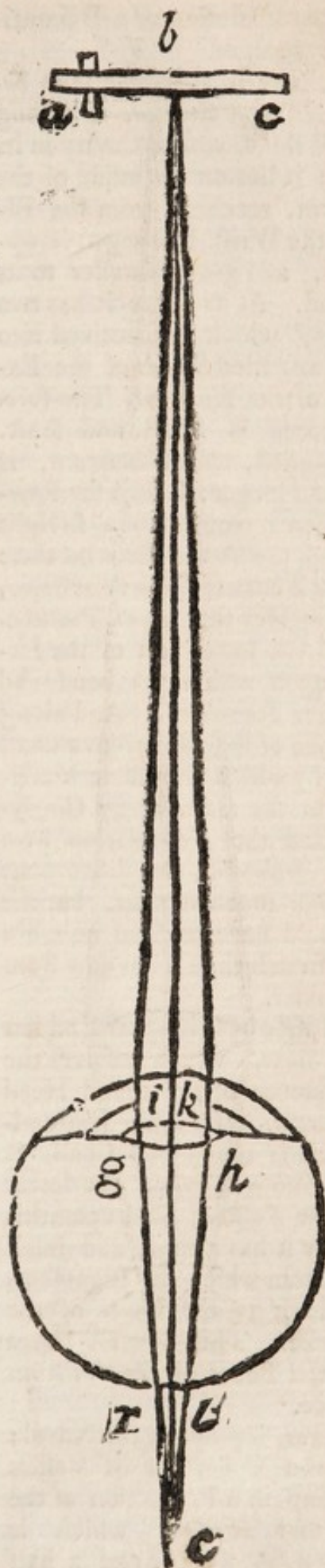
Vital Faculty, is that whereby the Heart and Arteries beat, and keep on the due Motion of the Blood. This is absolutely necessary to the continuance of Life.

Vitrification, is changing any thing into Glafs.

Viviparous, from *vivus*, alive, and *pario*, to bring forth ; are all such Creatures as bring forth their Young living and perfect.

Ulceration, and,

Ulcus, is a preternatural Discharge of Matter of various kinds from any



Part, from a Solution or a Discontinuity of Texture.

Ulna, called also sometimes *Fore-Arm*, and *Cubitus*, is a long and hard Bone, with a Cavity in its middle; it lies on the inside of the Fore-Arm, reaching from the Elbow to the Wrist. It is big at its upper end, and grows smaller to its lower end. At its upper it has two Processes, which are received into the fore and hind *Sinus's* of the Extremity of the *Humerus*. The foremost Process is small and short. The hindmost, called *Ὀλέκρانون*, is bigger and longer: It stays the Fore-Arm when it comes to a straight Line with the Arm. Betwixt these Processes it has a semi-circular *Sinus*, which receives the inner Protuberance of the lower end of the *Humerus*, upon which we bend and extend our Fore-Arm. And along the middle of that there runs a small Ridge, by which this Bone is articulated to the *Humerus* by *Ginglymus*. Had the Articulation here been at *Artbrodia*, the Joint must have been much weaker, but the Hand could have received no more Motion from it than it has now from the Shoulder.

The Inside of this upper End has a small *Sinus*, which receives the Circumference of the round Head of the *Radius*. Its lower Extremity, which is round and small, is received into a *Sinus* in the lower end of the *Radius*; and upon this Extremity it has a short and small Process, from which the Ligaments which tie it to the Bones of the Wrist arise. This Process serves to keep the Bones of the Wrist in their place.

Umbilicus, is properly the Navel; which is a Collection of Vessels wrapped up in a Production of the *Chorion* and *Amnion*, which is generally about a Foot and a half

long, that the Motion of the *Fœtus* might not pull the *Placenta* from the Womb.

Umbelliferous Plants, are such as have their Tops branched and spread out like an Umbrella, on each little Subdivision of which there is growing a small Flower; as Fennel, Dill, &c. and the Tops of these are called *Umbels* by some Writers.

Unguis, a Nail, which see.

Unguis Os. See *Maxilla Superior*.

Uniform Motion. See *Equable Motion*.

Voice. See *Larynx*.

Vola, is the Palm of the Hand.

Volatility. See *Sublimation*.

Volvulus. See *Iliac Passion*.

Vomer Os. See *Maxilla Superior*.

Vomica Pulmonum, is used indifferently for a *Polypus*, or any Collection of foreign Matter in the Lungs; but in strictness signifies an Ulcer therein, which discharges a concremented Matter; sometimes mixed with Blood from a Corrosion of the Vessels.

Vomitorium, the same as *Emetick*.

Urachus. See *Fœtus*.

Urent, any thing that is hot and burning, from *uro*, to burn.

Ureters, are two long and small Canals, which come from the Basin of the Kidneys, one on each side. They lie between the Doubling of the *Peritonæum*, and descending in the form of an S, they pierce the Bladder near its Neck, where they run first some space betwixt its Coats, and then they open in its Cavity. They are composed of three Coats: The first is from the *Peritonæum*: The second is made of small oblique muscular Fibres: and the third, which is very sensible, has several small Glands, which separate a slimy Liquor to defend it against the Acrimony of the Urine. The neighbouring Parts furnish them with Blood-vessels, and their Nerves come

come from the Intercoftals, and from the *Vertebrae* of the Loins. Their Cavity is fometimes contracted in three or four places, especially towards the Bladder. Such as are fubject to the Gravel, and given to exceffive Drinking, have them fometime fo much dilated, that one may put the End of one's little Finger into them. Their Ufe is to carry the Urine from the Kidneys to the Bladder: And their Obftruction caufes a Suppreffion of Urine.

Urethra, is a Pipe along the under Side of the *Corpora Cavernofa*, which is about 12 or 13 Inches long, beginning at the Neck of the Bladder, from which it receives the Urine; and bending to the lower Part of the *Os Pubis*, it turns up to the Roots of the *Corpora Cavernofa*, and is continued to the end of the Yard. The Sides of this Pipe are compofed of two Membranes, and a middle fpongy Subftance like that of the *Corpora Cavernofa*, except at the End which joins the Neck of the Bladder, where the Difftance between the Membranes is fmall, and filled up with a thin and red glandulous Subftance, whole excretory Ducts

piercing the inner Membrane, pour into the Pipe a mucilaginous Liquor. See *Generation Parts of, proper to Men*.

Urinaria Fifula, the fame as *Urethra*, fo called from its Office, to convey the

Urine, which is that Part of the Blood that wafhes off by the Kidneys. And,

Urinous, is any thing refembling Urine, in its moft fenfible Qualities, as Saltnefs, Smell, &c.

Uterine Medicines, are thofe which tend to promote the natural Difcharges of that Part, or fuch as are fupposed principally to affect it.

Uterus, the Womb. See *Generation Parts of, proper to Women*.

Uvea Membrana, and

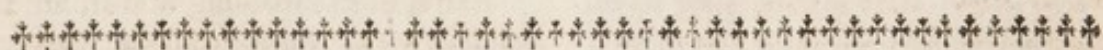
Uvea Tunica. See *Eye*.

Vulneraria, from *Vulnus*, a Wound, are healing Medicines; the fame as *Traumatick*, which fee.

Vulva. See *Generation Parts of, proper to Women*.

Vulva Cerebri, an oblong Furrow in the Brain, fo called from its Likenefs in Figure to the *Vulva*.

Uvula. See *Mouth*.



W.

Waking. See *Narcoticks*.

Water, which the Chymifts call *Phlegm*, is the fourth of the five Chemical Principles, and one of the Paffive ones. 'Tis never drawn pure and unmixed, which makes it a little more deterfive than common Water. This Principle probably contributes much to the Growth of Bodies, in that it both renders and keeps the active Principles fluid; fo that they are capable of being convey'd by Circulation into the Pores of the mix'd; and alfo, becaufe it tempers their

exorbitant Motion, and keeps them together, fo that they are not fo eafily and foon diffipated. In all fuch Bodies whole active Subftances are joined and united pretty clofely together, as in common Salt, Tartar, all Plants that are not odoriferous, and in many animal Bodies, this Principle is the firft that comes in Diffillation. But when Water is mixed with volatile Salts, or with the Spirit of Wine, or is in a odoriferous Mixtures, then the volatile Particles will rife and come away firft.

Sir *Isaac Newton* defines Water (when

(when pure) to be a very fluid Salt; volatile, and void of all Savour or Taste; and it seems to consist of small, smooth, hard, porous, spherical Particles, of equal Diameters, and of equal specifick Gravities, as Dr. Cheyne observes; and also that there are between them spaces so large, and ranged in such a manner, as to be pervious on all sides. Their *Smoothness* accounts for their sliding easily over one another's Surfaces: Their *Sphericity* keeps them also from touching one another in more points than one; and by both these their *Frictions* in sliding over one another, is render'd the least possible. Their *Hardness* accounts for the *Incompressibility* of Water, when 'tis free from the Intermixture of Air. The *Porosity* of Water is so very great, that there is at least forty times as much Space as Matter in it, for Water is nineteen times specifically lighter than Gold, and consequently rarer in the same Proportion. But Gold will by pressure let Water pass thro' its Pores, and therefore may be supposed to have (at least) more Pores than solid Parts. Now 'tis this great Porosity of Water, that accounts for its different specifick Gravity, in comparison of *Mercury* or other Fluids, and also why it is more easily concreted into a solid Form, by adventitious Matter in Freezing, than other Fluids are. Dr. Cheyne observes rightly, that the Quantity of Water on this side our Globe doth daily decrease, some part thereof being every day turned into *Animal*, *Vegetable*, *Metalline*, or *Mineral* Substances; which are not easily dissolved again into their component Parts: For separate a few Particles of any Fluid, and fasten them to a solid Body, or keep them asunder one from another, and they are no more Fluid; for to produce Fluidity,

a considerable number of such Particles is required. (See *Fluidity*.) Most of the Liquors, we know, are formed by the Cohesion of Particles of different Figures, Magnitudes, Gravities, and attractive Powers, (see *Attraction* and *Particles*) swimming in pure Water, or an aqueous Fluid; which seems to be the common Basis of all. And the only reason why there are so many sorts of Water differing from one another by different Properties, certainly is, that here the Corpuscles of Salts and Minerals, with which that Element is impregnated, are equally various. Wine is only Water, impregnated with Particles of Grapes, and Beer with Particles of Barley. All Spirits seem to be nothing but Water, saturated with saline or sulphureous Particles. And all Liquors are more or less fluid, according to the greater or smaller Cohesion of the Particles, which swim in the aqueous Fluid: and there is hardly any Fluid without this Cohesion of Particles, not even pure Water itself, as is apparent from the Bubbles which sometimes will stand on its Surface, as well as on that of Spirits and other Liquors.

For the Pressure of Water, and its Effects of Bathing, see *Baths*. And concerning medicinal Waters, see also *Baths*, and *Balnea*.

Web. See *Pin* and *Web*.

Weight. See *Gravity*.

White Line. See *Linea Alba*.

Wind, is defin'd to be the Stream or Current of the Air; and where such Current is perpetual and fix'd in its Course, 'tis necessary that it proceed from a permanent unintermitting Cause. Wherefore some have been inclined to propose the diurnal Rotation of the Earth upon its Axis, by which, as the Globe turns Eastwards, the loose and fluid Particles of the Air, being so exceeding light as they be, are left behind,

hind, so that in respect of the Earth's Surface, they move Westwards, and become a constant Easterly Wind. This Opinion seems confirmed, in that these Winds are found only near the *Equinoctial*, in those Parallels of Latitude, where the diurnal Motion is swiftest: But the constant Calms in the *Atlantick* Sea, near the *Equator*, the Westerly Winds near the Coast of *Guinea*, and the periodical Westerly *Monsoons* under the *Æquator* in the *Indian Seas*, seemingly declare the Insufficiency of that Hypothesis. Besides, the Air being kept to the Earth by the Principle of Gravity, would in time acquire the same Degree of Velocity, that the Earth's Surface moves with, as well in respect of the diurnal Rotation, as of the annual about the Sun, which is about 30 times swifter. It remains therefore to substitute some other Cause, capable of producing a like constant Effect, not liable to the same Objections, but agreeable to the known Properties of the Elements of Air and Water, and the Laws of the Motion of fluid Bodies. Such an one is the Action of the Sun's Beams upon the Air and Water, as he passes every day over the Oceans, consider'd together with the Nature of the Soil, and the Situation of the adjoining Continents. Therefore, according to the Laws of *Statics*, the Air, which is less rarefy'd or expanded by Heat, and consequently more ponderous, must have a Motion round those Parts thereof, which are more rarify'd, and less ponderous, to bring it to an *Æquilibrium*; also the Presence of the Sun continually shifting to the Westward, that part towards which the Air tends, by reason of the Rarefaction made by his greatest Meridian Heat, is with him carry'd West-

ward and consequently the tendency of the whole Body of the lower Air is that way. Thus a general Easterly Wind is formed, which being impressed upon all the Air of a vast Ocean, the Parts impel one the other, and so keep moving till the next Return of the Sun, whereby so much of the Motion as was lost, is again restor'd; and thus the Easterly Wind is made perpetual. From the same Principle it follows, that this Easterly Wind should on the North-side of the Equator be to the Northwards of the East, and in South Latitudes to the Southwards thereof; for near the Line the Air is much more rarefy'd than at a greater distance from it; because the Sun is twice in a Year vertical there, and at no time distant above 23 Degrees $\frac{1}{2}$: At which Distance the Heat being as the *Sign of the Angle of Incidence*, is but little short of that of the perpendicular Ray. Whereas under the *Tropicks*, tho' the Sun stay long vertical, yet he is a long time 47 Deg. off; which is a kind of Winter, wherein the Air so cools, as that the Summer-Heat cannot warm it to the same degree with that under the *Equator*. Wherefore the Air towards the Northward and Southward being less rarefy'd than that in the middle, it follows, that from both Sides it ought to tend towards the *Equator*. This Motion compounded with the former Easterly Wind, answers all the *Phænomena* of the general Trade-Winds; which, if the whole Surface of the Globe were Sea, would undoubtedly blow all round the World, as they are found to do in the *Atlantick* and *Ethiopick* Oceans. But seeing that so great Continents do interpose and break the Continuity of the Oceans, regard must be had to the Nature of the Soil, and

and the Position of the high Mountains, which are the two principal causes of the several Variations of the Wind from the former general Rule; for if a Country lying near the Sun, prove to be flat, sandy, and low Land, such as the Defarts of *Libia* are usually reported to be, the Heat occasioned by the Reflexions of the Sun's Beams, and the Retention thereof in the Sand, is incredible to those that have not felt it; whereby the Air being exceedingly rarefy'd, it is necessary that this cooler and more dense Air should run thitherwards to restore the *Æquilibrium*: This is supposed to be the Cause, why near the Coast of *Guinea* the Wind always sets in upon the Land, blowing Westerly instead of Easterly, there being sufficient Reason to believe, that the inland Parts of *Africa* are prodigiously hot, since the northern Borders thereof were so intemperate, as to give the Antients cause to conclude, That all beyond the *Tropicks* was made uninhabitable by excess of Heat. From the same cause it happens, that there are so constant Calms in that part of the Ocean, called the *Rains*; for this Tract being placed in the middle, between the Westerly Winds blowing on the Coast of *Guinea*, and the Easterly Trade-Winds blowing to the Westwards thereof, the Tendency of the Air here is indifferent to either, and so stands in *æquilibrio* between both; and the Weight of the incumbent Atmosphere, being diminished by the continual contrary Winds blowing from hence, is the reason that the Air here holds not the copious Vapour it receives, but lets it fall in so frequent Rains. But as the cool and dense Air, by reason of its greater Gravity, presses upon the hot and rarefy'd, 'tis demonstrative, that this latter must ascend

in a continual Stream, as fast as it rarefies; and that being ascended, it must disperse itself to preserve the *Æquilibrium*; that is, by a contrary Current the upper Air must move from those Parts where the greatest Heat is: so by a kind of Circulation, the North-East Trade-Wind below, will be attended with a South-Westerly above, and the South-Easterly and North-West Wind above. That this is more than a bare Conjecture, the almost instantaneous Change of the Wind to the opposite Point, which is frequently found in passing the Limits of the Trade-Winds, seems to assure us; but that which above all confirms this Hypothesis, is the *Phænomenon* of the *Monsoons* by this means most easily solv'd, and without it hardly explicable. Supposing therefore such a Circulation as above, 'tis to be considered, that to the Northward of the *Indian Ocean*, there is every where Land within the usual Limits of the Latitude of 30, viz. *Arabia, Persia, India, &c.* which for the same reason, as the *Mediterranean* Parts of *Africa*, are subject to unsufferable Heats, when the Sun is to the North, passing nearly vertical; but yet are temperate enough when the Sun is remov'd towards the other *Tropick*, because of a Ridge of Mountains at some distances within the Land, said to be frequently in Winter covered with Snow, over which the Air, as it passes, must needs be much chill'd. Hence it comes to pass, that the Air coming according to the general Rule, out of the North-East in the *Indian Sea*, is sometimes hotter, sometimes colder, than that which by this Circulation is returned out of the South-West; and by consequence sometimes the under Current, or Wind, is from the North-East, sometimes from the South-West. That this

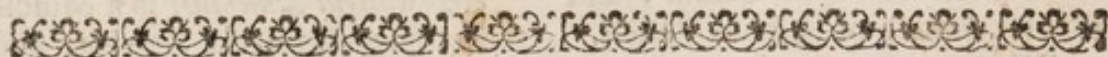
has

has no other Cause, is clear from the Times wherein these Winds set in, *viz.* in *April*, when the Sun begins to warm those Countries to the North, the South-West *Monsoons* begin, and blow during the Heats till *October*; when the Sun being retired, and all things growing cooler Northward, and the Heat increasing to the South, the North-East enter and blow all the Winter till *April* again. And it is undoubtedly from the same Principle, that to the Southward of the *Æquator*, in part of the *Indian O-*

cean, the North-West Winds succeed the South-East, when the Sun draws near the *Tropick of Capricorn*. See *Tide*.

Wolf, is a Word vulgarly used to express the Cancer in the Breast; which some are inclined to fancy a living Creature like the voracious Animal of the same Nature. But Physicians use the Word *lupus*, to signify that kind of malignant, cancerous, or phagedænic Ulcer, which like a hungry Wolf eats away the Flesh around it.

Wrist. See *Carpus*.



X.

X *Erasia*, ξηρασία, 'strictly signifies Dryness, or any thing crispy, for want of Moisture; and is therefore used for a Species of the *Alopecia*, when the Hair falls off for want of due Nourishment. Hence likewise,

Xerodes, ξηρώδης, expresses any Tumour attended with the Property of Dryness; and,

Xerophthalmia, ξηροφθαλμία, is a *Lippitudo sicca*; where the Eye-Lids turn out red and dry, and so of many other things from the same Foundation.

Xiphia, ξιφίας or ξιφός, *Ensis*, a Sword: whence some Parts having resemblance thereunto are compounded; as,

Xiphoïdes, the same as *Ensisformis Cartilago*; which see.

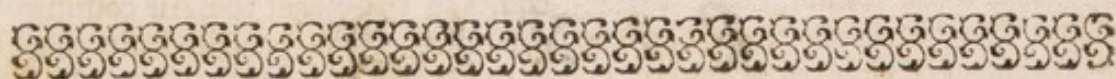
Xylo-aloes, is the Aloes-Wood, called also *Agillochum*, from ξύλον, *Lignum*; whence it is also compounded with many other things; as the

Xylo-Balsamum,

Xylo-Cinnamomum, and

Xylo-Guaiacum, are the Woods of the Balsam-Tree, Cinnamon, or Guaiacum.

Xyn, ξύν, the same as σύν, is compounded with various Words at pleasure; as *cum*, with, when changed into *con*, is in many *Latin* Compounds; particular Instances of which are needless to recite here.



Y.

Y *Ard*. See *Generation Parts of, proper to Men*.

Yerva, is by some used for the

Contrayerva, a Root now much in esteem for its alexipharmick Qualities.

Z. Zac-

Z.

Z *Accharum*, and according to some *Zuccharum*, was the ancient Name of what we now write *Saccharum*, Sugar.

Zafran or *Zaffran*, signifies any thing of a yellow Colour, and anciently for that Reason applied chiefly to *Ochre*; but it now obtains only in the *Crocus*, which we write commonly in *English* Saffron.

Zasora, is a mineral Substance, of the Nature of Bismuth, used to tinge Glafs of a blue Colour; and for the glazing of Earthen Vessels.

Zibethum, is what is now commonly wrote *Cibethum*, Civet.

Zinck, is a metallick Marcasite, which some also call *Spelter*.

Zizipha, is the same as the *Jujeb*, the Fruit of the *Ziziph*-Tree.

Zone: In what 'Sense the Astronomers use it concerns us not here; but some physical Writers, from its proper signification of a Belt, have apply'd it to the WASTE; and some to a Species of the *Herpes* most common to that part, and vulgarly called the *Shingles*.

Zoogonia, signifies the Generation of a perfect living *Fætus*, from *ζῷον* *Animal*, and *γενή* *genitura*.

Zoologia, *Zoology*, from *ζῷον*,

Animal, and *λόγος*, *Sermo*, Discourse; is any Treatise upon living Creatures, and is most commonly applied to that part of the *Materia Medica*, which is supplied from Animals.

Zootomy, from *ζῷον*, *Animal*, and *τέμνω*, *seco*, to cut; is the Dissection of living Creatures, in Anatomy.

Zygoma, the same as *Os Mali*, or *Jugale*. See *Cranium*.

Zygomaticus Musculus, is a Muscle that comes from the *Zygoma*, and passing obliquely, is inserted near the Angle of the Lips. It helps to draw the Lips obliquely to a side.

Zygomaticus Processus: Both the former are derived from *ζυγός*, *Jugum*, a Yoke. See *Maxilla Superior*, and *Cranium*.

Zythogala, *ζυθόγαλα* is Beer and Milk, which together makes what we commonly call *Posset-Drink*; a Term often to be met with in *Sydenham*.

ZZ; the Antients signified Myrrhe by these two Letters, from *ζμύρη*, a Name for it common amongst them; but the late Writers use them only for the *Zinziber*, *Ginger*.

Convulsion the Cause of pcy 1468/14
Anomphalos - Paulus Ammianus

R

